



**URBAN DEVELOPMENT DIRECTORATE (UDD)**  
**Government of the People's Republic of**  
**Bangladesh**

**Final Socio-Economic Survey Report**

**on**

**Package -03:**

**Socio-Economic and Other Related Survey under “Preparation of  
Payra-Kuakata Comprehensive Plan focusing on Eco-Tourism (PKCP)”**

**Submitted to**

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## EXECUTIVE SUMMARY

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The Socio-economic survey report of Barguna Sadar Upazila and Patharghata Upazila has been prepared and submitted by the consulting firm “Tiller” for the fulfillment of requirements stated in the Terms of Reference (ToR) for the project titled “Preparation of Payra-Kuakata Comprehensive Plan Focusing on Eco-Tourism (PKCP)” (Package-03) being planned by Urban Development Directorate (UDD) under the Ministry of Housing and Public Works. After submission of the Mobilization and Inception report, Survey report is being submitted as partial fulfillment of the Terms of Reference (ToR) of the project. Under this project, Package-03 covering two Upazila named Barguna Sadar Upazila and Patharghata Upazila in Barishal Division under Barguna District.

The vision of the project is to optimize coastal resources and activities for the sustenance of marginal people. The coastal 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 coastal zone. There is no long-term Holistic Development Plan for the coastal zone. Coastal zone needs to be integrated with the mainstream of the development process of the country. So, an interdisciplinary development planning approach is urgent to optimize the livelihood of the coastal zone.

The specific vision of this socio-economic condition of the people of different strata and also identify people’s aspiration, attitude, opinion towards the development of the area especially tourism industry; and their need, demand for their development and the project area as a whole. This report presents summary information and discussion on the survey results of various aspects of socio-economy of Barguna Sadar and Patharghata Upazila. This report is prepared based on the analysis of findings from field survey on socio-economic aspects of these two Upazila. The proposed project would be prepared on a regional development perspective considering the region as a part of the whole of Barguna Sadar and Patharghata Upazila and its 17 unions and 2 municipalities.

Barguna Sadar Upazila is situated in the Barguna District under the Division of Barishal with an area of 454.39 sq.km. It is located between 21° 15’ north latitudes and between 89°59’ and 90°14’ east. longitudes. The Upazila is bounded on the north by Mirzaganj Upazila of Patuakhali Upazila and Betagi Upazila, on the east by Amtali Upazila, on the south by the Bay of Bengal and on the West by Patharghata and Bamna Upazila. According to the Population and Housing Census 2011, the total population of the Upazila is 237613 of which 26954 are urban and 210659 are rural.

Patharghata Upazila is situated in the Barguna District under the Division of Barishal with an area of 387.36 sq.km. It is located between 21°58’ and 22°14’ north latitudes and between 89°53’ and 90°05’ east longitudes. The Upazila is bounded on the north by Bamna Upazila, on the east by Barguna Sadar Upazila, on the south by the Bay of Bengal and on the west by Sarankhola Upazila of Bagerhat zila and Mathbaria Upazila of Pirojpur zila. The Upazila aggregate population is 1,62,025 out of which males are 82,687 and females 79,338.

The project area is predominantly agricultural in character. It has been analyzed that most of the people of Barguna Sadar and Patharghata Upazila are highly dependent on

agriculture. About 86.5 percent of people depend on agricultural product and marketing in Barguna Sadar Upazila and 62.5% people depend on agricultural product and marketing in Patharghata Upazila. It indicates that most of the people work in the agricultural field and fisheries related agricultural sector. As there is no major industrial hub in this area the dependency on industrial product and marketing is very low: 3.6% in Barguna Sadar Upazila and 1.2% in Patharghata Upazila. Socio-economic condition of urban and rural households of Barguna Sadar Upazila and Patharghata Upazila varies with education, occupation, income, living condition, access to services and facilities, etc. single type households are found mostly in Barguna Sadar Upazila and Patharghata Upazila. Most of the people are involved in agricultural activity. Students are found in comparatively large quantity. Income and expenditure are higher in urban than that of rural. A number of dependent age people are found higher and thus there is an opportunity to involve this population in development activity maximizing utilization of resources. Most of the households are found the permanent residence of Barguna Sadar Upazila and Patharghata Upazila. Basic services are present in almost every area but not at a satisfactory level. There are a few options for recreation for the dwellers. Rickshaw and walking are the main transport mode for generating trips for a different purpose in these both Upazila. Water logging is the most frequent disaster occurred in Barguna Sadar Upazila and Patharghata Upazila and situation of water logging exist 1 to 3 hours in most of the cases. A major problem in these two Upazila is lack of adequate transport infrastructure and transport mode which should be the planning intervention in the project area. However, 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.

The SWOT analysis has been performed which is intended to maximize strengths and opportunities, minimize external threats, transform weaknesses into strengths and to take advantage of opportunities along with minimizing both internal weaknesses and external threats. Based on the socio-economic survey findings and SWOT analysis some recommendations are put forward for the planning interventions in the project area. The major recommendations in both of these Upazila include proper utilization of natural resources, provision agricultural infrastructure and facilities, disaster risk-sensitive land use planning, improvement of sewerage and sanitation facilities, provision of the safe embankment, provision of adequate transport infrastructure, conservation of natural drainage system and upgradation of the quality of educational institutions.

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>i</b>
Table of Contents .....	iii
List of Tables .....	ix
List of Figures.....	x
Acronyms .....	xiv
<b>CHAPTER 1. INTRODUCTION .....</b>	<b>1</b>
1.1 Background of the Project .....	1
1.2 Report Overview.....	1
1.3 Objectives of the Project.....	2
1.4 Objectives of the Report .....	2
1.5 Location of the Project Area.....	3
1.5.1 The Project Location .....	3
1.5.2 Description of the Project Area .....	4
1.5.3 List of Unions/Municipalities of the Project area .....	6
<b>CHAPTER 2. SECONDARY DATA BASED INFORMATION.....</b>	<b>7</b>
<b>2.1 Barguna Sadar Upazila .....</b>	<b>7</b>
2.1.1 Background of Barguna Sadar Upazila .....	7
2.1.2 Housing Structure .....	9
2.1.3 Access to Electricity .....	9
2.1.4 Drinking Water Sources .....	9
2.1.5 Access to Sanitary Latrine .....	10
2.1.6 Occupational Pattern .....	10
2.1.7 Population Size .....	10
2.1.8 Educational Status.....	10
<b>2.2 Patharghata Upazila.....</b>	<b>11</b>
2.2.1 Background of Patharghata Upazila .....	11
2.2.2 Housing Structures.....	13
2.2.3 Drinking Water Sources.....	13
2.2.4 Access to Sanitary Latrine .....	13
2.2.5 Access to Electricity .....	13
2.2.6 Occupational Pattern .....	13
2.2.7 Population Size .....	14
2.2.8 Age-wise Occupational Pattern .....	14
2.2.9 Age-wise Education Level.....	14
<b>CHAPTER 3: APPROACH AND METHODOLOGY .....</b>	<b>15</b>

3.1 Required Activities at a Glance .....	<b>15</b>
3.1.1 Socio-Economic Survey.....	15
3.1.2 Final Submission .....	15
3.1.3 The Executing Agency .....	16
3.2 Detail Activities .....	<b>17</b>
3.2.1 Data Collection.....	17
3.2.2 Digitalization of Data collection .....	17
3.2.2.1 Overview .....	17
3.2.2.2 Developing Apps.....	17
3.2.2.3 Questionnaire Intermigration in Software and Presentation.....	18
3.2.2.4 Data Integration, Visualization and Processing .....	19
3.2.3 Sample Size Delineation.....	22
3.2.4 Sampling Design .....	22
3.2.4.1 Sample Size Calculation .....	23
3.2.5 Data Processing and Analysis.....	24
3.2.6 Preparation of Draft Final Report.....	24
3.2.7 Preparation of Final Report.....	24
<b>4. SOCIO-ECONOMIC STATUS OF THE PROJECT AREA .....</b>	<b>25</b>
4.1 Introduction .....	<b>25</b>
<b>4.2 Social Condition of Barguna Sadar Upazila.....</b>	<b>25</b>
4.2.1 Age-Sex Structure of Barguna Sadar Upazila .....	25
4.2.1.1 Age-Sex Structure of Barguna Paurashava.....	25
4.2.1.2 Age-Sex Structure of Barguna Rural Area .....	26
4.2.2 Family Type, Size and Religion.....	27
4.2.3 Housing Status.....	30
4.2.3.1 Housing Ownership.....	30
4.2.3.2 Type of Structure.....	32
4.2.3.3 Structure Type based on Income Range.....	34
4.2.3.4 Physical Growth Trend .....	34
4.2.3.5 Plinth height of Structure Type.....	35
4.2.4 Housing for Disadvantaged Group .....	36
4.2.5 Educational Status.....	36
4.2.5.1 School Going Children Status .....	39
4.2.5.2 Reason for not Going to School .....	39
4.2.6 Occupational Status.....	40

4.2.7 Migration Information .....	41
4.2.7.1 Birth Place Status .....	41
4.2.7.2 Immigration Status.....	42
4.2.7.3 Reasons for Migration.....	43
4.2.7.4 Migration Year Trend.....	43
4.2.7.5 Family Member Living Outside .....	44
4.2.7.6 Causes of Living Outside .....	45
4.2.7.7 Time Interval of Visiting Home .....	45
4.2.8 Ranking of Problems .....	46
<b>4.3 Economic Condition of Barguna Sadar Upazila .....</b>	<b>48</b>
4.3.1 Family Income .....	48
4.3.2 Monthly Family Expenditure.....	50
4.3.3 Monthly Savings .....	50
4.3.4 Loan Status.....	52
4.3.4.1 Loan Sources.....	53
4.3.4.2 Monthly Installment.....	54
4.3.5 Remittance Status.....	55
4.3.6 Land Value .....	55
4.3.7 Economic Base of Barguna Sadar Upazila .....	55
<b>4.4 Condition of Social Infrastructure and Services of Barguna Sadar Upazila .....</b>	<b>56</b>
4.4.1 Tourism Development .....	56
4.4.2 Quality of Main Road: Traffic Congestion.....	56
4.4.3 Drainage: Drain Type .....	57
4.4.4 Water Logging Situation .....	58
4.4.4.1 Duration of Water logging .....	58
4.4.4.2 Causes of Water logging.....	59
4.4.5 Unauthorized Encroachment .....	60
4.4.5.1 Settlement on Embankment.....	60
4.4.5.2 Filling Up Canals.....	60
4.4.6 Waste Disposal System .....	61
4.4.7 Recreational Place: Playground and Park .....	62
4.4.8 Water Source and Related issues .....	63
4.4.8.1 Water Source .....	63
4.4.8.2 Water Quality.....	63
4.4.8.3 Water Collection Problem .....	64

4.4.8.4 Water Source for Drinking in Flood Time .....	65
4.4.9 Fuel Source .....	65
4.4.10 Source of Lighting .....	66
4.4.11 Type of Septic Tank.....	67
4.4.12 Quality of Different Services.....	68
4.4.13 Time Requirement for Availing Services.....	69
4.4.14 Mode Choice for Availing Different Services.....	70
4.4.15 Health Care Services for Different Income Group .....	71
<b>4.5 Climate Change Related Issues.....</b>	<b>71</b>
4.5.1 Climate Change .....	71
4.5.2 Damage of Assets due to Cyclone in 2007 and 2009 .....	72
4.5.3 Restoration from Damage of Cyclone .....	73
4.5.4 River Erosion .....	73
4.5.5 Salinity Level.....	74
4.5.6 Land Use Change .....	74
4.5.7 Causes of Land Use Change .....	75
<b>4.6 Stakeholders Participation for Planning and Development Control .....</b>	<b>76</b>
4.6.1 People Willingness to Give Land for Road .....	76
4.6.2 Modification of Embankment.....	77
4.6.3 Plan Approval Status.....	77
4.6.4 Causes of Violating Building Construction Rule .....	78
<b>4.7 SWOT Analysis of Barguna Sadar Upazila .....</b>	<b>78</b>
<b>4.8 Social Condition of Patharghata Upazila .....</b>	<b>80</b>
4.8.1 Age-Sex Structure of Patharghata Upazila .....	80
4.8.1.1 Age-Sex Structure of Patharghata Paurashava .....	80
4.8.1.2 Age-Sex Structure of Patharghata Rural Area .....	81
4.8.2 Family Type, Size and Religion.....	82
4.8.3 Housing Status .....	84
4.8.3.1 Housing Ownership.....	84
4.8.3.2 Type of Structure.....	86
4.8.3.3 Structure Type based on Income Range.....	88
4.8.3.4 Physical Growth Trend .....	88
4.8.3.5 Plinth Height of Structure Type .....	89
4.8.4 Housing for Disadvantaged Group.....	90
4.8.5 Educational Status.....	90

4.8.5.1 School Going Children Status .....	93
4.8.5.2 Reason for not Going to School .....	93
4.8.6 Occupational Status.....	94
4.8.7 Migration Information .....	95
4.8.7.1 Birth Place Status .....	95
4.8.7.2 Immigration Status.....	96
4.8.7.3 Reasons for Migration.....	97
4.8.7.4 Migration Year Trend.....	97
4.8.7.5 Family Member Living Outside .....	98
4.8.7.6 Causes of Living Outside .....	99
4.8.7.7 Time Interval of Visiting Home .....	99
4.8.8 Ranking of Problems .....	100
<b>4.9 Economic Condition of Patharghata Upazila.....</b>	<b>102</b>
4.9.1 Family Income .....	102
4.9.2 Monthly Family Expenditure.....	104
4.9.3 Monthly Savings .....	104
4.9.4 Loan Status.....	106
4.9.4.1 Loan Sources.....	107
4.9.4.2 Monthly Installment.....	108
4.9.5 Remittance Status.....	108
4.9.6 Land Value .....	109
4.9.7 Economic Base of Patharghata Upazila .....	109
<b>4.10 Condition of Social Infrastructure and Services of Patharghata Upazila .....</b>	<b>110</b>
4.10.1 Tourism Development.....	110
4.10.2 Quality of Main Road: Traffic Congestion.....	110
4.10.3 Drainage: Drain Type.....	111
4.10.4 Water Logging Situation .....	112
4.10.4.1 Duration of Water logging.....	112
4.10.4.2 Causes of Water logging .....	113
4.10.5 Unauthorized Encroachment .....	114
4.10.5.1 Footpath encroachment and Settlement on Embankment.....	114
4.10.5.2 Filling Up Canals.....	114
4.10.6 Waste Disposal System .....	115
4.10.7 Recreational Place: Playground and Park .....	116
4.10.8 Water Source and Related issues.....	117



4.10.8.1 Water Source .....	117
4.10.8.2 Water Quality .....	118
4.10.8.3 Water Collection Problem .....	118
4.10.8.4 Water Source for Drinking in Flood Time .....	119
4.10.9 Fuel Source .....	120
4.10.10 Source of Lighting .....	120
4.10.11 Type of Septic Tank .....	121
4.10.12 Quality of Different Services .....	122
4.10.13 Time Requirement for Availing Services .....	122
4.10.14 Mode Choice for Availing Different Services .....	123
4.10.15 Health Care Services for Different Income Group .....	124
<b>4.11 Climate Change Related Issues .....</b>	<b>124</b>
4.11.1 Climate Change .....	124
4.11.2 Damage of Assets due to Cyclone in 2007 and 2009 .....	125
4.11.3 Restoration from Damage of Cyclone .....	126
4.11.4 River Erosion .....	127
4.11.5 Salinity Level .....	127
4.11.6 Land Use Change .....	128
4.11.7 Causes of Land Use Change .....	129
<b>4.12 Stakeholders participation for Planning and Development Control .....</b>	<b>130</b>
4.12.1 People Willingness to Give Land for Road .....	130
4.12.2 Modification of Embankment .....	131
4.12.3 Plan Approval Status .....	131
4.12.4 Causes of Violating Building Construction Rule .....	132
<b>4.13 SWOT Analysis of Patharghata Upazila .....</b>	<b>133</b>
<b>4.14 Conclusion and Recommendations .....</b>	<b>134</b>
4.14.1 Summary of Findings .....	134
4.14.2 Recommendations on Planning Considering Social Justice .....	135
4.14.2.1 Recommendations for Barguna Sadar Upazila .....	135
4.14.2.2 Recommendations for Patharghata Upazila .....	136
<b>CHAPTER 5: KEY LEARNINGS FROM SOCIO-ECONOMIC SURVEY .....</b>	<b>137</b>
5.1 Key Learnings .....	137
Annexure 1: Questionnaire .....	139
Annexure 2: Photographs .....	146

## List of Tables

Table 1. 1: Area, Population and Density of the Project Area .....	4
Table 1. 2: List of union and municipalities in Barguna Sadar and Patharghata Upazila ..	6
Table 4. 1 Family type and religion of the people of Barguna Sadar Upazila .....	27
Table 4. 2 House ownership status of Barguna Sadar Upazila .....	30
Table 4. 3: Plinth height of different structure type .....	35
Table 4. 4: Birth place status in Barguna Sadar Upazila .....	42
Table 4. 5: Ranking of problems in Barguna paurashava.....	46
Table 4. 6: Ranking of problems in Barguna rural area .....	47
Table 4. 7: Loan status in Barguna Sadar Upazila .....	52
Table 4. 8: Paurashava and union wise loan status in Barguna Sadar Upazila.....	52
Table 4. 9: Status of visiting playground by the people of Barguna Sadar Upazila .....	62
Table 4. 10: Status of visiting park by the people of Barguna Sadar Upazila.....	62
Table 4. 11: Quality of water in Barguna Sadar Upazila .....	64
Table 4. 12: Source of drinking water during flood time in Barguna Sadar Upazila .....	65
Table 4. 13: Quality of services in Barguna Sadar Upazila.....	69
Table 4. 14: Mode choice for services in Barguna Sadar Upazila.....	70
Table 4. 15: Percentage of giving land for road.....	76
Table 4. 16: SWOT analysis of Barguna Sadar Upazila based on socio-economic survey findings.....	79
Table 4. 17: Family type and religion of the people of Patharghata Upazila .....	82
Table 4. 18: House ownership status of Patharghata Upazila .....	84
Table 4. 19: Plinth height of different structure type .....	89
Table 4. 20: Birth place status in Patharghata Upazila.....	96
Table 4. 21: Loan status in Patharghata Upazila.....	106
Table 4. 22: Paurashava and union wise loan status in Patharghata Upazila .....	106
Table 4. 23: Status of visiting playground by the people of Patharghata Upazila.....	116
Table 4. 24: Status of visiting park by the people of Patharghata Upazila.....	116
Table 4. 25: Quality of water in Patharghata Upazila .....	118
Table 4. 26: Source of drinking water during flood time in Patharghata Upazila .....	119
Table 4. 27: Quality of services in Patharghata Upazila.....	122
Table 4. 28: Mode choice for services in Patharghata Upazila .....	123

Table 4. 29: Percentage of giving land for road.....	130
Table 4. 30 SWOT analysis of Patharghata Upazila based on socio-economic survey findings.....	133

## List of Figures

Figure 1. 1: Project location in Google Map (Online) .....	3
Figure 1. 2: Project location in Bangladesh map.....	5
Figure 2. 1: Barguna Sadar Upazila Map .....	8
Figure 2. 2: Drinking Water Sources in Barguna Sadar Upazila .....	9
Figure 2. 3: Patharghata Upazila Map .....	12
Figure 3. 1: Flow diagram of the apps functioning .....	18
Figure 3. 2: Questionnaire Design in KoBoCollect.....	19
Figure 3. 3: Data view in KoBoToolbox website after submission .....	20
Figure 3. 4: Snap view of data visualization in an online map.....	21
Figure 3. 5: Snap view of data summary .....	22
Figure 4. 1 Age-Sex Structure of Barguna Paurashava .....	26
Figure 4. 2 Age-Sex Structure of Barguna Rural Area.....	27
Figure 4. 3 Family Size in Barguna Sadar Upazila .....	28
Figure 4. 4: Spatial distribution of religion in Barguna Sadar Upazila .....	29
Figure 4. 5: Spatial distribution of house ownership in Barguna Sadar Upazila.....	31
Figure 4. 6: Structure type in Barguna Sadar Upazila.....	32
Figure 4. 7: Spatial distribution of structure type in Barguna Sadar Upazila .....	33
Figure 4. 8: Percentage of structure type base on income range .....	34
Figure 4. 9: Growth trend of physical structures in Barguna Sadar Upazila.....	35
Figure 4. 10: Structure type wise plinth height in Barguna Sadar Upazila.....	36
Figure 4. 11: Educational status of Barguna Sadar Upazila .....	37
Figure 4. 12: Spatial distribution of educational status in Barguna Sadar Upazila .....	38
Figure 4. 13: Percentage of school going children in Barguna Sadar Upazila .....	39
Figure 4. 14: Reason for not going to school in Barguna Sadar Upazila .....	40

Figure 4. 15: Occupational status in Barguna Sadar Upazila .....	41
Figure 4. 16: Percentage of the household came outside of the locality .....	42
Figure 4. 17: Reasons for migration in Barguna Sadar Upazila .....	43
Figure 4. 18: Migration trend over the years in Barguna Sadar Upazila .....	44
Figure 4. 19: Percentage of the family member living outside.....	44
Figure 4. 20: Percentage of the causes of living outside .....	45
Figure 4. 21: Percentage of the frequency of visiting home .....	45
Figure 4. 22: Percentage of family income range in different Union .....	48
Figure 4. 23: Spatial distribution of family income in Barguna Sadar Upazila .....	49
Figure 4. 24: Expenditure according to income range in different sector .....	50
Figure 4. 25: Monthly savings status in Barguna Sadar Upazila.....	51
Figure 4. 26: Saving place for the people of Barguna Sadar Upazila.....	51
Figure 4. 27: Different loan source for the people of Barguna Sadar Upazila .....	53
Figure 4. 28: Installment amount status for the people of Barguna Sadar Upazila.....	54
Figure 4. 29: Remittance status in Barguna Sadar Upazila.....	55
Figure 4. 30: Economic base of Barguna Sadar Upazila .....	56
Figure 4. 31: Existing quality of roads in Barguna Sadar Upazila. ....	57
Figure 4. 32: Drain type in Barguna Paurashava .....	57
Figure 4. 33: Water logging in Barguna Sadar Upazila .....	58
Figure 4. 34: Duration of water logging in Barguna Sadar Upazila .....	59
Figure 4. 35: Causes of water logging in Barguna Sadar Upazila .....	60
Figure 4. 36: Filling up of canals by the local people of Barguna Sadar Upazila .....	61
Figure 4. 37: Waste disposal system of Barguna Sadar Upazila .....	61
Figure 4. 38: Major water source in Barguna Sadar Upazila.....	63
Figure 4. 39: Water collection related problems in Barguna Sadar Upazila.....	64
Figure 4. 40: Fuel source in Barguna Sadar Upazila .....	66
Figure 4. 41: Source of lighting in Barguna Sadar Upazila .....	67
Figure 4. 42: Type of septic tank in Barguna Sadar Upazila.....	68
Figure 4. 43: Average time need to go to service center in Barguna Sadar Upazila.....	70
Figure 4. 44: Existing health care facilities available in Barguna Sadar Upazila .....	71
Figure 4. 45: Climate change issues of Barguna Sadar Upazila .....	72
Figure 4. 46: Damage due to cyclone in 2007 and 2009 in Barguna Sadar Upazila.....	72
Figure 4. 47: Restoration from damage of cyclone in Barguna Sadar Upazila .....	73
Figure 4. 48: Scenario of river erosion in Barguna Sadar Upazila .....	73

Figure 4. 49: Salinity level in Barguna Sadar Upazila .....	74
Figure 4. 50: Percentage of land-use change status in Barguna Sadar Upazila .....	75
Figure 4. 51: Cause of land-use change in Barguna Sadar Upazila .....	75
Figure 4. 52: Percentage of people willingness to giving land for road.....	76
Figure 4. 53: People's perception on modification of embankment height .....	77
Figure 4. 54: Plan approval status in Barguna paurashava .....	77
Figure 4. 55: Causes of violating the building construction rules.....	78
Figure 4. 56: Age Sex Pyramid of Patharghata Paurashava.....	80
Figure 4. 57: Age Sex Pyramid of Patharghata Rural Area.....	81
Figure 4. 58: Family size in Patharghata Upazila.....	82
Figure 4. 59: Spatial distribution of religion in Patharghata Upazila .....	83
Figure 4. 60: Spatial distribution of house ownership in Patharghata Upazila .....	85
Figure 4. 61: Structure type in Patharghata Upazila .....	86
Figure 4. 62: Spatial distribution of structure type in Patharghata Upazila .....	87
Figure 4. 63: Percentage of structure type base on income range.....	88
Figure 4. 64: Floor wise physical growth trend in Patharghata Upazila .....	89
Figure 4. 65: Structure type wise plinth height in Patharghata Upazila.....	90
Figure 4. 66: Educational Status of Patharghata Upazila.....	91
Figure 4. 67: Spatial distribution of educational status in Patharghata Upazila .....	92
Figure 4. 68: Percentage of school going children in Patharghata Upazila .....	93
Figure 4. 69: Reason for not going to school in Patharghata Upazila .....	94
Figure 4. 70: Occupational status of Patharghata Upazila .....	95
Figure 4. 71: Immigration Status of Patharghata Upazila .....	96
Figure 4. 72: Reason for migration in Patharghata Upazila .....	97
Figure 4. 73: Migration trend over the years in Patharghata Upazila .....	98
Figure 4. 74: Percentage of the family member living outside.....	98
Figure 4. 75: Percentage of the causes of living outside .....	99
Figure 4. 76: Percentage of the frequency of visiting home .....	100
Figure 4. 77: Ranking of existing problems in Patharghata Upazila .....	101
Figure 4. 78: Percentage of family income range in different Union .....	102
Figure 4. 79: Spatial distribution of family income in Patharghata Upazila .....	103
Figure 4. 80: Expenditure according to income range in different sector .....	104
Figure 4. 81: Monthly savings status in Patharghata Upazila.....	105
Figure 4. 82: Savings places for the people of Patharghata Upazila.....	105

Figure 4. 83: Different loan source for the people of Patharghata Upazila .....	107
Figure 4. 84: Installment amount status for the people of Patharghata Upazila.....	108
Figure 4. 85: Remittance status in Patharghata Upazila .....	109
Figure 4. 86: Economic base of Patharghata Upazila .....	110
Figure 4. 87: Existing quality of roads in Patharghata Upazila .....	111
Figure 4. 88: Drain type in Patharghata Paurashava .....	111
Figure 4. 89: Water logging in Patharghata Upazila.....	112
Figure 4. 90: Duration of water logging in Patharghata Upazila .....	113
Figure 4. 91: Causes of water logging in Patharghata Upazila .....	114
Figure 4. 92: Filling up of canals by the local people of Patharghata Upazila .....	115
Figure 4. 93: Waste disposal system of Patharghata Upazila .....	115
Figure 4. 94: Major water source in Patharghata Upazila.....	117
Figure 4. 95: Water collection related problems in Patharghata Upazila .....	119
Figure 4. 96: Source of fuel in Patharghata Upazila.....	120
Figure 4. 97: Source of lighting in Patharghata Upazila.....	121
Figure 4. 98: Types of septic tank in Patharghata Upazila.....	121
Figure 4. 99: Average time need to go to service center in Patharghata Upazila.....	123
Figure 4. 100: Existing health care facilities available in Patharghata Upazila .....	124
Figure 4. 101: Climate change effects in Patharghata Upazila .....	125
Figure 4. 102: Damage due to cyclone in 2007 and 2009 in Patharghata .....	126
Figure 4. 103: Restoration from damage of cyclone in Patharghata Upazila .....	126
Figure 4. 104: Scenario of river erosion in Patharghata Upazila.....	127
Figure 4. 105: Salinity level in Patharghata Upazila.....	128
Figure 4. 106: Scenario of land use change in Patharghata Upazila.....	129
Figure 4. 107: Causes of land use change in Patharghata Upazila .....	129
Figure 4. 108: Percentage of people willingness to giving land for road .....	130
Figure 4. 109: People's perception on modification of embankment height.....	131
Figure 4. 110: Plan approval status in Patharghata Upazila .....	132
Figure 4. 111: Causes of violating the building construction rules .....	132

## **Acronyms**

<b>BBS</b>	Bangladesh Bureau of Statistics
<b>BDT</b>	Bangladesh Taka
<b>GIS</b>	Geographic Information System
<b>LGED</b>	Local Government Engineering Department
<b>NGO</b>	Non-Government Organization
<b>PD</b>	Project Director
<b>PKCP</b>	Payra Kuakata Comprehensive Plan
<b>SWOT</b>	Strength, Weakness, Opportunities and Threats
<b>ToR</b>	Terms of Reference
<b>UDD</b>	Urban Development Directorate

## CHAPTER 1. INTRODUCTION

### 1.1 Background of the Project

The project has been started which will be prepared on a regional development perspective considering the Kuakata sea beach region as a part of the whole of Kalapara, Galachipa, Rangabali, Amtali, Taltali, Patharghata, and Barguna Sadar Upazila. Amtali Upazila would also be included in the development planning package since its location is strategically important from the regional context because Amtali Upazila is situated on the way to Barisal-Kuakata highway as the highway runs through Amtali Upazila.

Taltali and Patharghata Upazila is situated within the same ecological region with that of Kalapara and Amtali Upazila. Besides Sonar char is located within Rangabali Upazila, which was further a part of erstwhile Galachipa Upazila. Hence, Galachipa and Rangabali Upazila are also included within the project area, to prepare the Eco-Tourism Development Plan for Payra Kuakata Coastal Region in an integrated and Comprehensive development planning context.

Furthermore, the third seaport has been established at Kalapara Upazila. This huge establishment would change the existing land use pattern of the region abruptly. To forecast such probable changes in existing land use pattern, and to accommodate such a massive establishment and its related changes in existing land use pattern of the region, this development planning package is essential. The proposed project would also attempt to address the issue of the impact of climate and would make a recommendation on the possible adaptation strategies.

### 1.2 Report Overview

Physical Plan aims to improve the living condition of the residents of the area for which such a plan has been prepared. In order to ascertain the felt needs, expectations and the level of prevailing services it is necessary to conduct socio-economic surveys. Socio-economic Survey provides the socio-economic profile of an area as well as attitudes/aspirations of the residents which help the planners to decide on the requirement of land for different uses as well as the level of services that needs to be ensured and incorporated in the plan document. The TOR provides for survey households of the project area to get information on the following aspects:

- Demographic information: Age, sex, growth rate, household size, migration, etc.
- Religious Group: Religious status.
- Education Status: Primary, secondary, higher & others
- Occupation Pattern: Government, private, business, farming, labor and others
- Income Level: Lower, medium and higher (income range)
- Ownership Pattern: Land ownership information, type of dwelling houses, etc.
- Land Value: Low land, ditch land, built-up & buildable land, etc.



- Health Facilities: Type of facilities in hospital, private clinic, and dispensary, etc.
  - Recreation facilities: Type of facilities (Active and Passive).
- Data from both the secondary and primary sources will be utilized to accomplish the specified objectives of the study.

### **1.3 Objectives of the Project**

The objective of the project is to optimize coastal resources and activities for the sustenance of marginal people. The coastal 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 coastal zone. There is no long-term Holistic Development Plan for the coastal zone. Coastal zone needs to be integrated with the mainstream of the development process of the country. So, an interdisciplinary development planning approach is urgent to optimize the livelihood of the coastal zone. Physical development planning problems, needing attention, are as follows:

- To integrate coastal zone with the mainstream of the development process of the country.
- To frame policies for the best use of land and its control for the Payra Kuakata coastal region.
- To optimize the coastal environment for the sustenance of marginal people.
- 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.
- Formulation of Policies and plans for gradual nucleation of settlements with policies and plans for the development of growth centers of the area.
- Formulation of a planning package for development of tourism in Payra Kuakata coastal region, and also to accommodate future changes in existing land use pattern, socio-economic condition of the area and quality of life of the people due to the establishment of the third seaport in the region in an integrated and comprehensive manner.

### **1.4 Objectives of the Report**

The specific objectives of this socio-economic studies are given below.

- Identify the socio-economic condition of the people of different strata and minority group including tribes and also identify people's aspiration, attitude, opinion towards the development of the area especially tourism industry; and their need, demand for their development and the project area as a whole.
- Identify the scenario of an interrelated complex system that is co-existent the project area covering various sectors including hydrology and coastal characteristics, environment and disaster, traffic and transportation, socio-economic and demographic characteristics, agriculture, forest and, flora and fauna, etc.
- Prepare people-oriented demand-driven planning especially for tourism development of the region.

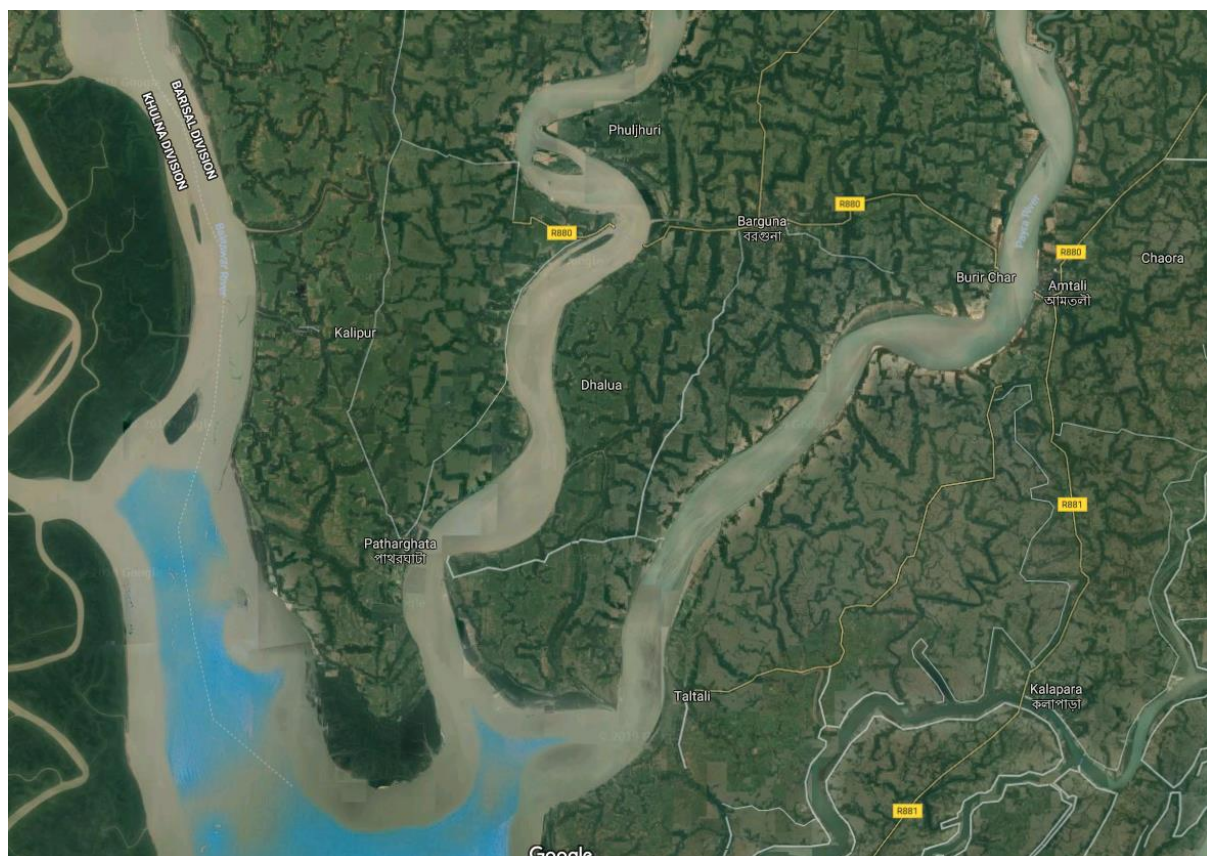
- Develop a development scenario which is compatible to all biotic and non-biotic interrelated, co-existent systems functioning in the project area to prepare a tourism development plan for Barguna Sadar and Patharghata Upazila.

## 1.5 Location of the Project Area

This section describes the basic information about the Barguna Sadar and Patharghata Upazila area and PKCP (Urban & Rural) area. The information presented in this chapter has been collected directly from the field as well as from many other secondary sources including National Population Census Reports of BBS and other relevant document.

### 1.5.1 The Project Location

The proposed project would be prepared on a regional development perspective considering the region as a part of the whole of Barguna Sadar and Patharghata Upazila and its 17 unions and 2 municipalities. In this development planning package since its location is strategically important from the regional context because this Upazila is situated in the riverside area of the ocean. And Sundarbans, the largest mangrove forest of the world is also there. So geographically it carries great importance.



Source: Google Map

**Figure 1. 1: Project location in Google Map (Online)**

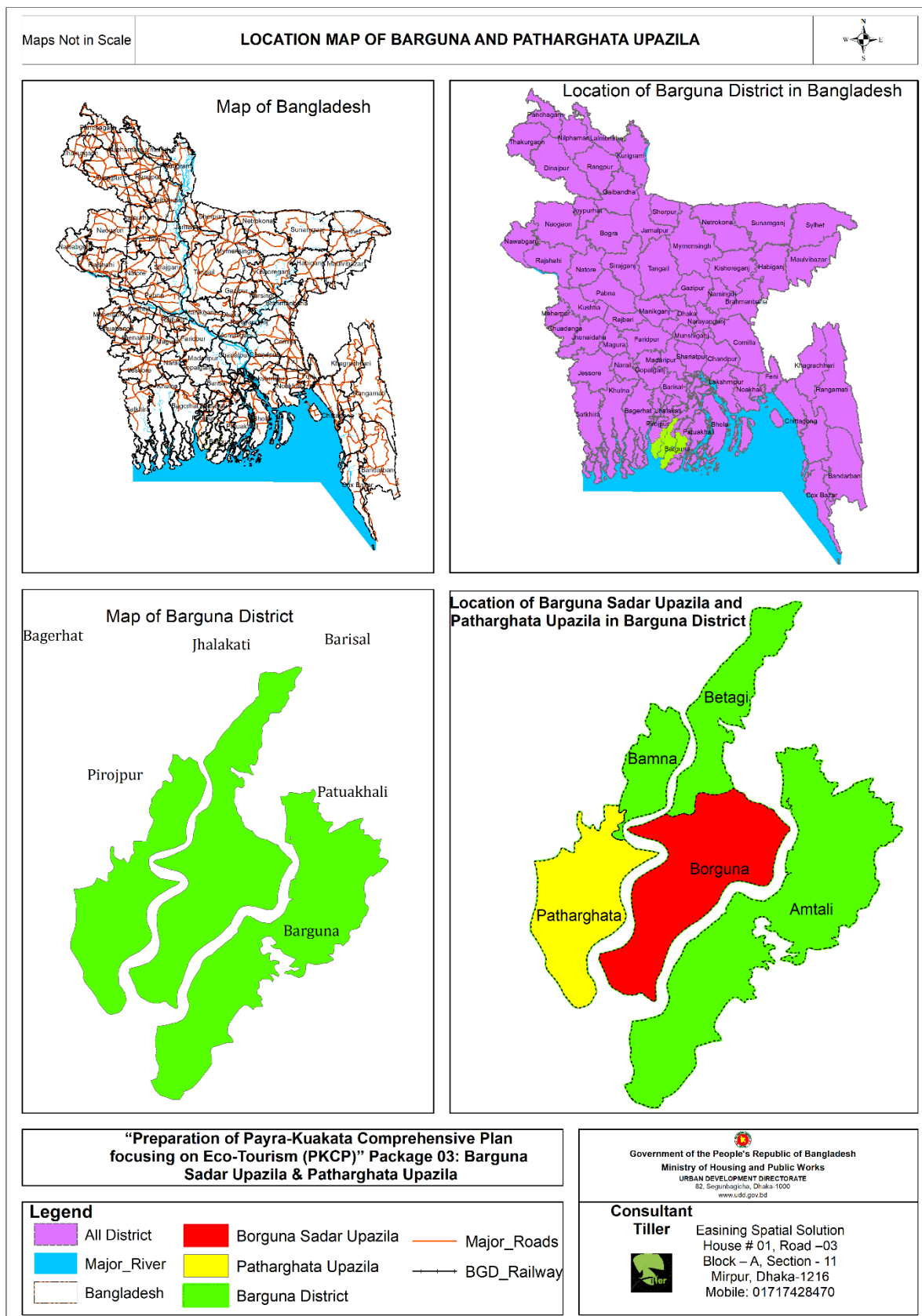
## 1.5.2 Description of the Project Area

A detailed description of the Project Area is given below:

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 a pull factor for private sector developers but the development was in an unplanned way. Hence, this project has been undertaken to protect the region from depletion of its natural resources and character and tourism development as well. Moreover, the honorable Prime Minister has already expressed his heartiest interest to develop char of this Upazila.

**Table 1. 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



Source: Consulting Firm, Tiller

**Figure 1. 2: Project location in Bangladesh map**

### 1.5.3 List of Unions/Municipalities of the Project area

Patharghata Upazila is comprised of 1 municipality and 7 union which covers an area of about 387.4 sq. km and Barguna Sadar Upazila is comprised of 1 municipality and 10 union which covers an area of about 454.4 sq. km.

**Table 1. 2: List of union and municipalities in Barguna Sadar and Patharghata Upazila**

SL	Municipality/Union	Name
	Municipality	Barguna Municipality
	Union	Aylapatakata
	Union	Badarkhali
	Union	Burir Char
	Union	Dhalua
	Union	Fuljhury
	Union	Gaurichana
	Union	Keorabunia
	Union	M.Baliatali
	Union	Naltona
	Union	Aylapatakata
	Municipality	Patharghata Municipality
	Union	Patharghata
	Union	Charduani
	Union	Kakchira
	Union	Kalmegha
	Union	Kanthaltali
	Union	Nachna Para
	Union	Raihanpur

Source: LGED, 2017

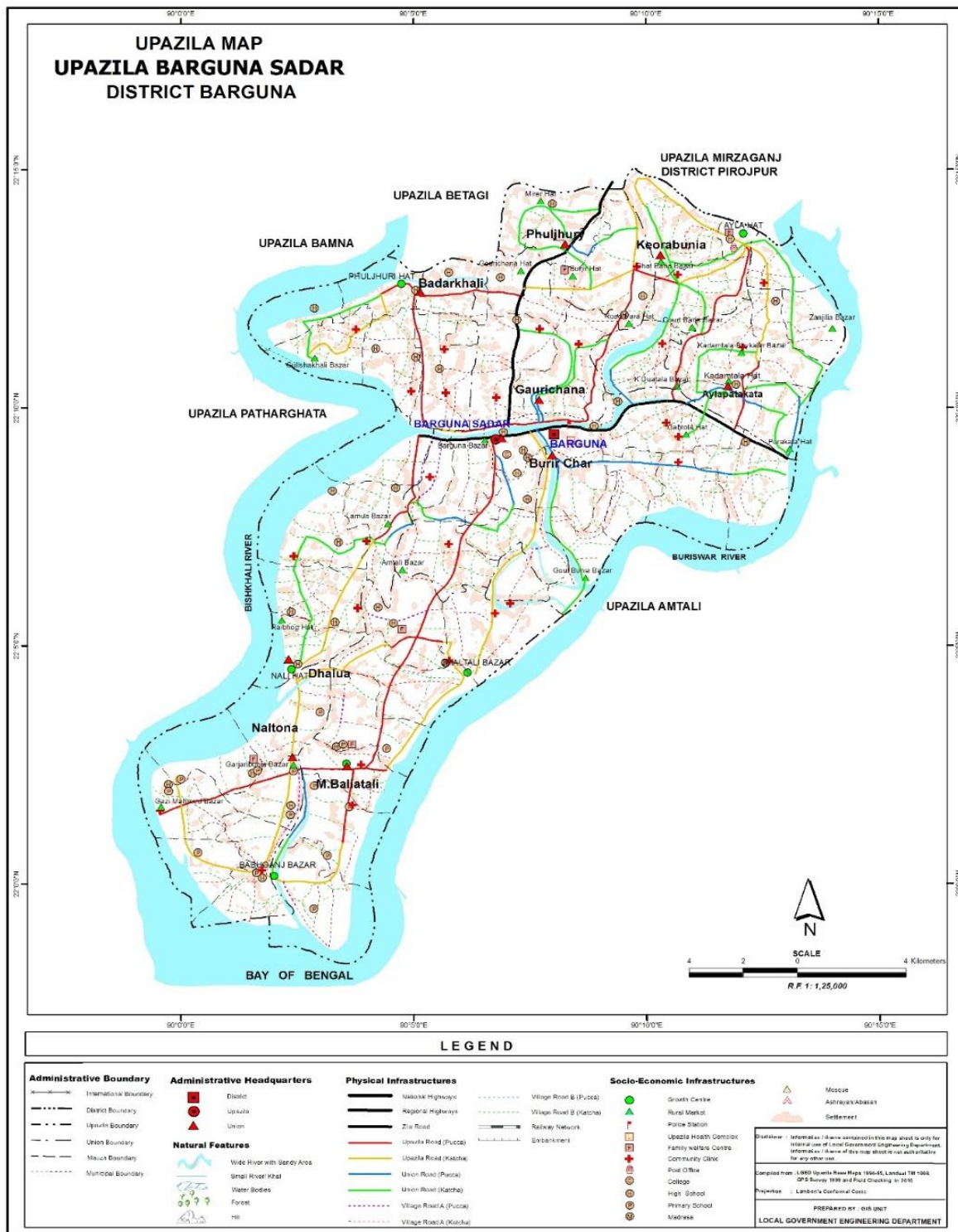
## **CHAPTER 2. SECONDARY DATA BASED INFORMATION**

### **2.1 Barguna Sadar Upazila**

Secondary data-based information related to the socio-economic condition of Barguna Sadar Upazila has been presented in this chapter for the initial understanding of the socio-economic scenario of the project area before interpreting the survey data.

#### **2.1.1 Background of Barguna Sadar Upazila**

Among five Upazilas of Barguna Sadar Upazila ranks 2<sup>nd</sup> both in an area measuring scale and in respect to population. Barguna Sadar Upazila became a police station in 1904. It was upgraded to an Upazila in November 1982. There are different opinions about the origin of the name Barguna. The general belief is that at remote past wood traders from the north had to wait here for Baragun meaning big rope to pull their boats against the strong current of the Khagdun river. It is believed that the Upazila might have derived its name from the very ward Bara Gun. It appears from the District gazetteer that the original inhabitants of this area might belong to the Austriac origin. The Upazila occupies an area of 454.39 sq.km. of which 8.26 sq.km is under forest. It is located between 21° 15' north latitudes and between 89°59' and 90°14' east. longitudes. The Upazila is bounded on the north by Mirzaganj Upazila of Patuakhali Upazila and Betagi Upazila, on the east by Amtali Upazila, on the south by the Bay of Bengal and on the West by Patharghata and Bamna Upazila. The Upazila consists of 1 Paurashava, 10 Unions, 9 wards, 51 mauzas, 18 mahallahs, and 191 villages. The number of households enumerated in the census for Upazila is 50,765. Of them, the dwelling households are 98.08%. The remaining 0.87% and 1.05% of households are institutional and others respectively.



Source: LGED Map, 2019

Figure 2. 1: Barguna Sadar Upazila Map

### 2.1.2 Housing Structure

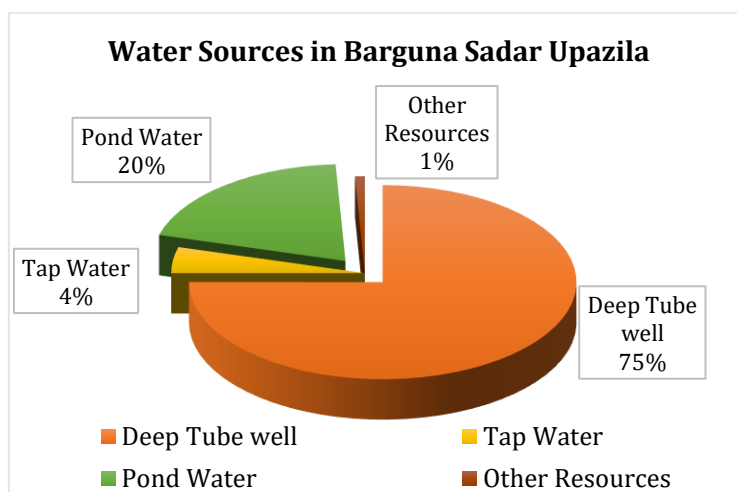
Housing structures observed for dwelling households are jhupri, kutcha, semi-pucca and pucca. Among housing structures in the Upazila, predominant is kutcha structure. Dwelling households having such structures are 76.61% in the Upazila. The kutcha housing structures are reported as 78.86% for rural 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.

### 2.1.3 Access to Electricity

Dwelling households Connected to the power network are found 15.24% in the Upazila. 56.49% urban households and 10.41% rural households are found connected to power supply.

### 2.1.4 Drinking Water Sources

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 is 22.0%, tap water 1.27%, pond water 5.82% and water of other sources 0.24%.



Source: Socio-economic Survey, 2018

**Figure 2. 2: Drinking Water Sources in Barguna Sadar Upazila**



### **2.1.5 Access to Sanitary Latrine**

Access to sanitary latrines in the Upazila is recorded for 44.15% dwelling households; in the 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%.

### **2.1.6 Occupational Pattern**

Dwelling households owning agricultural land in the Upazila are 66.15%. The remaining 33.85% are either landless or owning lands not used for agriculture. In rural and urban areas, the agriculture land owning Dwelling households are 67.70% and 52.94% respectively. Dwelling households having agriculture as the main source of income are 55.82%. of them, those earning main income from crop and non-crop (livestock, forestry & fishery) farming are 39.65% and the rest 16.17% are agriculture labor.

### **2.1.7 Population Size**

The Upazila aggregate population is 2,37,613 out of which males are 1,20,830 and females 1,16,783. The sex ratio is 103 as it was in 1991. Over the period 1991-2001, the population growth rate is estimated at 8.14%; the annual growth is 0.79%.

### **2.1.8 Educational Status**

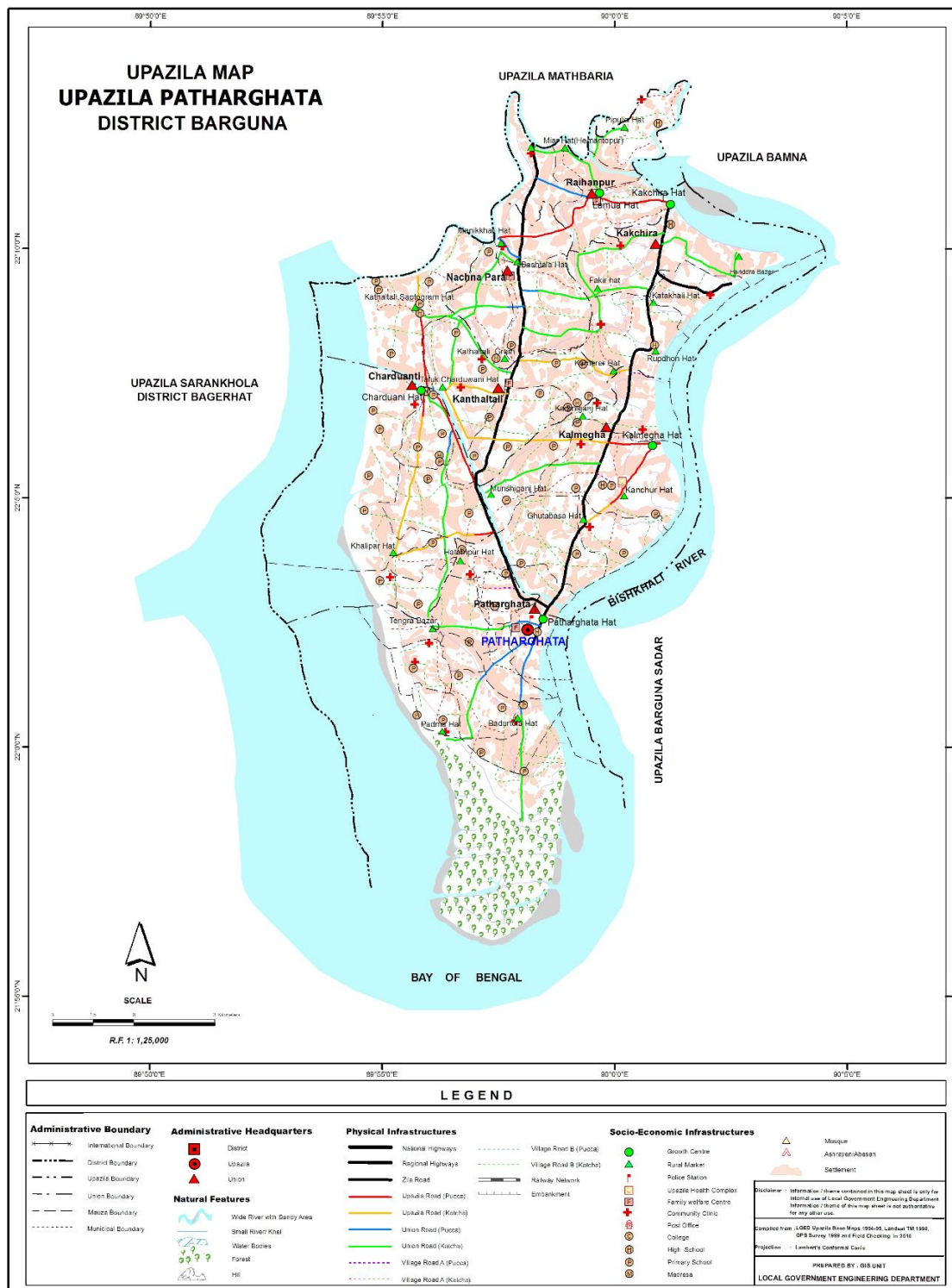
Literacy among the population aged 7 years and over the literacy rate is 55.18% in the Upazila. School attendance of the Upazila among 5 to 24 age group population of the Upazila, those who are males and have reported attending schools are 48.92%. In the case of females in the same age group, the school attendance is 42.86%. The respective rural and urban males of the group have school attendance 48.45% and 52.49% compared to school attendances 42.30% and 47.45% of rural and urban females. Female enrolment ratios in age groups 15-19 and 20-24 are found significantly lower as compared to male enrolment ratios of the respective age groups.

## **2.2 Patharghata Upazila**

Secondary data-based information related to the socio-economic condition of Patharghata Upazila has been presented in this chapter for the initial understanding of the socio-economic scenario of the project area before interpreting the survey data.

### **2.2.1 Background of Patharghata Upazila**

Among five Upazilas of Barguna Zila, Patharghata Upazila ranks 3rd both in an area measuring scale and respect to population. Patharghata as a thana came into existence in 1925 and was upgraded into Upazila in 1983. Nothing is definitely known about the origin of the name of this Upazila. But there is popular hearsay that the famous saint Khawaja Khan Jahan Ali took rest at the river station (ghat) situated at the meeting place of the rivers. The Upazila might have derived its name from the very words *Pathar* and *Ghat*. Baleswar and Bishkhali while carrying stones (pathar) from Chittagong to Bagerhat for constructing the Sat Gombuj Mosque. It appears from the district gazetteer that the original inhabitants of this area belong to Austric origin. The Upazila occupies an area of 387.36 sq.km. with 37.29 sq.km. forest area. It is located between 21°58' and 22°14' north latitudes and between 89°53' and 90°05' east longitudes. The Upazila is bounded on the north by Bamna Upazila, on the east by Barguna Sadar Upazila, on the south by the Bay of Bengal and on the west by Sarankhola Upazila of Bagerhat Zila and Mathbaria Upazila of Pirojpur Zila. The Upazila consists of 1 paurashava, 7 unions, 9 wards, 42 mouzas, 9 mahallahs, and 66 villages. The average population size of each union, ward, mouza, mahallah, and village are 21107, 1586, 3518, 1586 and 2239 respectively.



## **2.2.2 Housing Structures**

The number of households enumerated in the census for Upazila is 34,477. Of them, the dwelling households are 98.29%. The remaining 0.52% and 1.19% of households are institutional and others respectively.

Housing structures observed for dwelling households are jhupri, kutcha, semi-pucca and pucca. Among housing structures in the Upazila, predominant is kutcha structure. 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% of rural dwelling households.

## **2.2.3 Drinking Water Sources**

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

## **2.2.4 Access to Sanitary Latrine**

Access to sanitary latrines in the Upazila is recorded for 47.64% dwelling households; in rural-segment, such households are counted 44.02% and in urban locality much higher 67.63%. Non-sanitary latrines are found being used by 46.66% dwelling households. In rural and urban regions such households are 49.82% and 29.24% respectively. Dwelling households making use of open spaces in the Upazila are 5.70%.

## **2.2.5 Access to Electricity**

Dwelling households connected to the power network are found 5.43% in the Upazila. 25.41% urban households and 1.81% rural households are found connected to power supply.

## **2.2.6 Occupational Pattern**

Dwelling households owning agriculture land in the Upazila are 64.49%. The remaining 35.51% are either landless or owning lands not used for agriculture. In rural and urban areas, the agriculture land owning dwelling households are 66.25% and 54.75% respectively. Dwelling households having agriculture as the main source of income are 60.30%. Of them, those earning main income from crop and non-crop (livestock, forestry & fishery) farming are 42.17% and the rest 18.13% are agriculture labor. Other dwelling households reported earning main income from non-agriculture labour are 3.87%, business 15.88%, regular employment 6.42%, construction 1.46%, religious service 0.19%, rent & remittance 0.25%, transport & communication 2.21%, industry 0.55% and others 8.87%. The rural dwelling households are observed getting main incomes from

agriculture are 64.81%, non-agriculture labor 4.00%, business 13.41%, regular employment 5.23%, construction 1.29%, religious service 0.17%, rent and remittance 0.24%, transport and communication 1.83%, industry 0.48% and others 8.52%. In urban area dwelling households having main income from agriculture are 35.41%, non-agriculture labour 3.15%, business 29.53%, regular employment 13.01%, construction 2.38%, religious service 0.25%, rent and remittance 0.29%, transport and communication 4.27%, industry 0.94% and others 10.77%.

### **2.2.7 Population Size**

The Upazila aggregate population is 1,62,025 out of which males are 82,687 and females 79,338. The sex ratio is 104. The ratio was 102 in 1991. Over the period 1991-2001, the population growth rate is estimated at 20.34%; the annual growth is 1.87%.

### **2.2.8 Age-wise Occupational Pattern**

The Upazila population 10 years of age is 23.97%. Among population of age of 10 years and above, those idle are 27.22%, looking for work 1.69%, doing household work 36.40% and employed the remaining the employed people identified working in agriculture are 19.33%, industry 0.18%, business 6.05%, 0.70%, constructions 0.68%, transport, and communication 0.94% and others 6.81%. Among the population aged 7 years and over in the Upazila, the literacy rate is 63.2%.

### **2.2.9 Age-wise Education Level**

Among 5 to 24 age group population of the Upazila, those who are males and have reported attending school are 51.85%. In the case of females in the same age group, school attendance is 48.00%. The rural and urban males of the group have school attendance levels 51.58% and 53.37% wed to school attendances 47.50% and 50.83% of rural and urban females.

## CHAPTER 3: APPROACH AND METHODOLOGY

### 3.1 Required Activities at a Glance

The required activities that have been adopted throughout the socio-economic study are presented in brief for quick easy understanding of approach and methodology of the study.

#### 3.1.1 Socio-Economic Survey

Socio-economic survey procedure has been depicted below to understand the survey method.

- A questionnaire has been designed in an online communication device (tablet) compatible format (apps) in consultation with PD
- Household sample survey has been done using the approved Questionnaire based on specified Questionnaire format indicated in TOR. According to the TOR, sample size will be minimum 200 questionnaires at each municipality and 200 at the rural areas of each Upazila. (Sample size shall be determined in consultation with PD).
- Surveys have been conducted on the issues like tourism development, housing for a disadvantaged group, land value, informal economic activity, traffic congestion, drainage, water logging, unauthorized encroachment, waste disposal, playground and park, stakeholders' participation for planning and development control, etc.
- During conducting the survey, geo-coordinate and photograph of the household including a photograph of the respondent have been taken and uploaded to the website instantly by using an online communication device (tablet).
- The survey firm has checked the quality of data and upload the data to the computer at the end of the same day.
- The survey firm has identified the location of the household on a physical feature map and links the household surveyed with that of the spatial database in Arc GIS.
- The survey firm has linked the attribute data of the socio-economic survey with that of the spatial data base in Arc GIS.
- The survey firm has provided a spatial translation of the interpretation obtained from data analysis to draw a scenario of the output of socio-economic survey on space.
- Inventory of the survey has been prepared as per format prepared in consultation with PD. Data processing, analysis of survey data, mapping, working paper containing planning strategy and development options, and reporting has been made as per requirement of TOR.

#### 3.1.2 Final Submission

After completing of all survey works and linking all attribute and spatial database with each other the survey firm has already submitted survey report stating actual methodology explaining detailed procure adopted in the field survey, problems faced

during survey work, how the problems were solved, interlinking of database with that of different other surveys (including physical feature, land use, topography, etc.). The report has also contained detailed information relating to data uploaded to the website. The survey firm has submitted all raw database including a map, questionnaire, photograph, etc. and spatially linked database along with survey report. Before that mobilization and inception report had submitted.

Secondly, the survey has to be submitted the interim report on data linking of Database with the main GIS database and upload the Data on web site processing, spatial translation of socio-economic database and linking with GIS database analysis, Interpretation, presentation of the existing situation. And this report is the survey report containing all these aspects which have already mentioned.

Finally, a final report with recommendations on planning with Social Justice will be prepared and submitted to UDD.

### **3.1.3 The Executing Agency**

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

The 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 balanced 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 a woman. Urban Development Directorate would welcome any co-operation, assistance, and patronage from national and international quarters.

## **3.2 Detail Activities**

Detailed activities that have been performed to complete the socio-economic survey and analysis are explained in the flowing sections:

### **3.2.1 Data Collection**

Socio-Economic and Other related survey (traffic survey, bathymetric study report, tidal data and information, survey of Urban and Rural Economy, environment studies, disaster studies, social space studies, hotel/motel accommodation survey etc. as specified in the ToR) have been collected through smart technology and manpower. And secondary data has been collected from different authentic sources.

### **3.2.2 Digitalization of Data collection**

Socio-economic data has been collected in a digital way using KoBo Toolbox and KoBo Collect app. The detail of the process has been depicted below.

#### **3.2.2.1 Overview**

There is a wide range of data collection tools available online and a number of options. Most of these options provide both free and paid subscription plans with varying levels of features. These tools are a great way to replace paper forms that allow you, or members of your team, to gather data in the field such as pictures, barcodes, signatures and more. Most of the applications like-Device Magic, Magpi, TrackVia, Formhub, KoboCollect, Open Data Kit, etc. will allow for the collection of data on a mobile device even whilst offline. And for this project, we have used KoBoCollect which have been approved by the project director.

#### **3.2.2.2 Developing Apps**

“KoBo Toolbox” and “KoBo Collect” app will be used to collect attributes of the features.

Step 1: XLSForm form will be created with KoBo Toolbox form builder. These types of form can consist of a different type of questions like location, decimal, text, photo, barcode, etc with customizable skip logic.

Step 2: Then the created form will be deployed to their server including metadata like date, start time, end time, username, device id, etc.

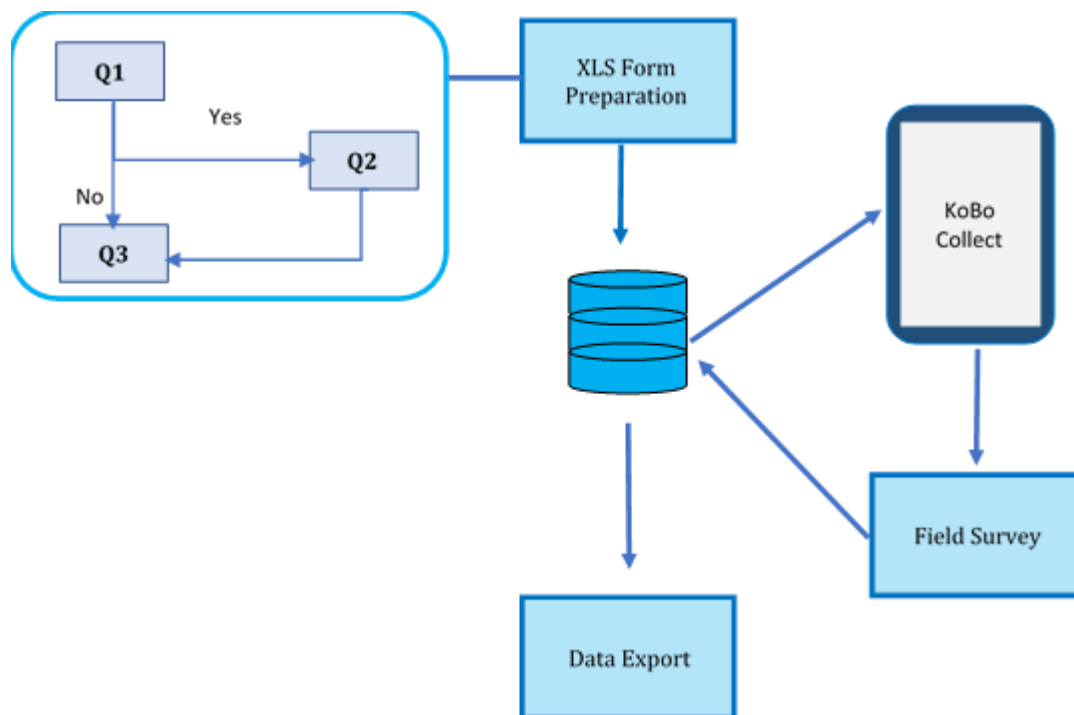
Step 3: The deployed form can be downloaded to the mobile app, KoBo Collect and can be filled up offline in the field.

Step 4: Surveyor will visit the field and according to the printed map, they will collect attributes data of the physical feature with the provided tab.

Step 5: At the end of the day/survey they will send the collected data to the server.

Step 6: Finally, data is ready to be exported in different formats from their server.



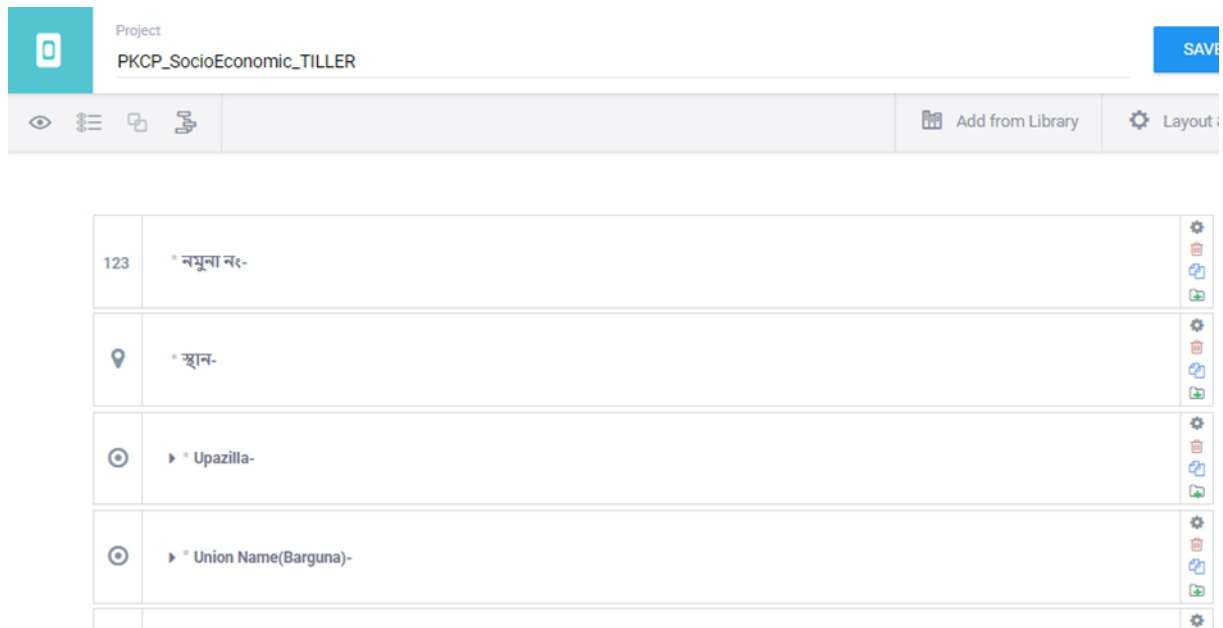


Source: Consulting Firm, Tiller

**Figure 3. 1: Flow diagram of the apps functioning**

### 3.2.2.3 Questionnaire Intermigration in Software and Presentation

The questionnaire has been developed in KoBoCollect software to collect data with geographic location (longitude and latitude) and picture. Online data collection through KoBoCollect has been presented in the meeting of UDD in front of UDD director and other key personnel. A sample of taking information through KoBoCollect also has been shown in the PIC meeting by collecting data.



The screenshot shows the KoBoCollect interface for a project named 'PKCP\_SocioEconomic\_TILLER'. The questionnaire design is displayed as a list of questions in Bengali. The first question is 'নমুনা নং-' (Sample No.) with a numeric input field containing '123'. The second question is 'স্থান-' (Location) with a location pin icon. The third question is 'Upazilla-' (Upazila) with a dropdown arrow icon. The fourth question is 'Union Name(Barguna)-' (Union Name) with a dropdown arrow icon. Each question row has a settings icon on the right.

123	* নমুনা নং-	
	* স্থান-	
	▶ * Upazilla-	
	▶ * Union Name(Barguna)-	

Source: Consulting Firm, Tiller

**Figure 3. 2: Questionnaire Design in KoBoCollect**

#### 3.2.2.4 Data Integration, Visualization and Processing

The field data has been collected by the KoBoCollect software on the basis of the questionnaire has developed in the program. After collecting the data, it has been uploaded in the server for downloading. The data can be downloaded in .CSV format that can be visualized in online google map.

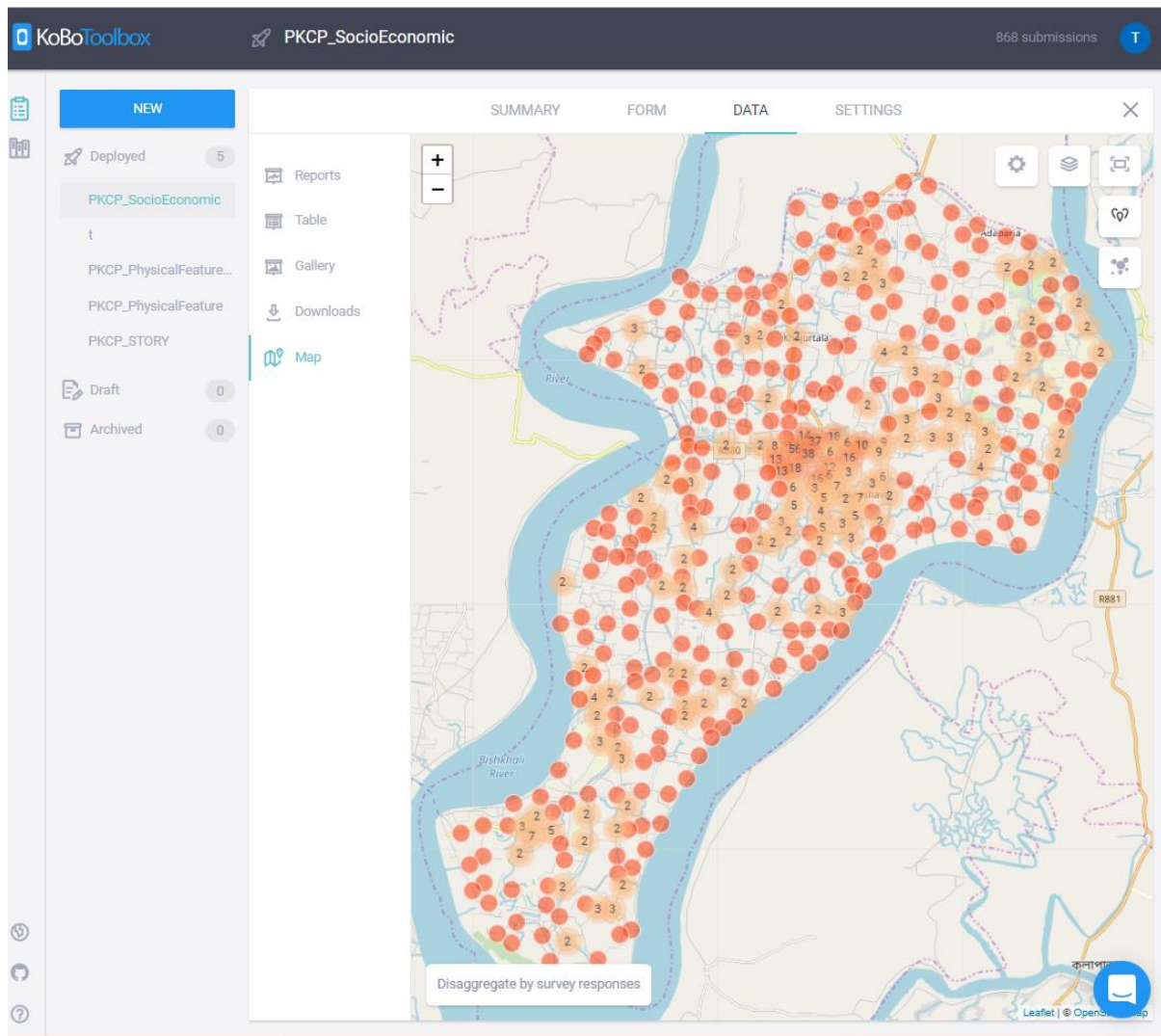
1 - 30 of 868 results.

Validation status	নমুনা নং	স্থান	Upazilla	Union Name(...	রাস্তার নাম
Select...	6027	22.00470641...	Barguna	M. Baliatala	Baliatula r
Select...	6023	22.01381611...	Barguna	M. Baliatala	Baliatuli r
Select...	6027	22.00470641...	Barguna	M. Baliatala	Baliatula r
Select...	6026	22.0045356 9...	Barguna	M. Baliatala	Baliatula r
Select...	3040	22.08141838...	Barguna	Dhalua	wapda Ro
Select...	6025	22.00384613...	Barguna	M. Baliatala	Baliatuli r
Select...	6024	22.00636186...	Barguna	M. Baliatala	Baliatuli r
Select...	3039	22.08462734...	Barguna	Dhalua	It baria Ro
Select...	3039	22.08233338...	Barguna	Dhalua	Noli Road
Select...	3038	22.07510619...	Barguna	Dhalua	Noli Road
Select...	6022	22.01643576...	Barguna	M. Baliatala	Baliatuli r
Select...	6021	22.02952255...	Barguna	M. Baliatala	Baliatuli r
Select...	3037	22.07711343...	Barguna	Dhalua	Noli Road
Select...	6020	22.03135726...	Barguna	M. Baliatala	Baliatuli r
Select...	3036	22.08045916...	Barguna	M. Baliatala	shosatola
Select...	3035	22.08293023...	Barguna	M. Baliatala	soshatola
Select...	3034	22.08379966...	Barguna	M. Baliatala	maita cor
Select...	5036	22.12909856...	Barguna	Dhalua	Uttor huld
Select...	5035	22.12675954...	Barguna	Dhalua	Molla bari
Select...	5034	22.12216226...	Barguna	Dhalua	Kathaltoli
Select...	5033	22.1171650 0...	Barguna	Dhalua	Gora hold

Page 1 of 29 | 30 rows

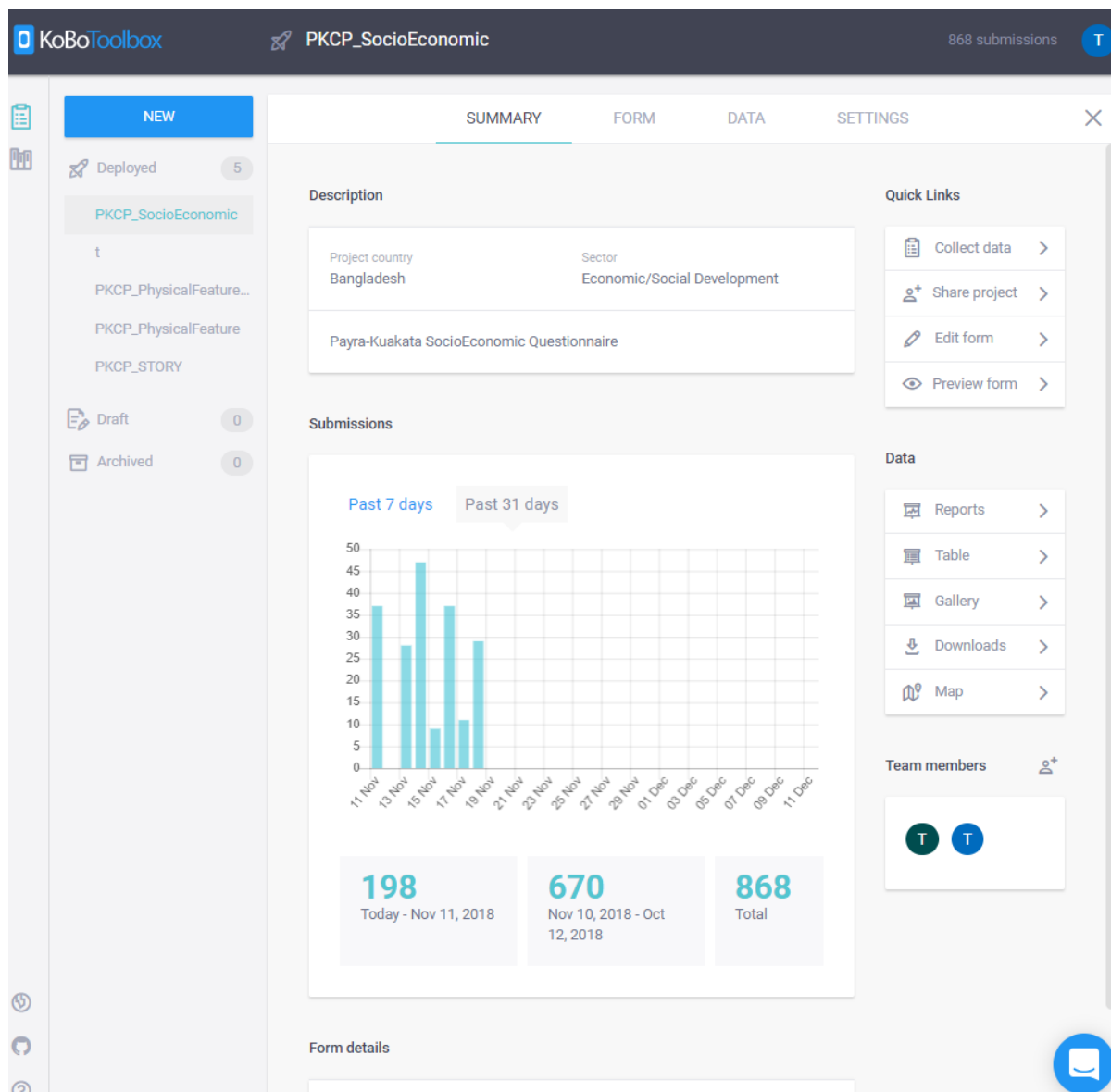
Source: Consulting Firm, Tiller

**Figure 3. 3: Data view in KoBoToolbox website after submission**



Source: Consulting Firm, Tiller

**Figure 3. 4: Snap view of data visualization in an online map**



Source: Consulting Firm, Tiller

**Figure 3. 5: Snap view of data summary**

### 3.2.3 Sample Size Delineation

Household sample survey has been done using the approved Questionnaire based on specified Questionnaire format indicated in TOR. According to the TOR, the sample size was minimum of 200 questionnaires at each municipality and 200 at the rural areas of each Upazila. Later the sample size was fixed by the respective personnel described in the just following section.

### 3.2.4 Sampling Design

The sampling design, in this case, has been taken as a stratified two-stage cluster sampling method. At the first stage, the project area will be divided into Urban and Rural part then further the urban part has been divided into a grid (200mX200m) and Rural

part divided into 17 Union boundaries. In further, the household of urban or Rural area has been selected randomly. Then the required sample size has been distributed among these areas using subset tool of ArcGIS software. It became easier as the whole project areas were digitized before starting the survey. However, using hexagon in ArcGIS was also used for the survey in urban areas. So, there is no chance of biases.

### 3.2.4.1 Sample Size Calculation

For simplicity simple Taro Yamane Elementary Sampling technique has been used. During the sampling, the study was conducted for Barguna Sadar Municipality, Patharghata Municipality, Barguna Sadar Upazila and Patharghata Upazila.

According to Formula of Yamane (1979)

$$n = \frac{N}{1 + N \cdot e^2}$$

Where,

$N$  (BSM) = 7353 (for Barguna Sadar Municipality)

$N$  (PM) = 4457 (for Patharghata Municipality)

$N$ (BSU) = 62086 (for Barguna Sadar Upazila)

$N$ (PU) = 43085 (for Patharghata Upazila)

$n$  = Sample size

$e$  = Error margin (5%) – Confidence level 95%

$$n = \frac{N}{1 + (N) \cdot e^2}$$

$$n (BSM) = 379.36$$

For Barguna Sadar Municipality  $n(BSM) \cong 379$

For Patharghata Municipality

$$n (PM) = 367.06$$

$$n(PM) \cong 367$$

For Barguna Sadar Upazila

$$n (BSU) = 397.44$$

$$n(BSU) \cong 397$$

For Patharghata Upazila

$$n (PU) = 396.32$$

$$n(PU) \cong 396$$

The desired sample size has been taken as 1539.

### **3.2.5 Data Processing and Analysis**

We have checked the quality of data and uploaded the data to the computer at the end of the same day. The data contain the location of the household for a physical feature map and link the household surveyed data with that of the spatial database in Arc GIS. We have linked the attribute data of the socio-economic survey with that of the spatial database in Arc GIS. Then different analysis has been done to collect the information issues like tourism development, housing for a disadvantaged group, land value, informal economic activity, traffic congestion, drainage, water logging, unauthorized encroachment, waste disposal, playground and park, stakeholders' participation for planning and development control, etc.

### **3.2.6 Preparation of Draft Final Report**

After the interim report, the draft final report has been prepared with the economic disparity among the Upazila within districts under study has been figured out by using different socio-economic data analysis technique for drawing the future socio-economic development scenario.

### **3.2.7 Preparation of Final Report**

After approval of the draft final report by the Project Implementation Committee, we will assist the UDD Planning team in public hearing at the respective Upazilas. And we will assist the UDD planning team for necessary modification of the planning package and finalization of the socio-economic report.

## **4. SOCIO-ECONOMIC STATUS OF THE PROJECT AREA**

### **4.1 Introduction**

Socio-economic profile of the project area has been revealed from the Socio-economic Survey of households. The purpose of the socio-economic analysis is to understand the socio-economic dynamics of the project area. The socio-economic component intends to portray the social and economic structures and incorporate information on basic services, growth and socio-economic environments of the population that exists in the locality. Planning for harmonious urban development, whether traffic and transportation, housing, roads, drains, market, open space/parks, health, and education, etc., a basic assessment of the existing socio-economic situation is pre-requisite. As planned development of Barguna Sadar Upazila is very much desirable for its ecological context, therefore socio-economic study is needed to identify policies for possible interventions. On that ground, a sample socio-economic survey was carried out in 776 households (HH) during 2018 within the municipality (379 nos.) and rural (397 nos.) area. The following descriptions and finding are developed based on that survey and their responses.

### **4.2 Social Condition of Barguna Sadar Upazila**

The social condition of the Barguna Sadar Upazila have been analyzed from the socio-economic data collected from the field.

#### **4.2.1 Age-Sex Structure of Barguna Sadar Upazila**

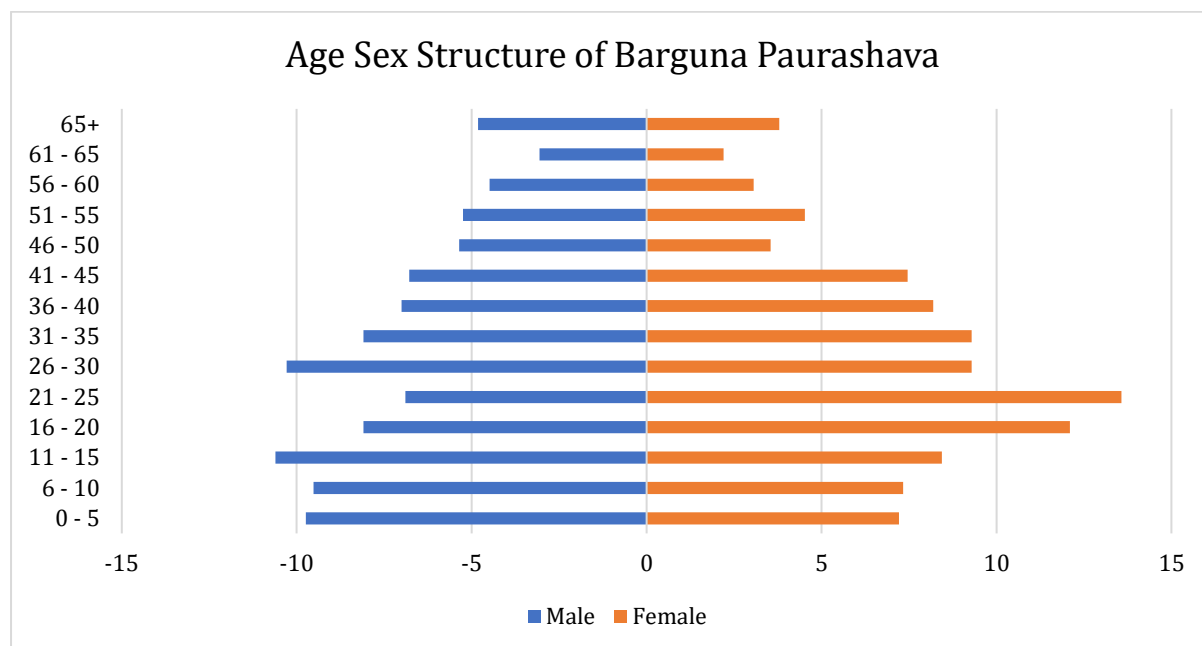
A population pyramid also called an "age-sex pyramid", is a graphical illustration that shows the distribution of various age groups in a population of an area. In addition, age and gender distribution are a key variable that indicates the possibilities of the natural growth of the population of the project area without migration (in or out). Population Pyramids is important for planning because it can also be used to speculate a population's future development.

##### **4.2.1.1 Age-Sex Structure of Barguna Paurashava**

The age-sex pyramid (see figure 4.1) of Barguna paurashava displays the distribution of the population in all age groups and in both sexes. The population pyramid of Barguna paurashava is somewhat like a constrictive and expansive pyramid, with a slight constriction in its younger age groups. There is good life expectancy leading to a higher number of older people. The large base shows a high birth rate. Dependency rate in this area is also high because a large share of the population is under 20 years in both sex group. Working-age population has been found a good number within male and female but the percentage is higher in the case of female than the male population. Highest female population has been found in 21-25 cohort and the highest male population has



been found in the 11-15 cohort. However, the birth rate is higher in Barguna Paurashava than the death rate.

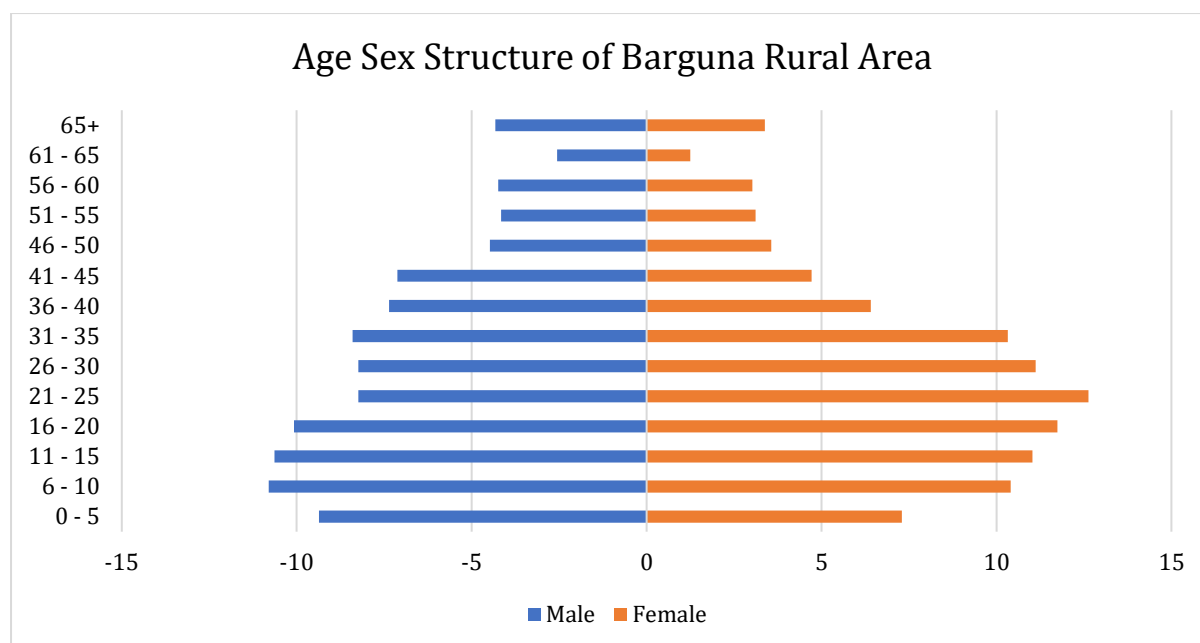


Source: Socio-economic Survey, 2018

**Figure 4. 1 Age-Sex Structure of Barguna Paurashava**

#### 4.2.1.2 Age-Sex Structure of Barguna Rural Area

The age-sex pyramid (see figure 4.2) of Barguna rural displays the distribution of the population in all age groups and in both sexes. The population pyramid of Barguna rural area is somewhat like a constrictive and expansive pyramid, with a slight constriction in its younger age groups. There is good life expectancy leading to a higher number of older people. The large base shows a high birth rate. Dependency rate in this area is also high because a large share of the population is under 20 years in both sex group. Working-age population has been found a good number within male and female but the percentage is higher in the case of female than the male population. Highest female population has been found in 21-25 cohort and the highest male population has been found in 6-10 cohort.



Source: Socio-economic Survey, 2018

**Figure 4. 2 Age-Sex Structure of Barguna Rural Area**

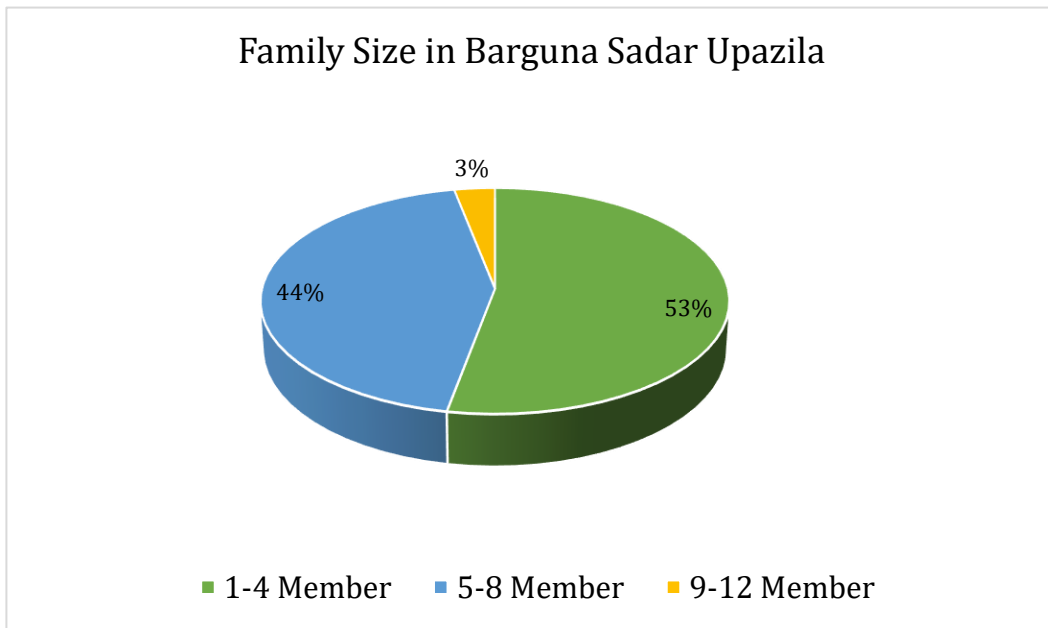
#### 4.2.2 Family Type, Size and Religion

Most of the families in Barguna Upazila are single and Muslim. Muslim families occupied 92.6% and the Hindu families occupy only 7.3% in Barguna Sadar Upazila. So, in this area, the characteristics and cultures of the Muslim single families have witnessed. And 1 to 4 members is found among 53% households and 5 to 8 members found in 44% households. Only 3% is found who have 9 to 12 members considering both single and joint family. The spatial distribution of the religious people of muslim and hindu has been shown in the figure 4.4.

**Table 4. 1 Family type and religion of the people of Barguna Sadar Upazila**

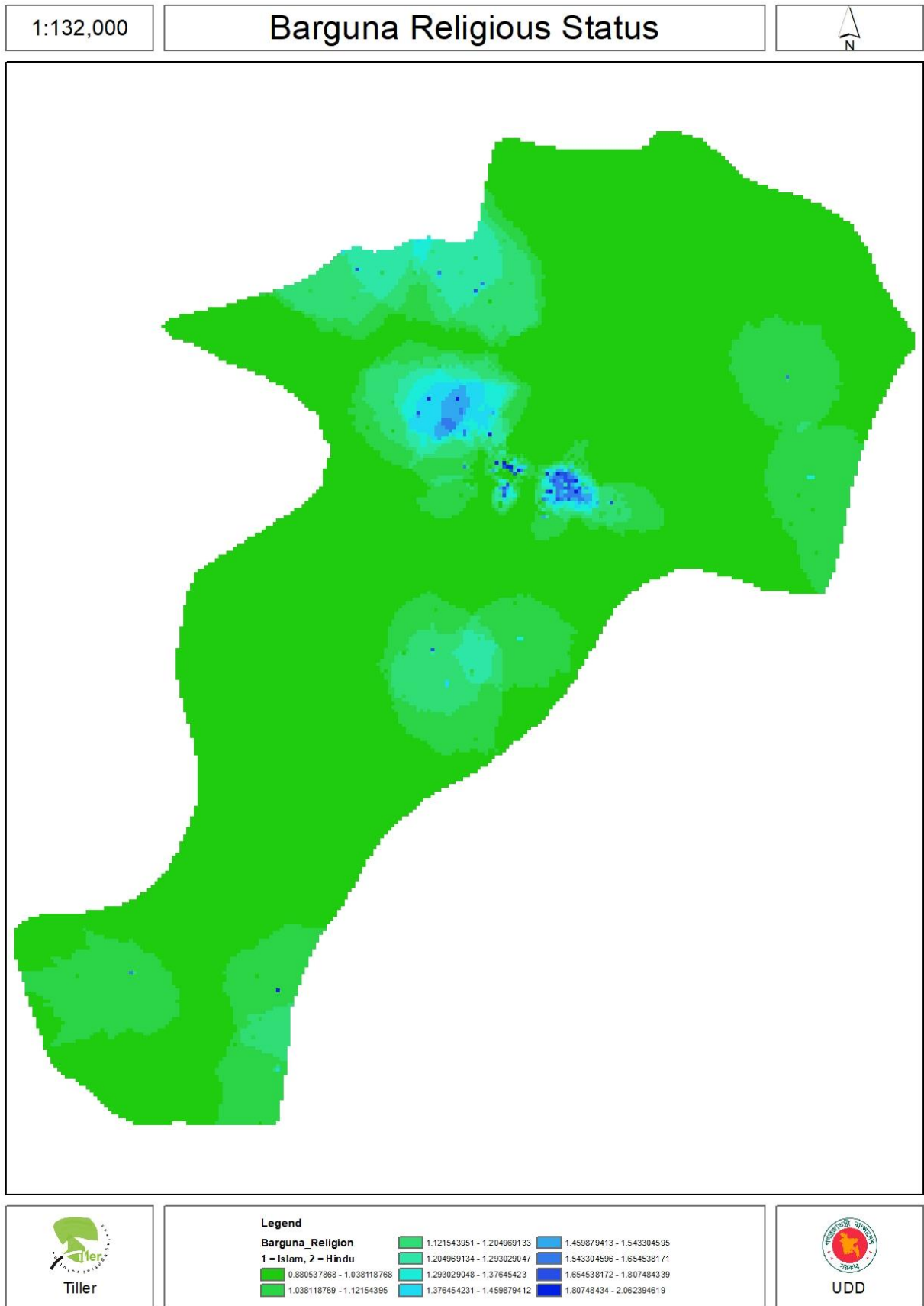
<b>Family Type</b>	Single Family	90.8 %
	Joint Family	9.2 %
<b>Religion</b>	Muslim	92.6 %
	Hindu	7.3 %
	Other	0.1 %

Source: Socio-economic Survey, 2018



Source: Socio-economic Survey, 2018

**Figure 4. 3 Family Size in Barguna Sadar Upazila**



Source: Socio-economic Survey, 2018

**Figure 4. 4: Spatial distribution of religion in Barguna Sadar Upazila**

### 4.2.3 Housing Status

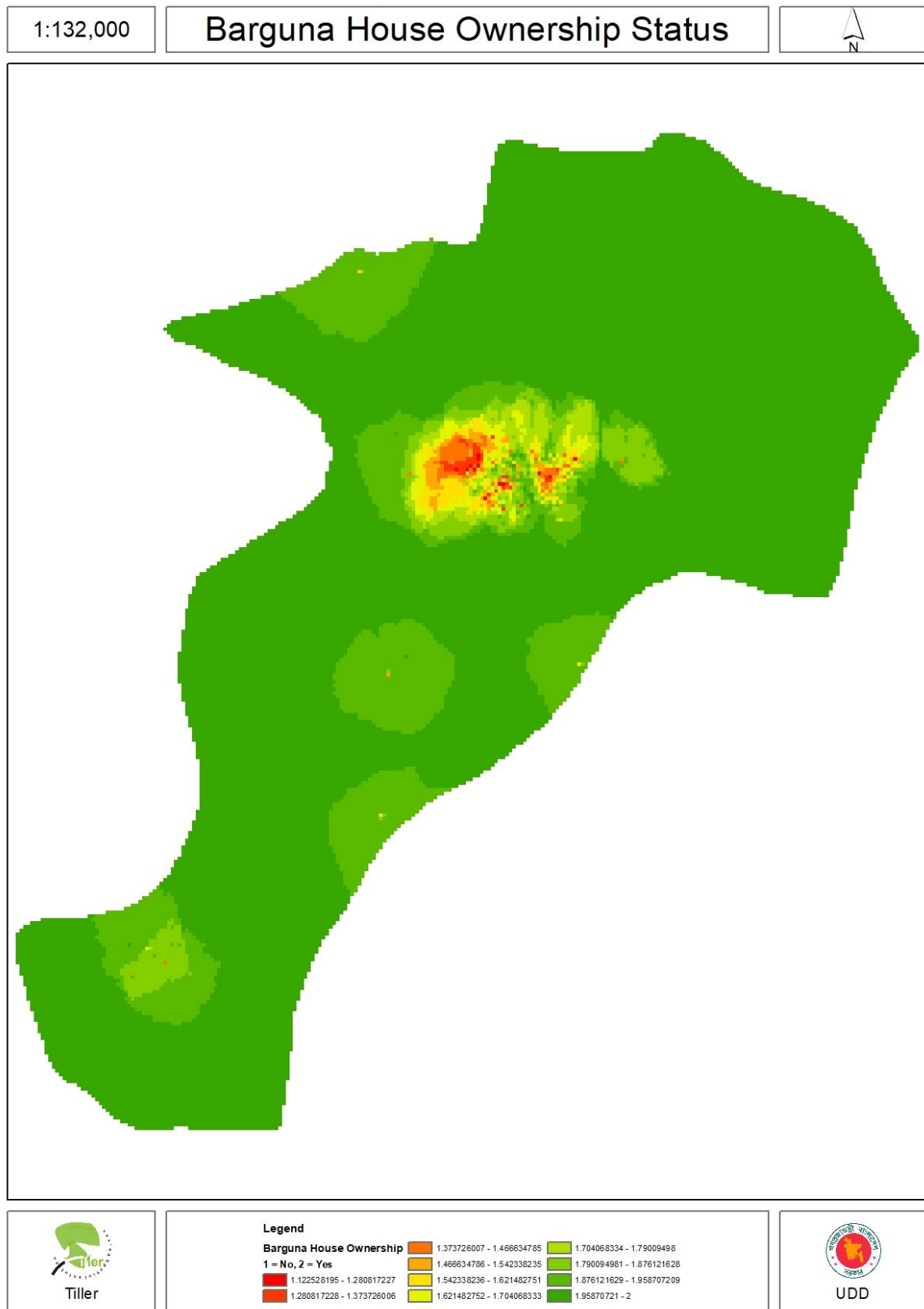
Different features on the housing status of Barguna Sadar Upazila have been explained in the following sub-sections.

#### 4.2.3.1 Housing Ownership

Most of the people in Barguna Sadar Upazila have their own house built on their own land. 93.92% of people live in their own house and only 6.08% of people live in the rented building. Most of them are found mainly in Barguna Sadar paurashava rather than other union. Spatial distribution of house ownership has been shown in figure 4.5.

**Table 4. 2 House ownership status of Barguna Sadar Upazila**

Paurashava/Union	Rented House	Own house	Total house
Ayla Patakata	0.00%	6.24%	6.24%
Badarkhali	0.16%	6.71%	6.86%
Barguna Paurashava	4.52%	<b>17.94%</b>	22.46%
Barguna Union	0.47%	7.02%	7.49%
Burir Char	0.16%	10.92%	11.08%
Dhalua	0.00%	8.74%	8.74%
Gaurichanna	0.16%	4.99%	5.15%
Keorabunia	0.00%	5.77%	5.77%
M. Baliatala	0.31%	12.01%	12.32%
Naltona	0.31%	8.27%	8.58%
Phuljhury	0.00%	5.30%	5.30%
<b>Grand Total</b>	<b>6.08%</b>	<b>93.92%</b>	<b>100.00%</b>

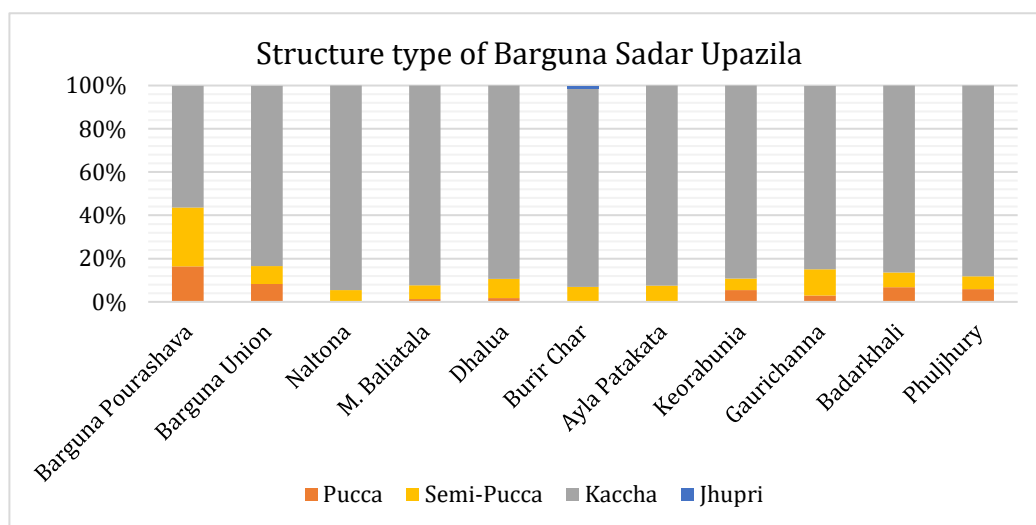


Source: Socio-economic Survey, 2018

**Figure 4. 5: Spatial distribution of house ownership in Barguna Sadar Upazila**

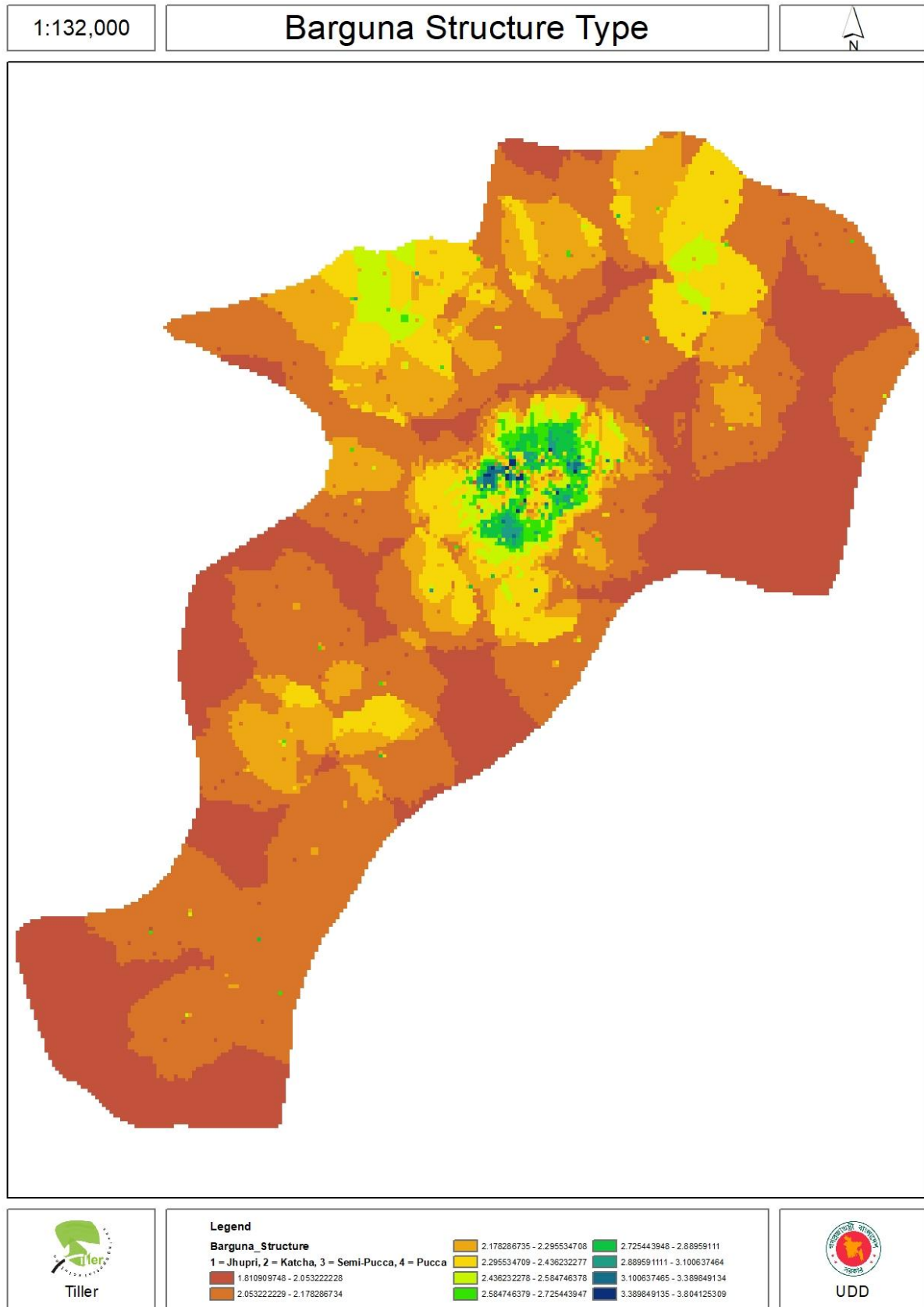
### 4.2.3.2 Type of Structure

In Barguna Sadar Upazila most of the buildings are not well constructed. Many people live in a badly constructed house. The highest percentage of the pucca building are found in Barguna Sadar Paurashava area only 16%. Also, the percentage of semi-pucca building are high in paurashava area. The number of katcha building is also high by more than 50%. In other unions of this Upazila, most of the households are katcha. In many union pucca building is hardly found. It can be concluded that most of the structures of this Upazila are katcha and most of the people live in vulnerable house structure. Spatial distribution of structure type has been shown in figure 4.7.



Source: Socio-economic Survey, 2018

**Figure 4. 6: Structure type in Barguna Sadar Upazila**



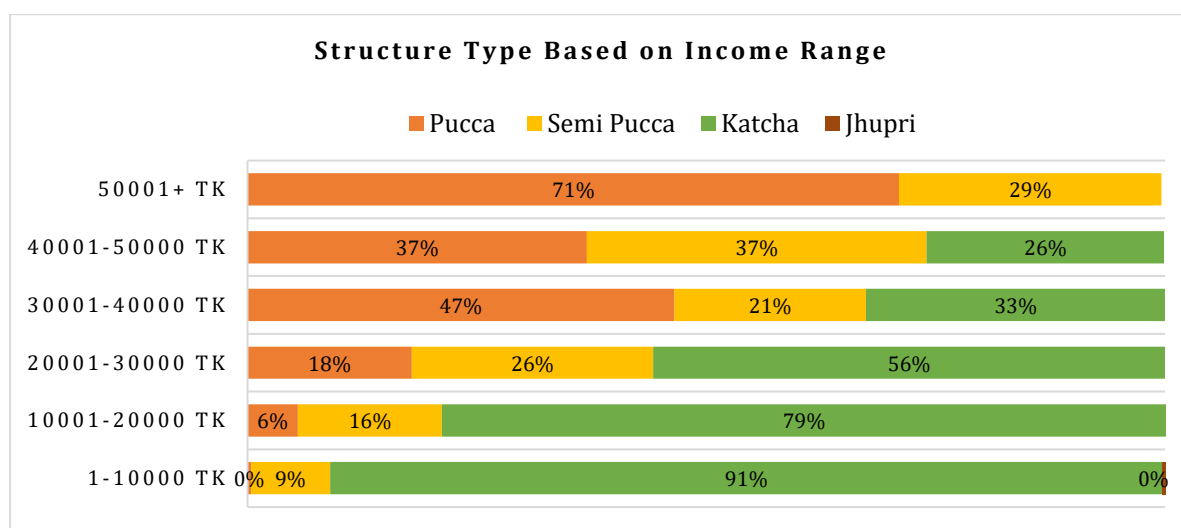
Source: Socio-economic Survey, 2018

**Figure 4. 7: Spatial distribution of structure type in Barguna Sadar Upazila**



### 4.2.3.3 Structure Type based on Income Range

Structure type of the household varies on household income. People having a low income are mostly live in katcha household. This situation changes with the increase in household income. It is one of the uncommon features that some of the households whose income range are within BDT 30000-50000 are found living in the katcha house. The households which have income range more than BDT 50001, 71% are living in pucca structure and 29% are living in semi-pucca structure, for income range BDT 40001-50000, 37% households are living in pucca structure, 37% are living in semi-pucca structure and another 26% are living in katcha structure. In the income range BDT 3001-40000, 47% households are living in pucca structure, 21% in semi-pucca and 33% are living in katcha structure. The income ranges down the above dominantly living in katcha structure.



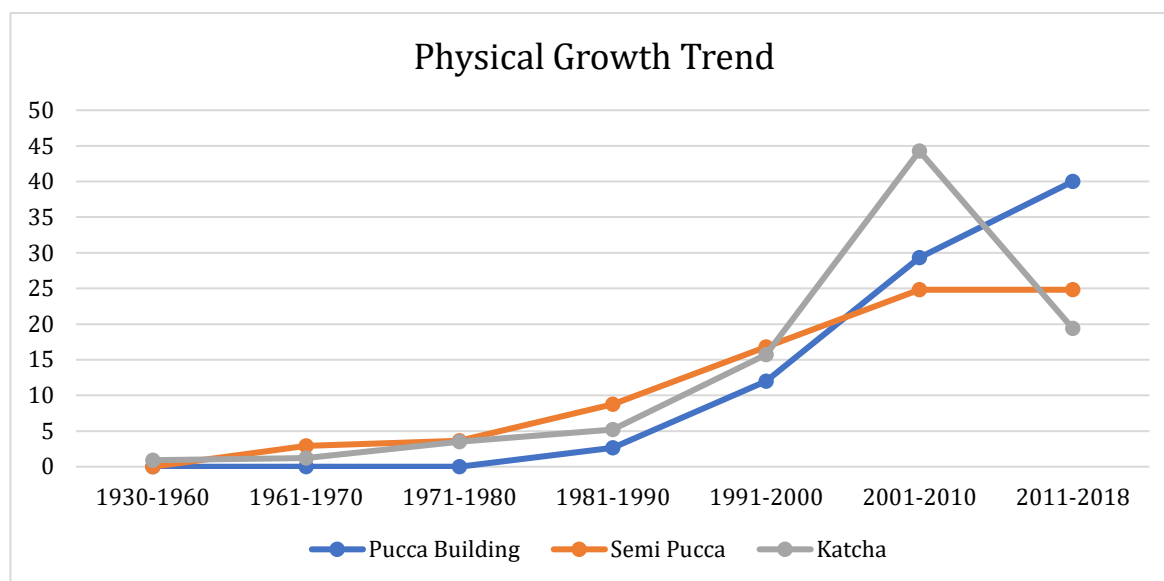
Source: Socio-economic Survey, 2018

**Figure 4. 8: Percentage of structure type base on income range**

### 4.2.3.4 Physical Growth Trend

In recent years, the construction of the different type of building structures increase as the population of the Barguna Sadar Upazila increase. The following graph presents the trend of physical growth according to the building structure type. From 2001 to 2010,

many katcha building were constructed and pucca and semi-pucca buildings were also constructed at a significant level. These all are increasing day by day.



Source: Socio-economic Survey, 2018

**Figure 4. 9: Growth trend of physical structures in Barguna Sadar Upazila**

#### 4.2.3.5 Plinth height of Structure Type

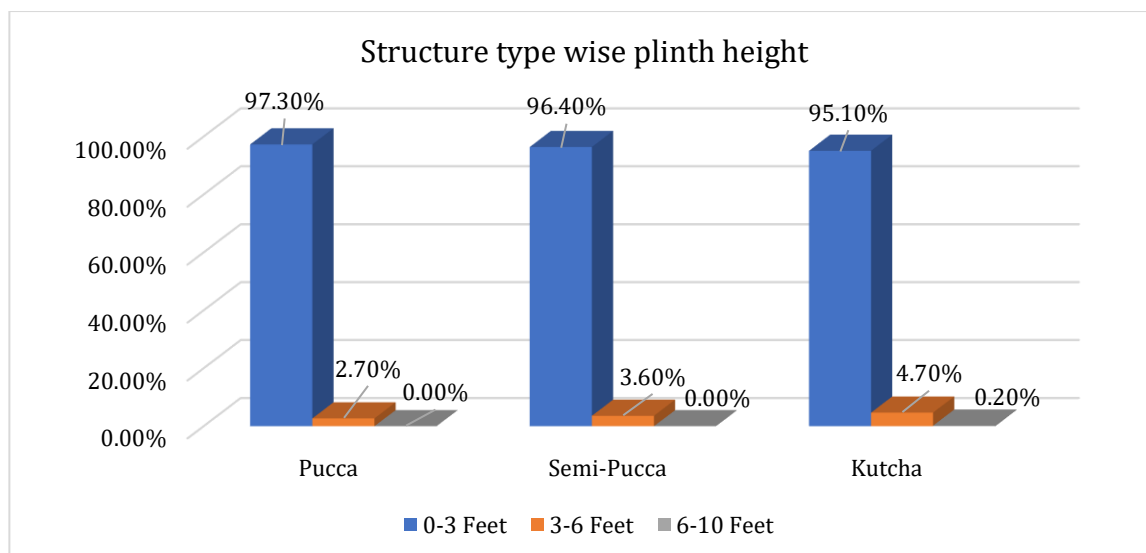
Average plinth height of different houses is almost the same in different structures of this Upazila. In paurashava area, average plinth height of pucca houses is higher than semi-pucca and katcha houses. It can be compared that the plinth height of semi-pucca houses is low than kutch house. In other unions of this Upazila, average plinth height of pucca and semi-pucca houses are quite similar.

**Table 4. 3: Plinth height of different structure type**

Name of Area	Plinth height (ft.)		
	Pucca	Semi-Pucca	Katcha
Urban	2.057	1.86	1.91
Rural	2.33	2.33	2.08

Source: Socio-economic Survey, 2018

Most of the structure's plinth height within 0 to 3 feet in this area. A few building structures have more than 3 ft. But the percentage is very low in those categories. In case of pucca structure 97.30% structure has 0-3 feet plinth height and another 2.70% structure has 3-6 feet plinth height. This scenario is almost same for semi-pucca and katcha structure but for katcha structure only 0.20% structure has 6-10 feet plinth height.



Source: Socio-economic Survey, 2018

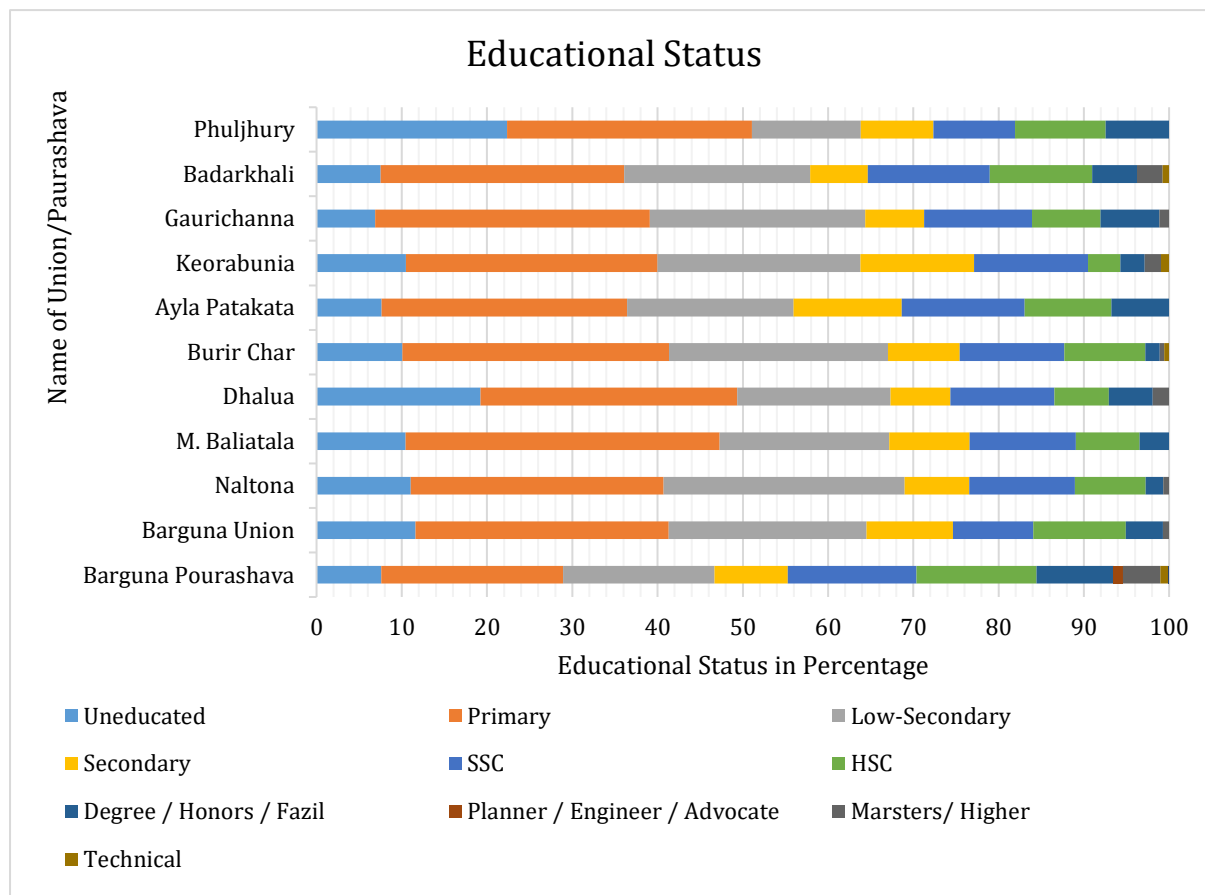
**Figure 4. 10: Structure type wise plinth height in Barguna Sadar Upazila**

#### 4.2.4 Housing for Disadvantaged Group

Housing condition for disadvantage group in Barguna Sadar Upazila is not good and there is lack of initiative for the housing for disadvantaged group. As there is mismanagement regarding housing for disadvantage group, the people of this type are living in temporary house in embankment slope.

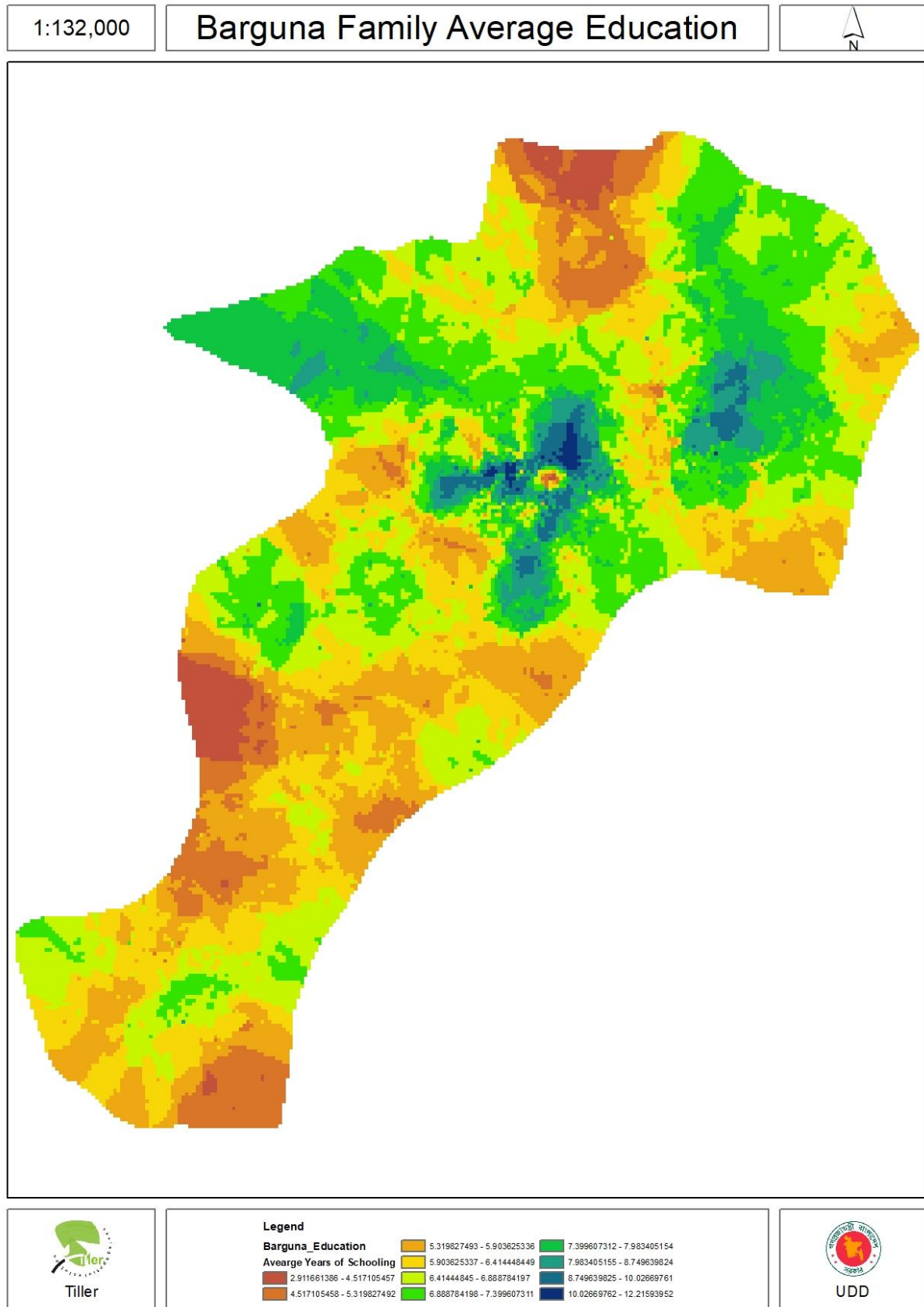
#### 4.2.5 Educational Status

A great number of the people are educated at primary level and low-secondary level and many people are uneducated here. The illitracy rate is small in paurashava area and in Burir Char and Badarkhali, Ayla Patakata union illiteracy rate is below 10%. Except Phuljhury, Ayla Patakata above degree level is found. In paurashava area, all types of educated persons are found and at higher than union level.



Source: Socio-economic Survey, 2018

**Figure 4. 11: Educational status of Barguna Sadar Upazila**

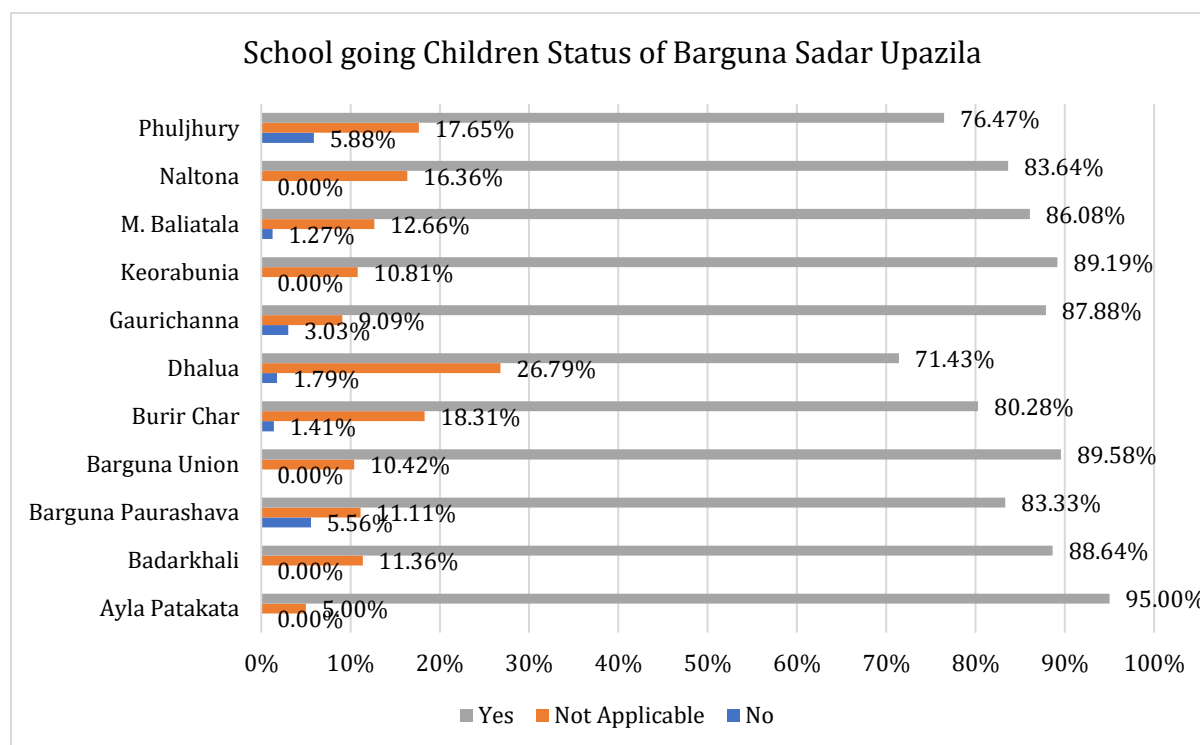


Source: Socio-economic Survey, 2018

**Figure 4. 12: Spatial distribution of educational status in Barguna Sadar Upazila**

#### 4.2.5.1 School Going Children Status

Only 3% of children don't go to a school in Barguna Sadar paurashava whose age is considered as school going children. In Barguna Paurashava and Phuljhury union 5.56% and 5.88% children don't go to school respectively. There are some reasons that are why they can't go to school. Financial problem, labor works, parents' reluctance, etc. where the financial problem is the most vital reason. However, it is one of the satisfactory statuses of the Barguna Sadar Upazila.

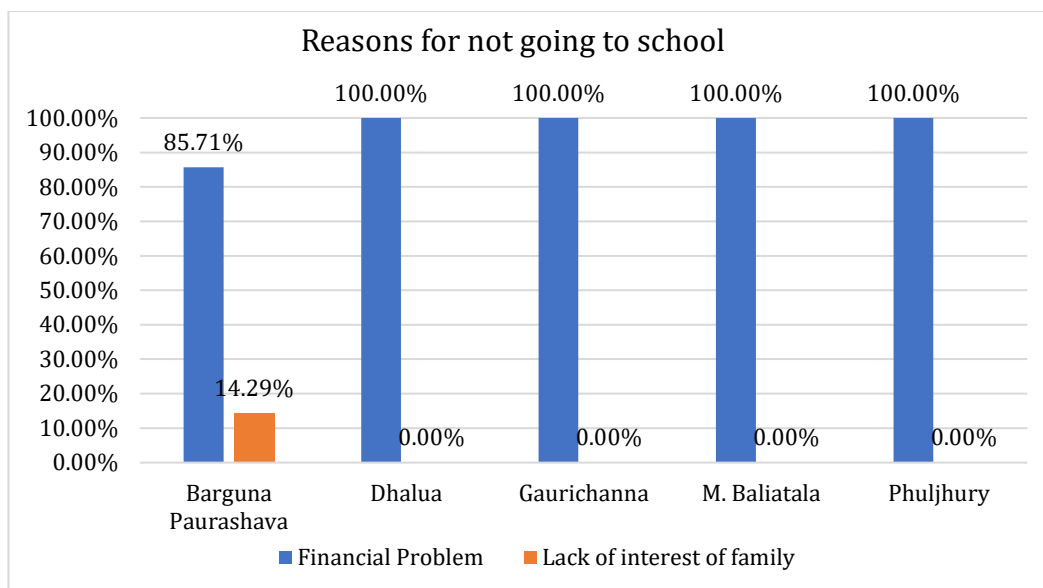


Source: Socio-economic Survey, 2018

**Figure 4. 13: Percentage of school going children in Barguna Sadar Upazila**

#### 4.2.5.2 Reason for not Going to School

The reason for not going to school for education has been analyzed for the children who are not going to school in Barguna Sadar Upazila. In Barguna paurashava area 85.71% children is not going to school for financial problem and another 14.29% children is not going to school for lack of interest of the family. In Dhalua, Gaurichanna, M. Baliatala and Phuljhury union 100% children are not going to school for financial problem.

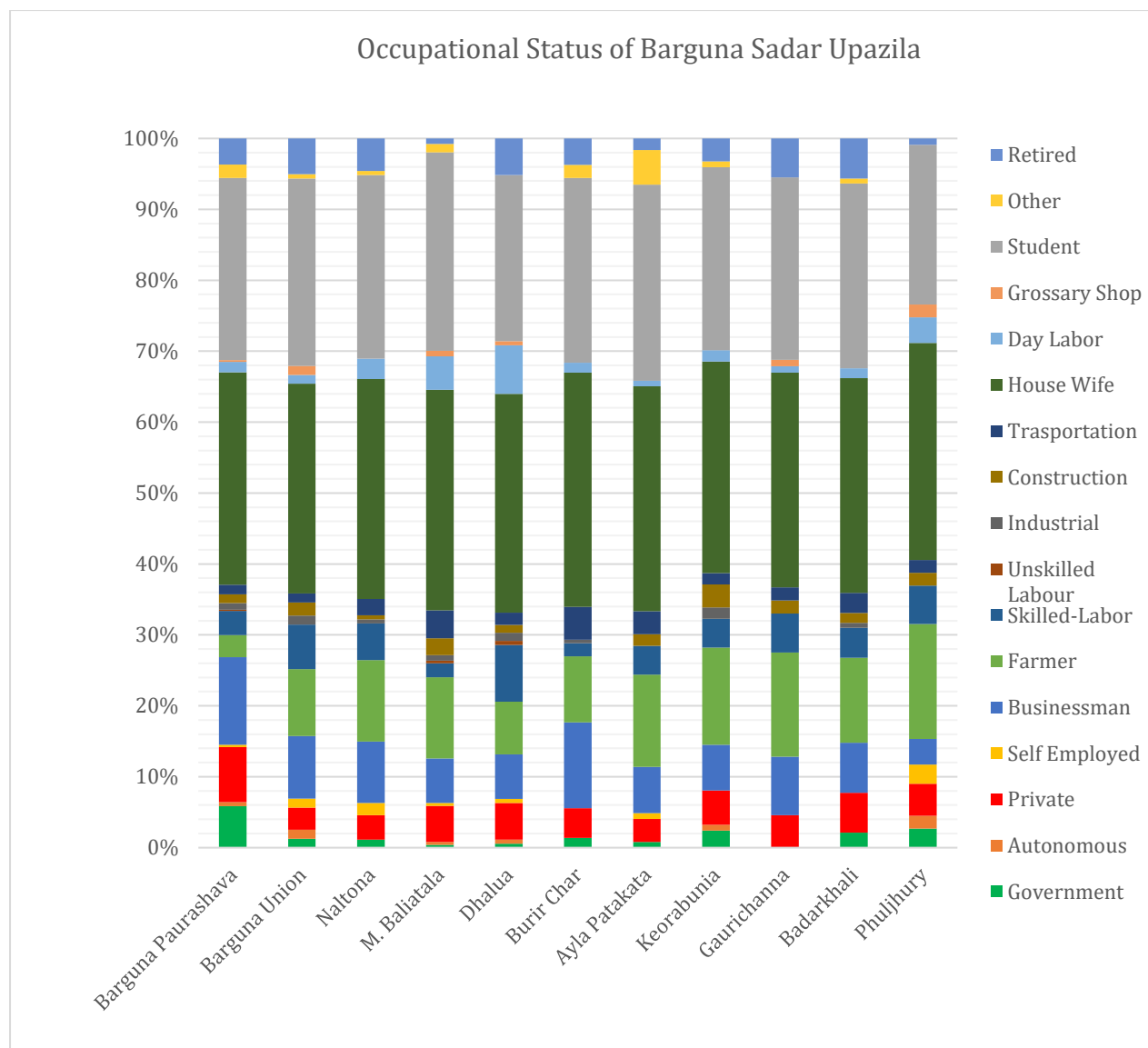


Source: Socio-economic Survey, 2018

**Figure 4. 14: Reason for not going to school in Barguna Sadar Upazila**

#### 4.2.6 Occupational Status

The occupational pattern of the Barguna Sadar Upazila mainly reflects the dominance of rural characteristics. Occupational status of the people Barguna Sadar Upazila varies among different union. In Barguna paurashava many people are engaged in government and private job whereas the percentage is low among other unions. Percentage of people related to agriculture base occupation is high in the different union rather than Barguna paurashava. Many women work in the household rather than working outside. The percentage of the businessman is also high in Barguna paurashava.



Source: Socio-economic Survey, 2018

**Figure 4. 15: Occupational status in Barguna Sadar Upazila**

#### 4.2.7 Migration Information

Migration is a common scenario in all over the world. People need to migrate from one place to another place for different reasons. In Bangladesh, people like to migrate from one place to another place for an economic purpose even people of this country migrate foreign country crossing the boundary of Bangladesh. The migration scenario of Barguna Sadar Upazila has been drawn after the socio-economic survey.

##### 4.2.7.1 Birth Place Status

Birthplace status of the people in Barguna Sadar Upazila is quite similar. Around 97.97 percent people of the area are native people that means in-migration rate is lower in this Upazila. Only a few people have come from outside the Upazila boundary especially



to Barguna Sadar paurashava (8.33% of paurashava population) and most of them are coming due to job purpose.

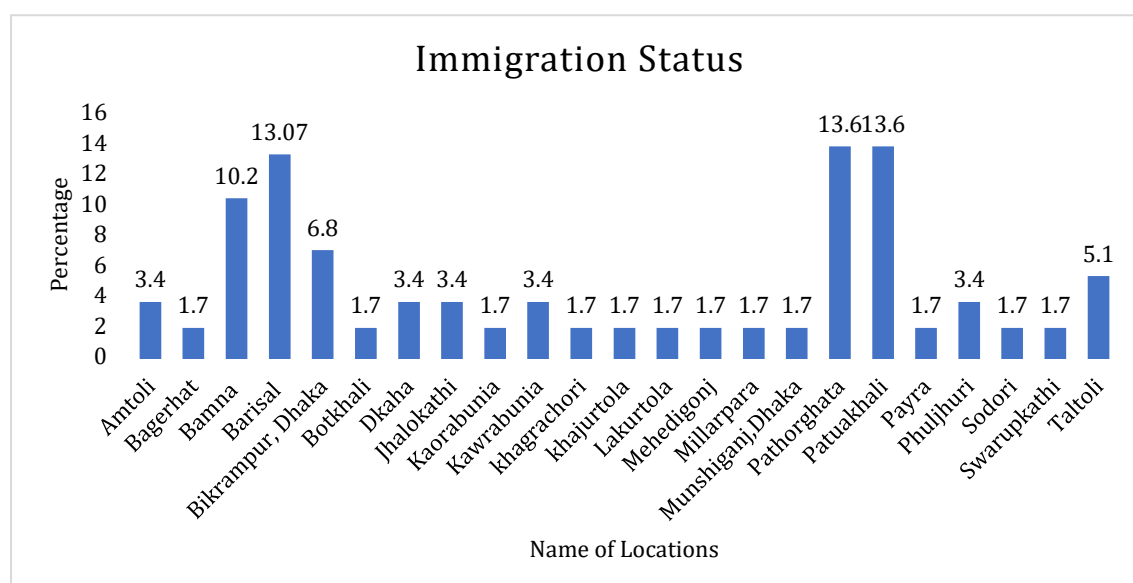
**Table 4. 4: Birth place status in Barguna Sadar Upazila**

Union/Paurashava	Migrated	Birth Place
Ayla Patakata	-	100.00%
Badarkhali	-	100.00%
Barguna Paurashava	8.33%	91.67%
Barguna Union	-	100.00%
Burir Char	1.41%	98.59%
Dhalua	-	100.00%
Gaurichanna	-	100.00%
Keorabunia	-	100.00%
M. Baliatala	-	100.00%
Naltona	-	100.00%
Phuljhury	-	100.00%
<b>Total</b>	<b>2.03%</b>	<b>97.97%</b>

Source: Socio-economic Survey, 2018

#### 4.2.7.2 Immigration Status

The people who migrate to the Barguna Sadar area are from adjacent areas and highly from Patharghata Upazila and Patuakhali District. Patharghata Upazila is just another side of the river as the river is the divider between Barguna Sadar and Patharghata Upazila. Maximum people are coming from the besides areas at different percentages. Barisal, Bikrampur (Dhaka), Munshiganj, Jhalokathi, Bagerhat are the other immigration areas where Barisal and Bikrampur get rank high. So Barishal division is the main immigration areas for Barguna Sadar Upazila.

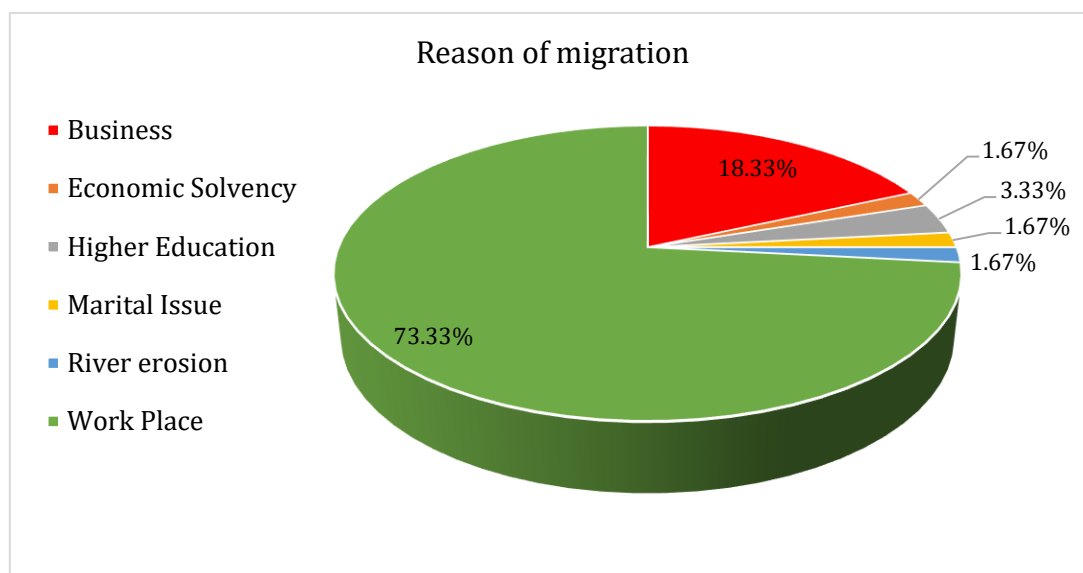


Source: Socio-economic Survey, 2018

**Figure 4. 16: Percentage of the household came outside of the locality**

### 4.2.7.3 Reasons for Migration

Immigration is mostly occurring in Barguna Sadar paurashava, wherein other union of this Upazila this is near to zero. And in Barguna Sadar Upazila, immigration is happening mostly because of job purposes. About 73.33 percent of people have migrated in search of a better job opportunity. People also have come to the area for business purpose (18.33%), higher education (3.33%), marital issue (1.67%), economic solvency (1.67%) and river erosion (1.67%).

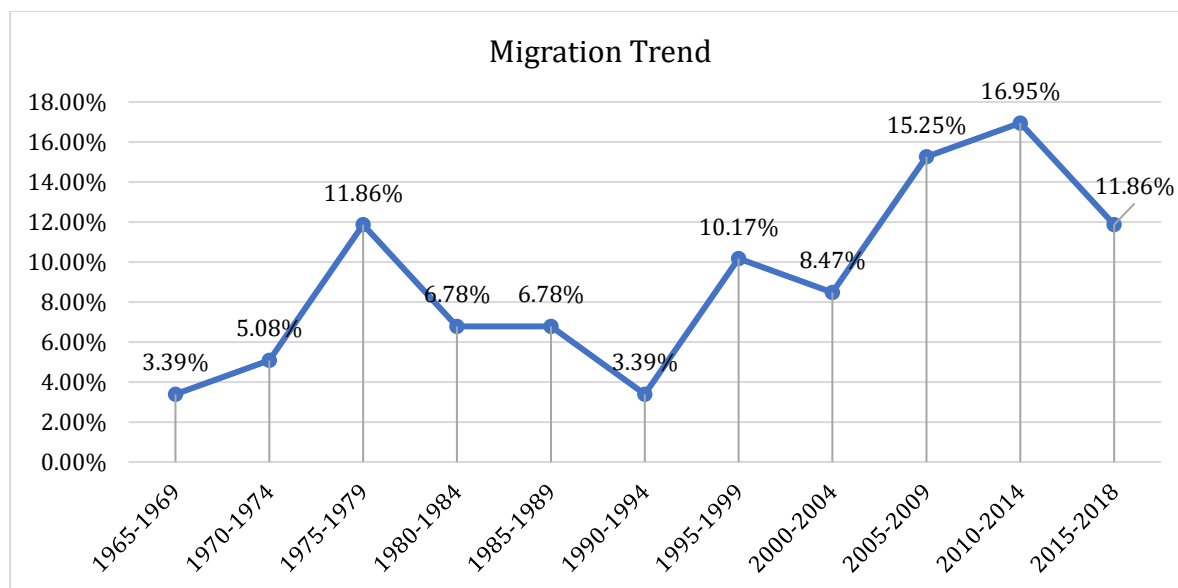


Source: Socio-economic Survey, 2018

**Figure 4. 17: Reasons for migration in Barguna Sadar Upazila**

### 4.2.7.4 Migration Year Trend

In the following figure 4.18, represents the trend of immigration of Barguna Sadar Upazila. Immigration status was highest in 2010 to 2014 because many people have immigrated to this area for better facilities. The immigration trend line shows that, the recent time the immigration status experiences a decreasing trend for Barguna Sadar Upazila.

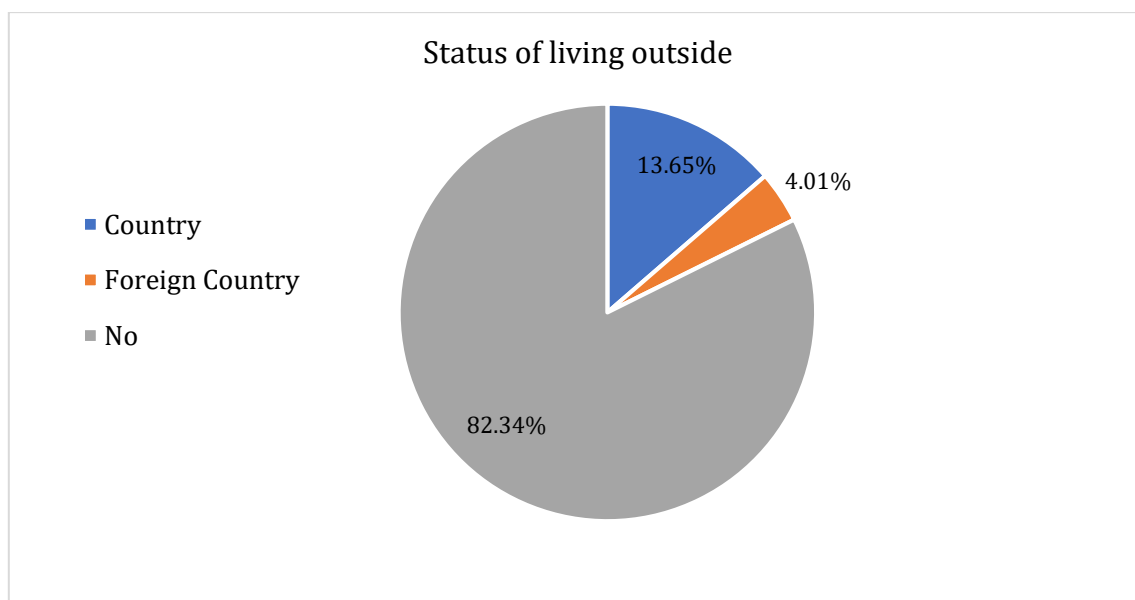


Source: Socio-economic Survey, 2018

**Figure 4. 18: Migration trend over the years in Barguna Sadar Upazila**

#### 4.2.7.5 Family Member Living Outside

In Barguna Sadar Upazila, people are living outside for multiple purposes. The percentage of people living outside of the Upazila is not so high (17.66%). The people who are living outside the Upazila most of them are living in foreign country (13.65%) and another 4.01% are living in other place of Bangladesh. People mostly live in different countries for better job purposes.

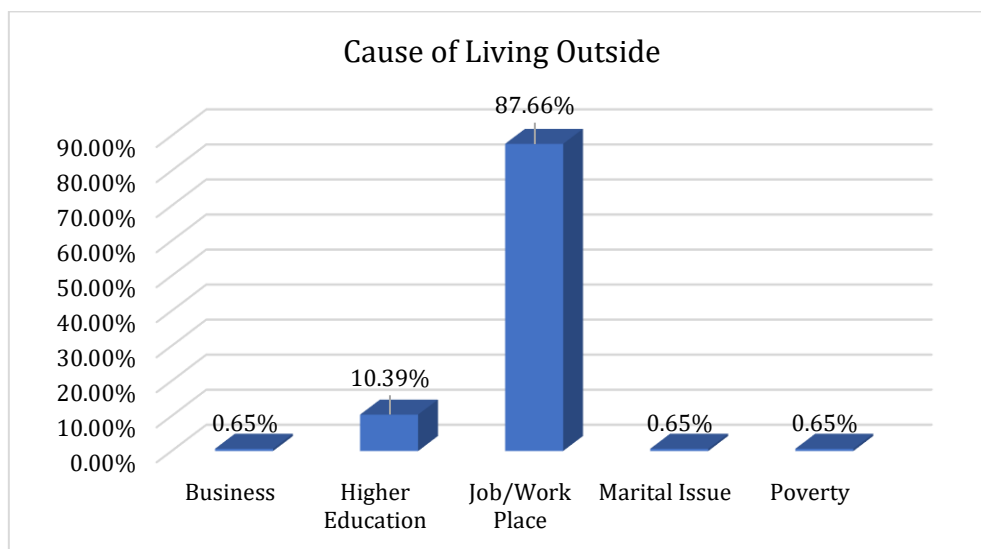


Source: Socio-economic Survey, 2018

**Figure 4. 19: Percentage of the family member living outside**

#### 4.2.7.6 Causes of Living Outside

The main reason for living outside of the people of Barguna Sadar Upazila is for economic progress. Around 87% of people are living outside of the Upazila for a better job opportunity. Also, some people live outside for better educational purpose.

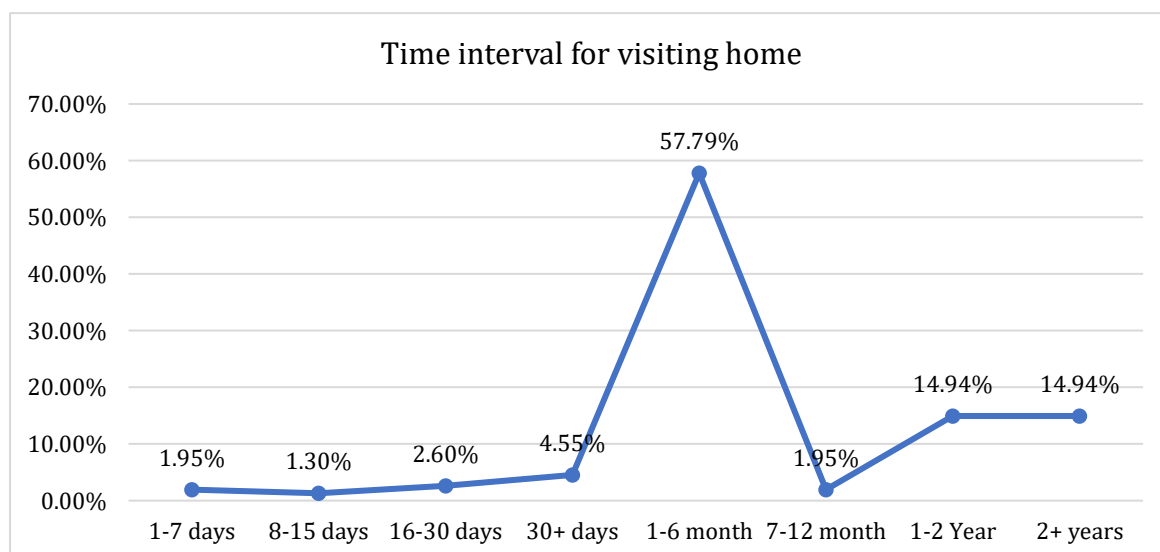


Source: Socio-economic Survey, 2018

**Figure 4. 20: Percentage of the causes of living outside**

#### 4.2.7.7 Time Interval of Visiting Home

In Barguna Sadar Upazila only 17.66% people are living outside. The highest 57.79% are visiting their home at 1 to 6 months' time interval. The 29.88% migrants come to their house 1-2 and more than 2 years interval. Others frequently visit their houses just after 1-7 days or 8-15 days and up to 1 month.



Source: Socio-economic Survey, 2018

**Figure 4. 21: Percentage of the frequency of visiting home**

#### 4.2.8 Ranking of Problems

Ranking of the different problem is done to understand the major problem faced by the people. To get the rank of the problem here we follow a weighted method where the highest weight is given to the 1<sup>st</sup> choice (5) and lowest weight is given to the 5<sup>th</sup> choice (1). Then the sum of each problem is calculated by multiplying the frequency and the weight for each value. From there the highest value is given 1<sup>st</sup> rank.

Here we follow the equation given below,

$$\text{Ranking of Problem} = S_1W_1 + S_2W_2 + S_3W_3 + S_4W_4 + S_5W_5$$

Here,

$S_1$ = Score of a problem (1 <sup>st</sup> choice)	$W_1$ = Weight of 1 <sup>st</sup> choice
$S_2$ = Score of a problem (2 <sup>nd</sup> choice)	$W_2$ = Weight of 2 <sup>nd</sup> choice
$S_3$ = Score of a problem (3 <sup>rd</sup> choice)	$W_3$ = Weight of 3 <sup>rd</sup> choice
$S_4$ = Score of a problem (4 <sup>th</sup> choice)	$W_4$ = Weight of 4 <sup>th</sup> choice
$S_5$ = Score of a problem (5 <sup>th</sup> choice)	$W_5$ = Weight of 5 <sup>th</sup> choice

The ranking of problems in Barguna Sadar paurashava and all other unions are ranked here by following affirmation formula.

**Table 4. 5: Ranking of problems in Barguna paurashava**

Rank	Problem
1	No Roads or Bad
2	Lack of waste disposal space
3	Electricity Problem
4	Water logging
5	Sewerage
6	Congestion
7	Lack of Drinking Water
8	High Market Distance
9	Lack of Vehicle
10	Lack of Good Education Institution
11	Deterioration of Law and Order
12	Salinity

Source: Socio-economic Survey, 2018

This table represents the ranking of the existing problems of the Barguna Sadar paurashava. From this table, it is seen that the local people of Barguna Sadar paurashava mostly face the road problem as well as the problem of the waste disposal site. Inadequate road width and damaged road mostly create a problem in this area. Lack of waste disposal site is also creating an acute problem where they have disposed there waste here and there. The problem of electricity is ranked in 3<sup>rd</sup> position as many local people depend on solar electricity and Kupi/Harican. Because of the waste disposal problem, waterlogging happens in the street and other places which are ranked in 4<sup>th</sup> position. Sewerage system in the paurashava is not so updated which is one of the major reasons of waterlogging. In Barguna Sadar paurashava, congestion, problems of drinking water, high market distance are also very prominent. Lack of vehicle on the road create transportation problem and people need to wait for a long period of time in search of an appropriate vehicle for their destination. There are also many other problems like lack of good education organization, deterioration of law and order and salinity. Though those problems are not acute but exist in the Barguna Sadar Upazila.

**Table 4. 6: Ranking of problems in Barguna rural area**

Rank	Problem
1	No Roads or Bad
2	Electricity Problem
3	Lack of Vehicle
4	Lack of waste disposal space
5	Waterlogging
6	Lack of Drinking Water
7	Sewerage
8	High Market Distance
9	Lack of Good Education Organization
10	Deterioration of Law and Order
11	Salinity
12	Congestion

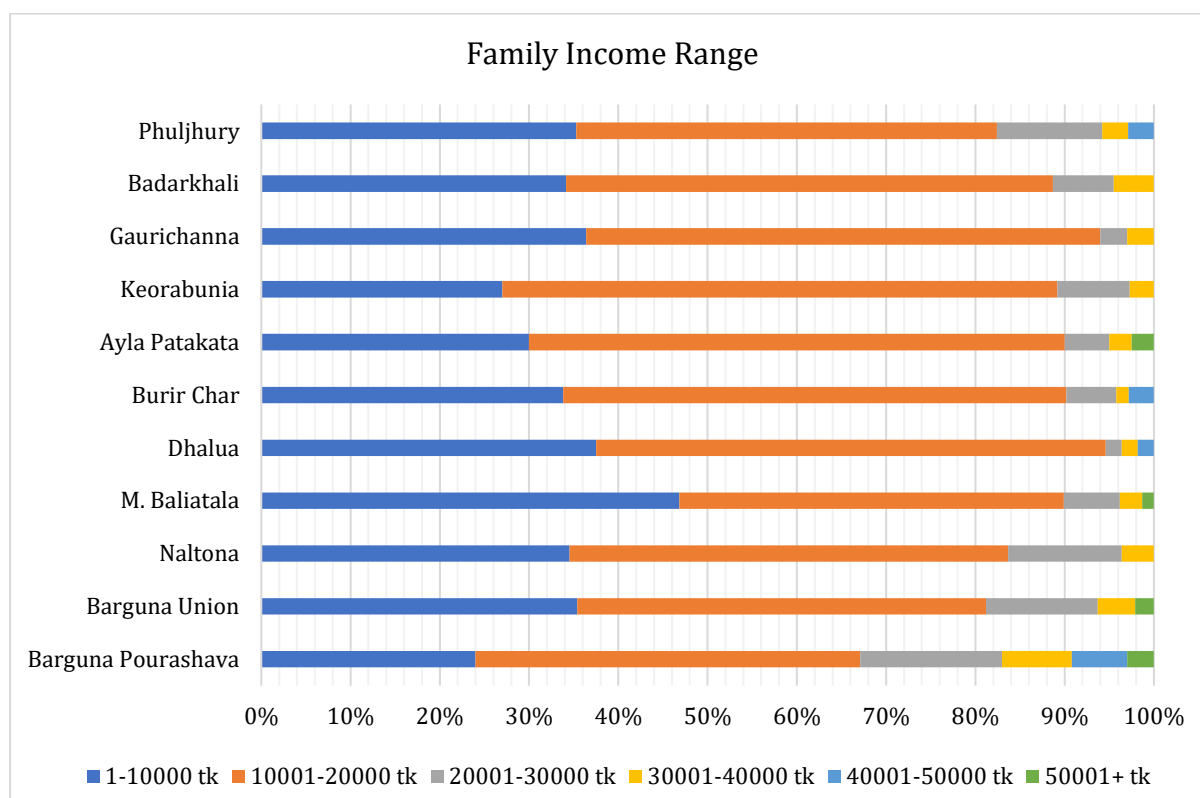
*Source: Socio-economic Survey, 2018*

The scenario outside of the paurashava is different. This table represents the ranking of problems in other areas of the Barguna Upazila. Here, also the problem of road ranks in a 1<sup>st</sup> position which means the problem is also acute outside the paurashava boundary. Electricity problem, lack of vehicle are also major problems in outside the paurashava. There are not so many waste disposal sites on those areas so people dump waste here and there which create waterlogging. The problem of drinking water, sewerage system is also prominent here. Some other problems like high market distance, lack of good education, deterioration of law and order, salinity and congestion are ranked according to the score.

### 4.3 Economic Condition of Barguna Sadar Upazila

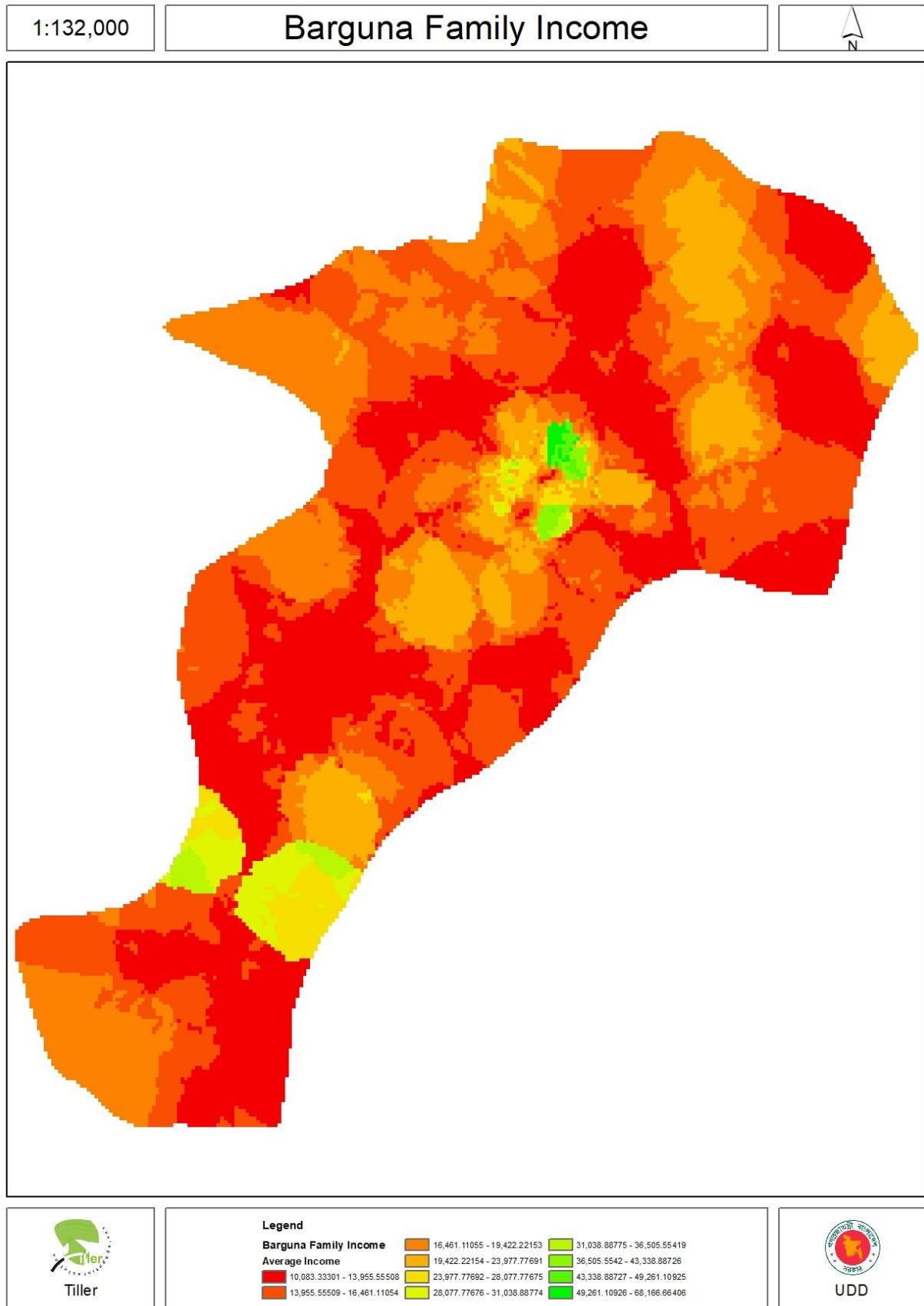
#### 4.3.1 Family Income

In Barguna Upazila, total family income varies among different unions. In paurashava area, 24% household earns BDT 1-10000 and 43.10% household earns BDT 10001-20000. Without this 15.90% household earns BDT 20001-30000, 7.80% household earns BDT 30001-40000, 6.2% household earns BDT 40001-50000 and only 3% household earns more than BDT 50000. In the rural area of Barguna Sadar Upazila, most of the household income fall in between the range BDT 1-10000 and BDT 10001-20000 but the household scenario is not the same for all unions. Among all unions, M. Baliatala union has highest 46.80% household within the income range BDT 1-10000 and Keorabunia union has highest 62.20% household within the income range BDT 10001-20000. About 12% household of Barguna Union, Naltona Union, and Phuljhury Union have income within the range BDT 20001-30000 but in other unions, on an average 5% household, even 1.8% household in Dhalua union have income in the same range. In a rural area, only a few households have income more than BDT 30000.



Source: Socio-economic Survey, 2018

**Figure 4. 22: Percentage of family income range in different Union**



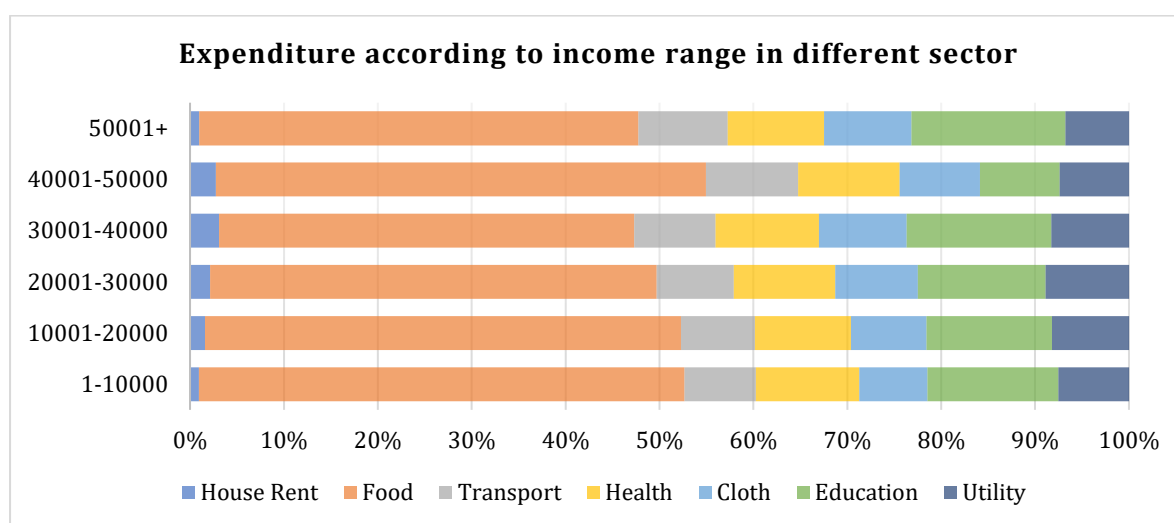
Source: Socio-economic Survey, 2018

**Figure 4. 23: Spatial distribution of family income in Barguna Sadar Upazila**



### 4.3.2 Monthly Family Expenditure

Percentage of expenditure in different categories is calculated. From the calculation, it can be identified that in every category of income range most people expense their income in food which is more than 40 percent (see figure 4.4). People from all range of income spend their income in education, health, utility, transport and house rent at a significant amount. House rent is mainly applicable for Barguna Sadar paurashava. The households who have more income above BDT 40000 to 50000 spend more money in food on average and due to economic solvency, they might have personal vehicles reduce the transport cost and for eating quality food and risk-free works spend in health sector is low. But the households whose income are more than BDT 50000 spend more money in each sector. It should be noted that only a few households are found in this range.

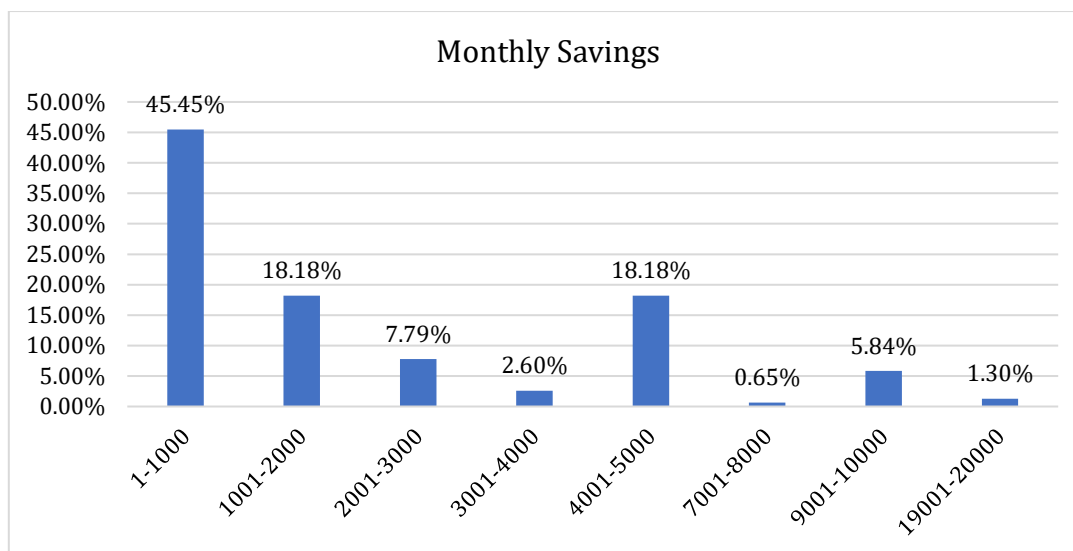


Source: Socio-economic Survey, 2018

**Figure 4. 24: Expenditure according to income range in different sector**

### 4.3.3 Monthly Savings

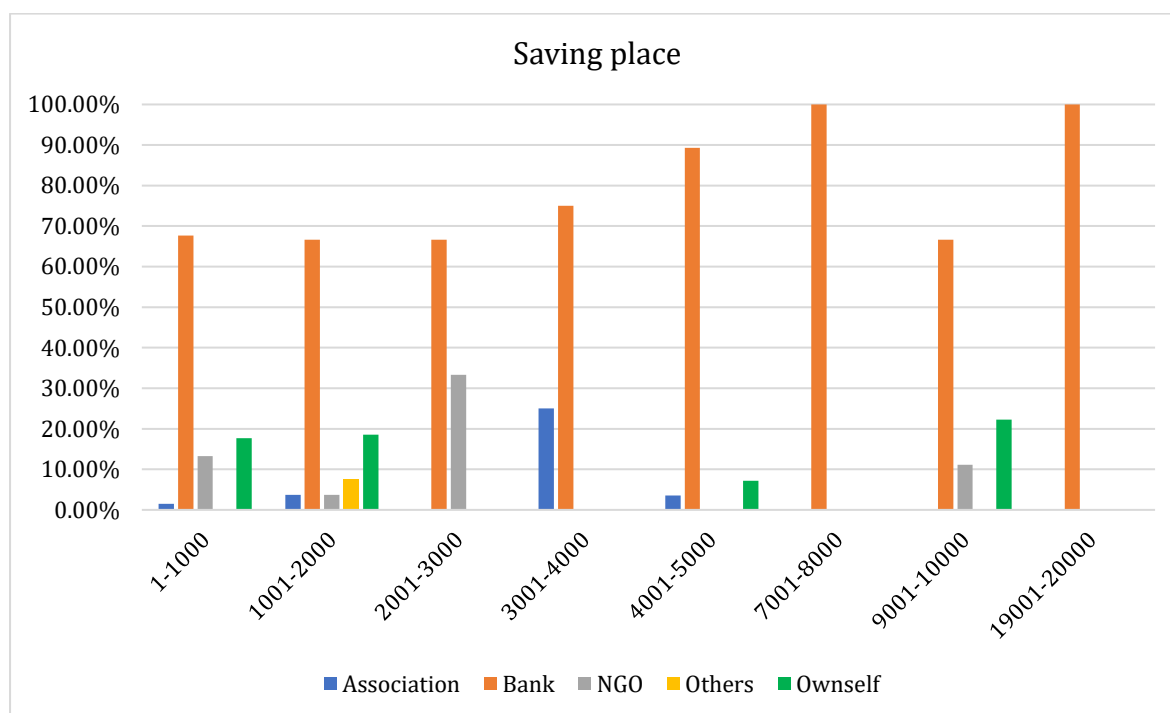
In Barguna Sadar Upazila most of the people can't save money for their future which occupies percentage 81.33. And only 18.67% people can save money for future use. The following figure shows that, the people who can save money of them 45.45% save BDT 1-1000, 18.18% save BDT 1001-2000, 7.79% save BDT 2001-3000, 2.60% save BDT 3001-4000, 18.18% save BDT 4001-5000 and 5.84% save BDT9001-10000.



Source: Socio-economic Survey, 2018

**Figure 4. 25: Monthly savings status in Barguna Sadar Upazila**

The following figure: 4.26 shows that people who save money for the future, of them a significant percentage of people of Barguna Sadar Upazila save their money in bank. Without bank the people also use association, NGO and other place as the saving place of money. Some people keep money to themselves for saving.



Source: Socio-economic Survey, 2018

**Figure 4. 26: Saving place for the people of Barguna Sadar Upazila**

#### 4.3.4 Loan Status

Most of the people (63.34%) of Barguna Sadar Upazila don't take a loan from any source. Only 36.66% of people take a loan from different sources. Within the 36.66% loan taking population the Barguna paurashava contains 6.55% and within 63.3% people who don't take loan the Barguna paurashava contains 15.91%. That means the highest loan takers are found in the Barguna paurashava also the lowest loan takers are found in the Barguna paurashava.

**Table 4. 7: Loan status in Barguna Sadar Upazila**

Paurashava/Union	Loan Status		Total
	Yes	No	
Ayla Patakata	1.72%	4.52%	6.24%
Badarkhali	3.43%	3.43%	6.86%
Barguna Paurashava	6.55%	15.91%	22.46%
Barguna Union	3.12%	4.37%	7.49%
Burir Char	4.06%	7.02%	11.08%
Dhalua	4.06%	4.68%	8.74%
Gaurichanna	1.87%	3.28%	5.15%
Keorabunia	2.18%	3.59%	5.77%
M. Baliatala	4.37%	7.96%	12.32%
Naltona	2.18%	6.40%	8.58%
Phuljhury	3.12%	2.18%	5.30%
<b>Grand Total</b>	<b>36.66%</b>	<b>63.34%</b>	<b>100.00%</b>

Source: Socio-economic Survey, 2018

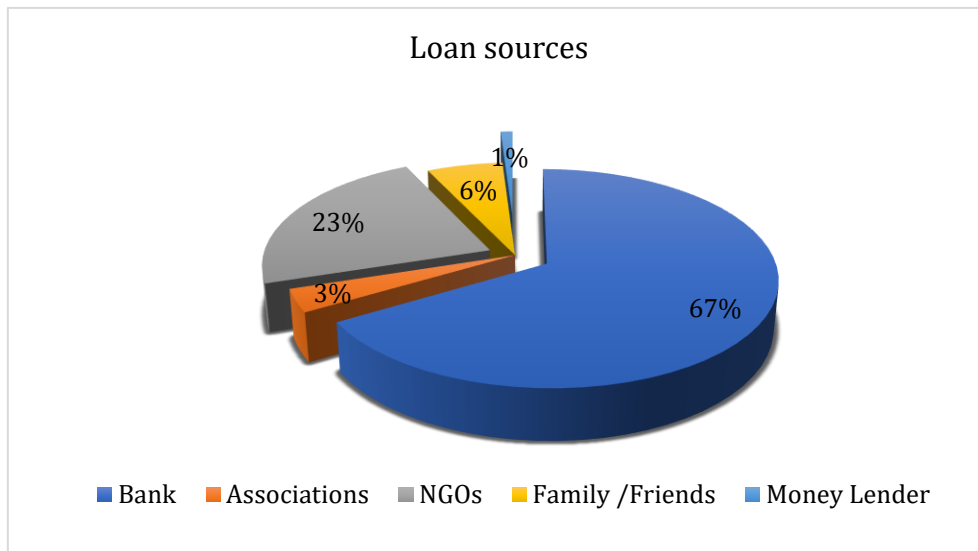
**Table 4. 8: Paurashava and union wise loan status in Barguna Sadar Upazila**

Paurashava/Union	Loan Status		Total
	Yes	No	
Ayla Patakata	27.50%	72.50%	100.0%
Badarkhali	50.00%	50.00%	100.0%
Barguna Paurashava	29.17%	70.83%	100.0%
Barguna Union	41.67%	58.33%	100.0%
Burir Char	36.62%	63.38%	100.0%
Dhalua	46.43%	53.57%	100.0%
Gaurichanna	36.36%	63.64%	100.0%
Keorabunia	37.84%	62.16%	100.0%
M. Baliatala	35.44%	64.56%	100.0%
Naltona	25.45%	74.55%	100.0%
Phuljhury	58.82%	41.18%	100.0%
<b>Grand Total</b>	<b>36.66%</b>	<b>63.34%</b>	<b>100.00%</b>

Source: Socio-economic Survey, 2018

#### 4.3.4.1 Loan Sources

People of Barguna Sadar Upazila mostly take a loan from Bank and NGOs. More than half (67%) of them take a loan from the bank and the percentage of taking a loan from NGOs is also high (23%). People also take a small loan from friends/family as well as money lender 6% and 1% respectively.

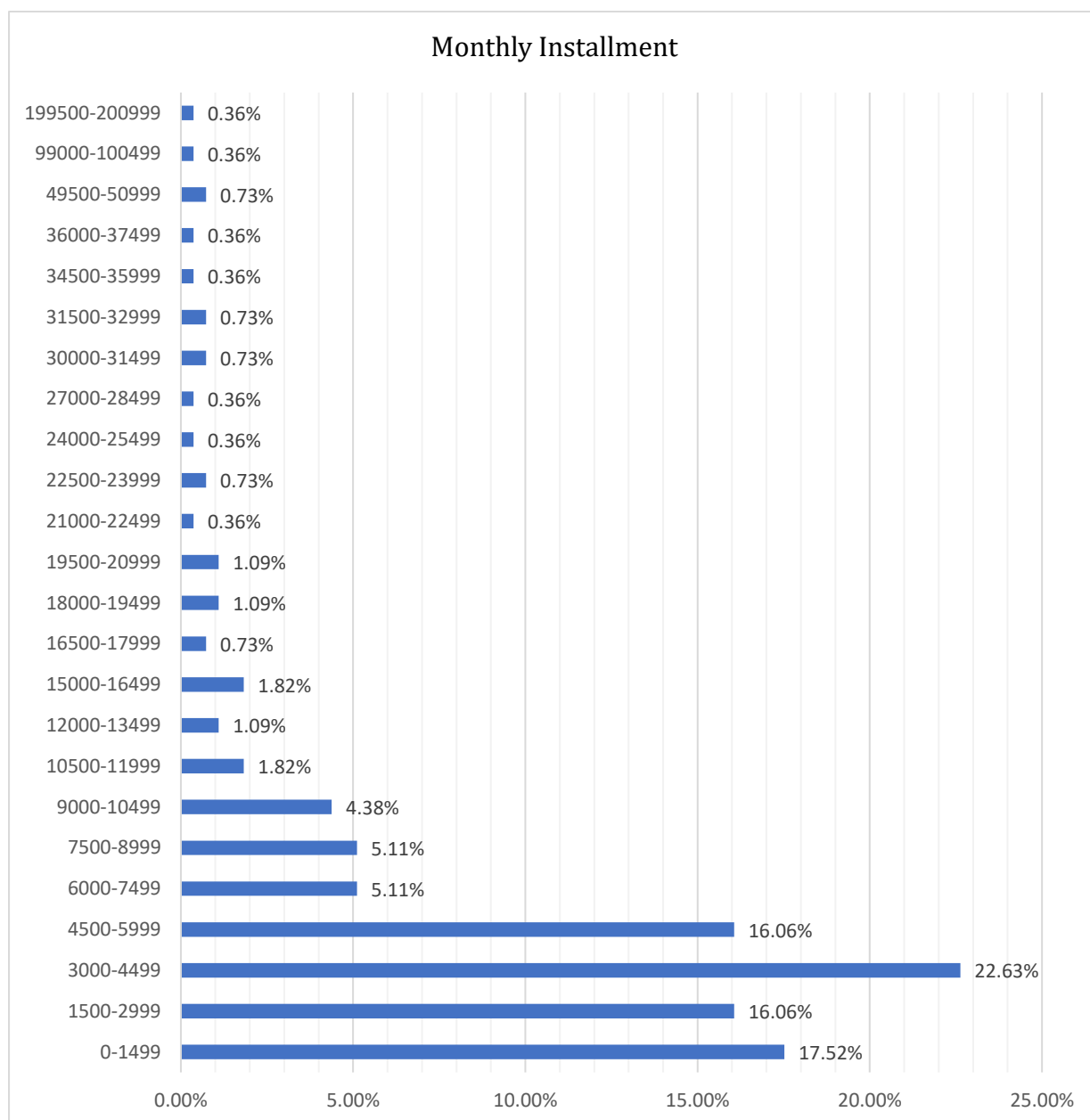


Source: Socio-economic Survey, 2018

**Figure 4. 27: Different loan source for the people of Barguna Sadar Upazila**

### 4.3.4.2 Monthly Installment

People who take a loan from banks, NGOs and other associations have to pay monthly installment. Installment amount varies depending on the amount of loan taken from different loan sources. Most of the people (86.86%) of Barguna Sadar Upazila need to pay BDT 0-10499. Within this range, 17.52% need to pay BDT 0-1499, 16.06% need to pay BDT 1500-2999, 22.63% need to pay BDT 3000-4499 and 16.06% need to pay BDT 4500-5999. Without this other people need to pay upto BDT 200999.

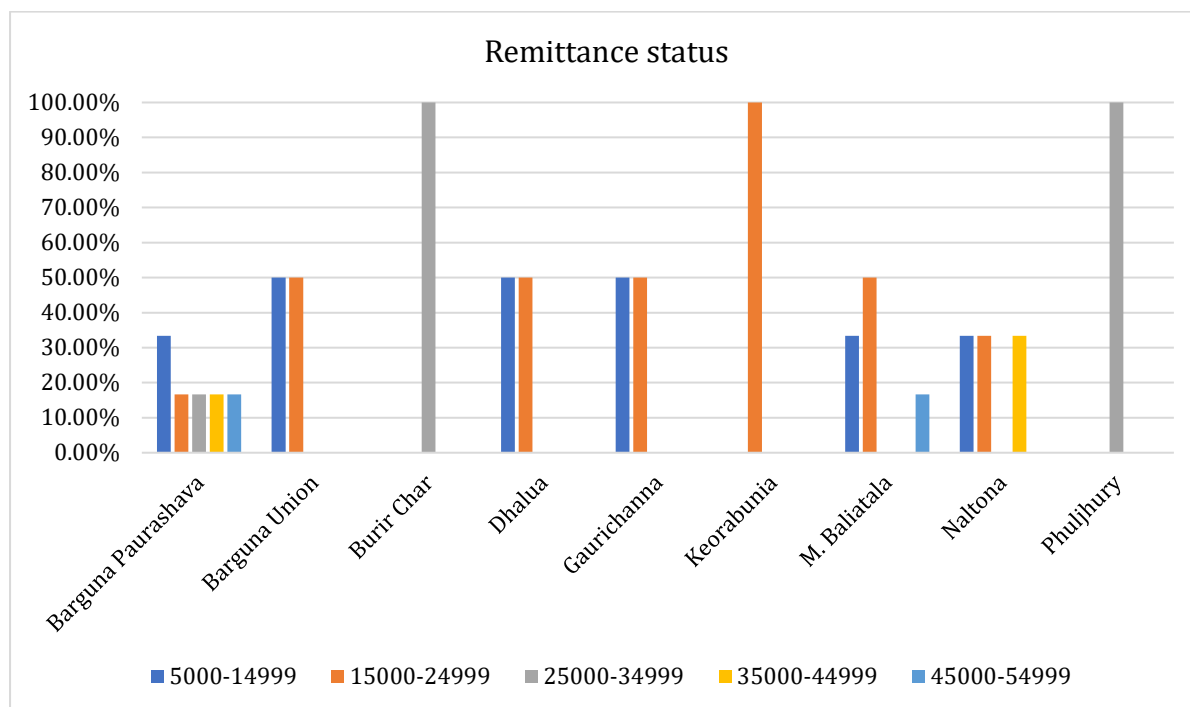


Source: Socio-economic Survey, 2018

**Figure 4. 28: Installment amount status for the people of Barguna Sadar Upazila**

### 4.3.5 Remittance Status

By definition, a remittance is a transfer of money by a foreign worker to an individual in their home country. The remittance status of Barguna Sadar Upazila has been figured out in the following Figure 4.29 which indicates the evidence of remittance in Barguna Sadar Upazila. The maximum remittance of Barguna Upazila fall in the range BDT 15000-24999 but in Burir Char and Phuljhury union entire remittance fall in the range 25000-34999.



Source: Socio-economic Survey, 2018

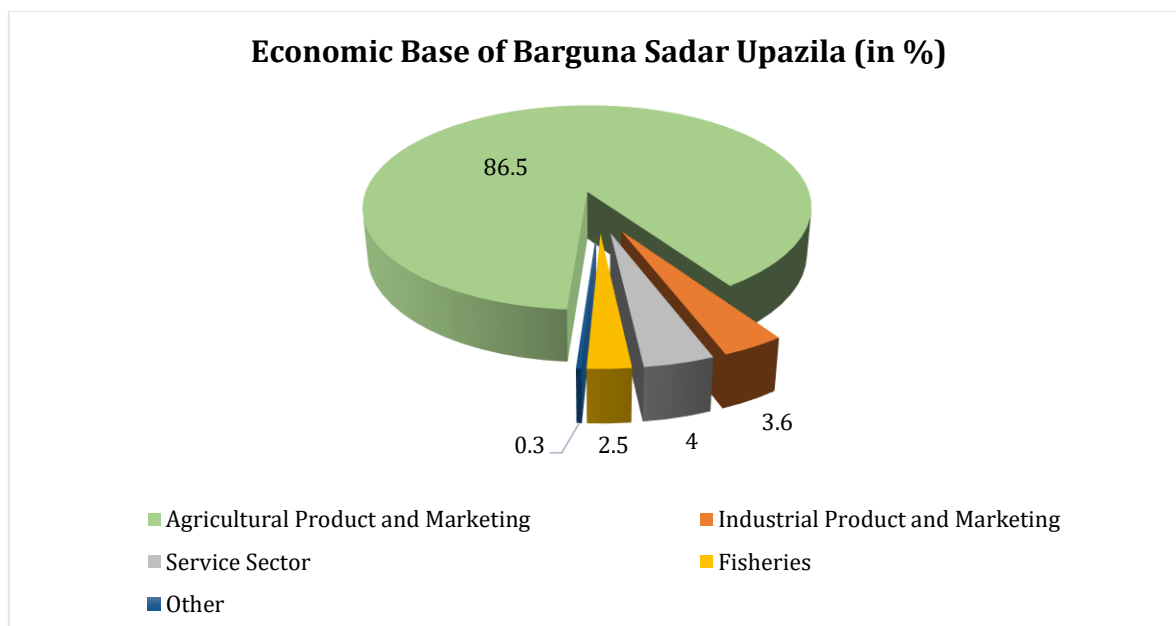
**Figure 4. 29: Remittance status in Barguna Sadar Upazila**

### 4.3.6 Land Value

The land value of Barguna Sadar Upazila is not collected in the socio-economic survey. The land value related information will be collected through other related survey.

### 4.3.7 Economic Base of Barguna Sadar Upazila

It is surveyed that most of the people of this area highly dependent on agriculture. About 86.5 percent of people depend on agricultural product and marketing. Most of the people work in the agricultural field. As there is no major industrial hub in this area the dependency on industrial product and marketing is very low (3.6%). Some people also depend on the service sector and their percentage is 4%. There are also many people think that the economic base of their location is dependent on fisheries and some other profession. The pattern of the economic base of the Barguna Upazila economic base is quite similar where most of the economy depends on agricultural product and marketing.



Source: Socio-economic Survey, 2018

**Figure 4. 30: Economic base of Barguna Sadar Upazila**

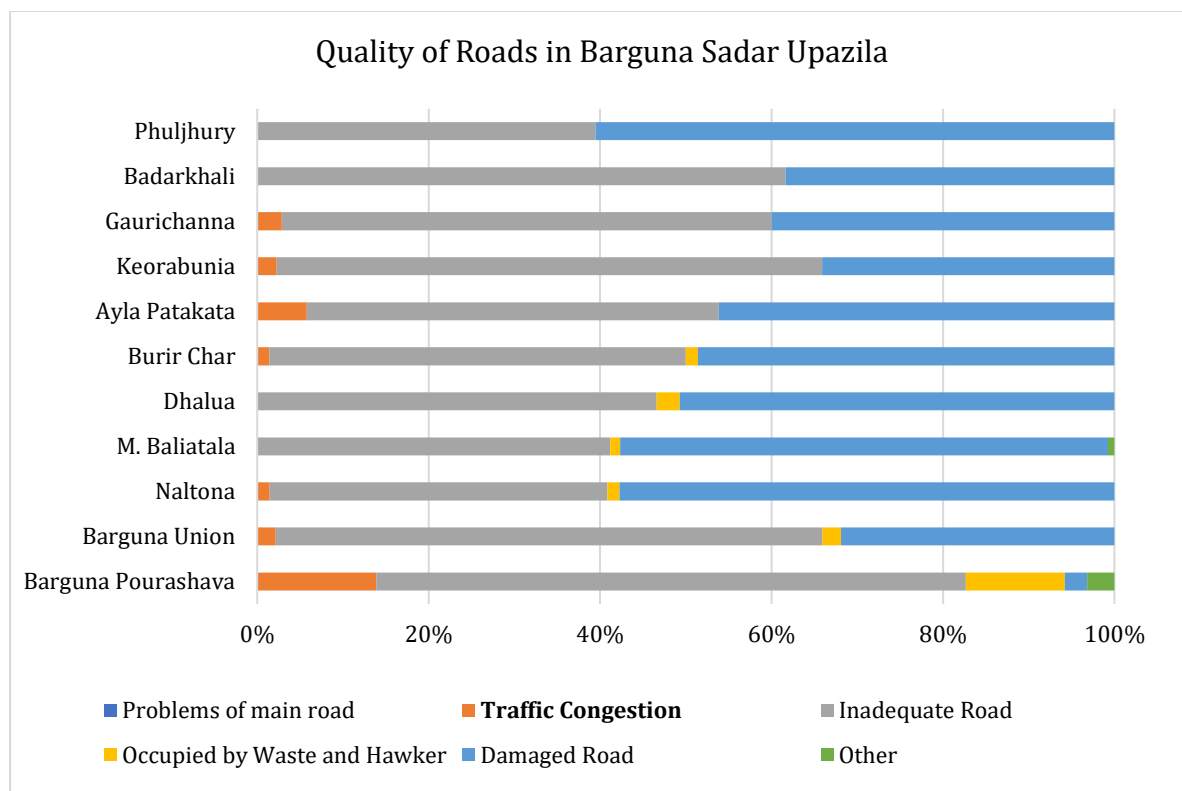
#### 4.4 Condition of Social Infrastructure and Services of Barguna Sadar Upazila

##### 4.4.1 Tourism Development

Padma Parjatan Kendra of Barguna Sadar Upazila has great potential for tourism development as there are abundant resources to attract tourists. This area attracting the local people and the adjacent resident outside this Upazila. People are visiting this area for their entertainment.

##### 4.4.2 Quality of Main Road: Traffic Congestion

Average 84.2% of respondents of Barguna Sadar Paurashava mentioned the main problem as the inadequacy of the existing road. There is a little bit of a problem with traffic congestion. The problem of traffic congestion has been found in paurashava area. In Paurashava area 17% people mention traffic congestion as problem of road. But their perceptions about traffic jam is not similar to the perceptions of the people of Dhaka city. There are very few damaged roads (14.1%) in Barguna Sadar Paurashava. Some spaces of the road are being occupied by waste and hawker (14.1%) here. Main roads in other union are mainly inadequate and damaged. Ayla Patakata, Gaurichanna, Keorabunia, Barguna union, Naltona, and Burir Char have also to be witnessed traffic congestion problem at a minimum level.

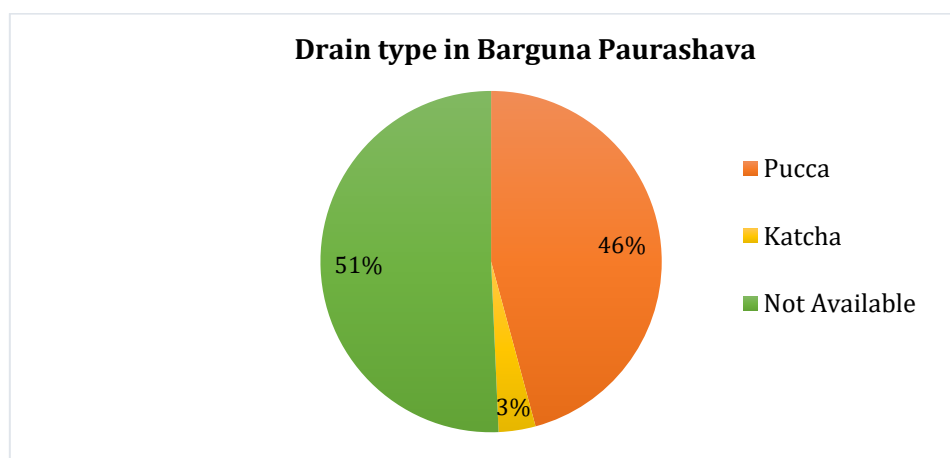


Source: Socio-economic Survey, 2018

**Figure 4. 31: Existing quality of roads in Barguna Sadar Upazila.**

#### 4.4.3 Drainage: Drain Type

The adequate drainage system is absent in Barguna Sadar Paurashava. As natural drainage system is working at union level so we had to focus only at the structured drainage system in the paurashava. About 51% area of the paurashava has no drain and 46% is found at pucca and only 3% katcha drain. These pucca drains are not properly working during rainy season due to low widening, filled up by dus, etc. leading the problem of water logging.



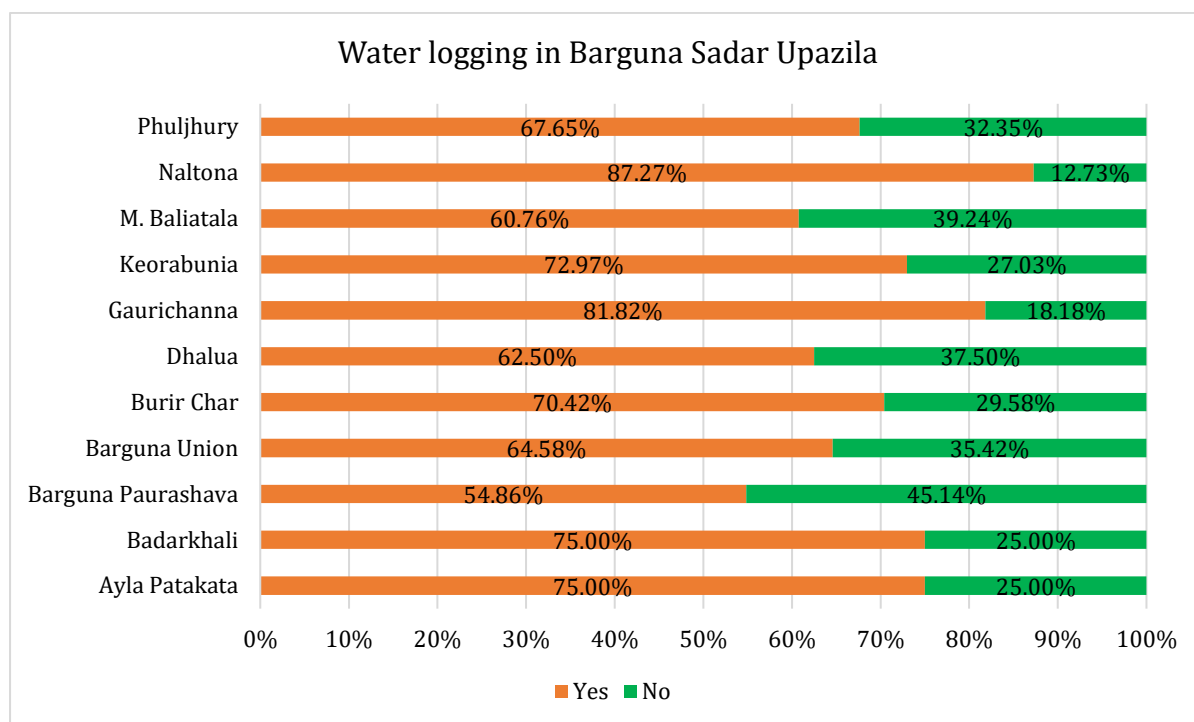
Source: Socio-economic Survey, 2018

**Figure 4. 32: Drain type in Barguna Paurashava**



#### 4.4.4 Water Logging Situation

Water logging is one of the major problems in Barguna Sadar Upazila. Though there are variations in the level of water logging in the different union, people of all the union perceive the problem of water logging. Maximum water logging (87.27%) has been recognized by the people of Naltona union and minimum water logging (54.86%) has been recognized by the people of Barguna Paurashava. In other unions above 60% people recognized the problem of water logging.

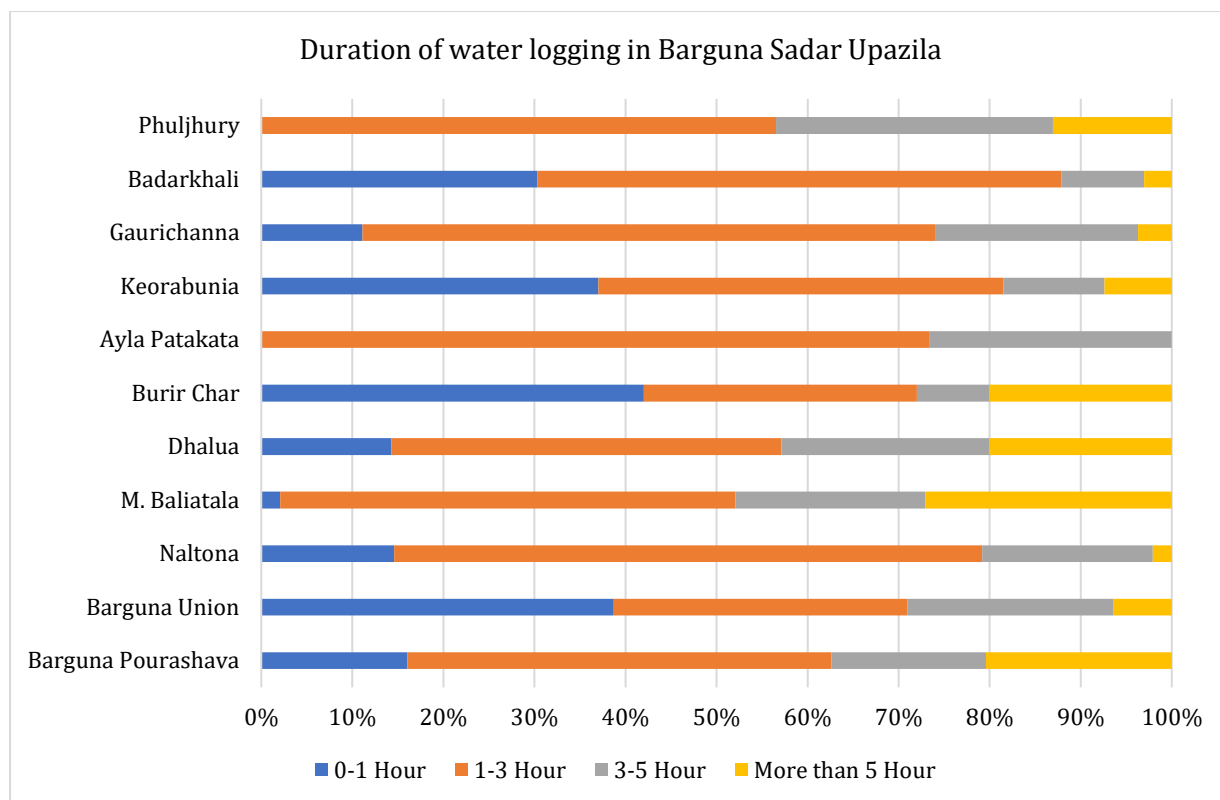


Source: Socio-economic Survey, 2018

**Figure 4. 33: Water logging in Barguna Sadar Upazila**

##### 4.4.4.1 Duration of Water logging

Water logging is one of the major problems in Barguna Sadar Upazila. Most of the time in rainy season all the unions of Barguna Sadar Upazila face minimum 1 to 3 hours of water logging. The situation stays less long in Barguna and Burir Char union and 0-1 hours get the highest position. More than 5 hours has also responded by the households of in all union and paurashava except Ayla Patakata.

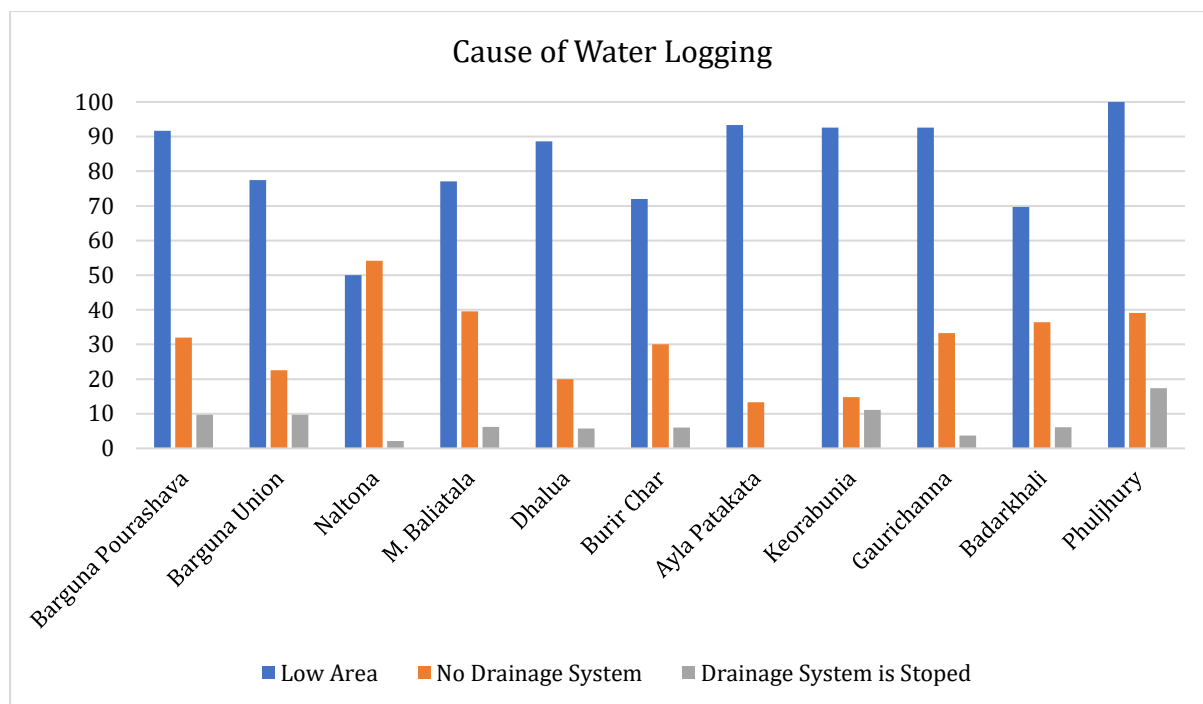


Source: Socio-economic Survey, 2018

**Figure 4. 34: Duration of water logging in Barguna Sadar Upazila**

#### 4.4.4.2 Causes of Water logging

Water logging is one of the major problems in Barguna Upazila. Most of the time in rainy season all the unions of Barguna Upazila face minimum 1 to 3 hours of water logging. The main cause of water logging is the geographic location of Barguna Sadar Upazila. It is situated in the lower area. Also, other than Barguna Paurashava, no union has any kind of drainage system.



Source: Socio-economic Survey, 2018

**Figure 4. 35: Causes of water logging in Barguna Sadar Upazila**

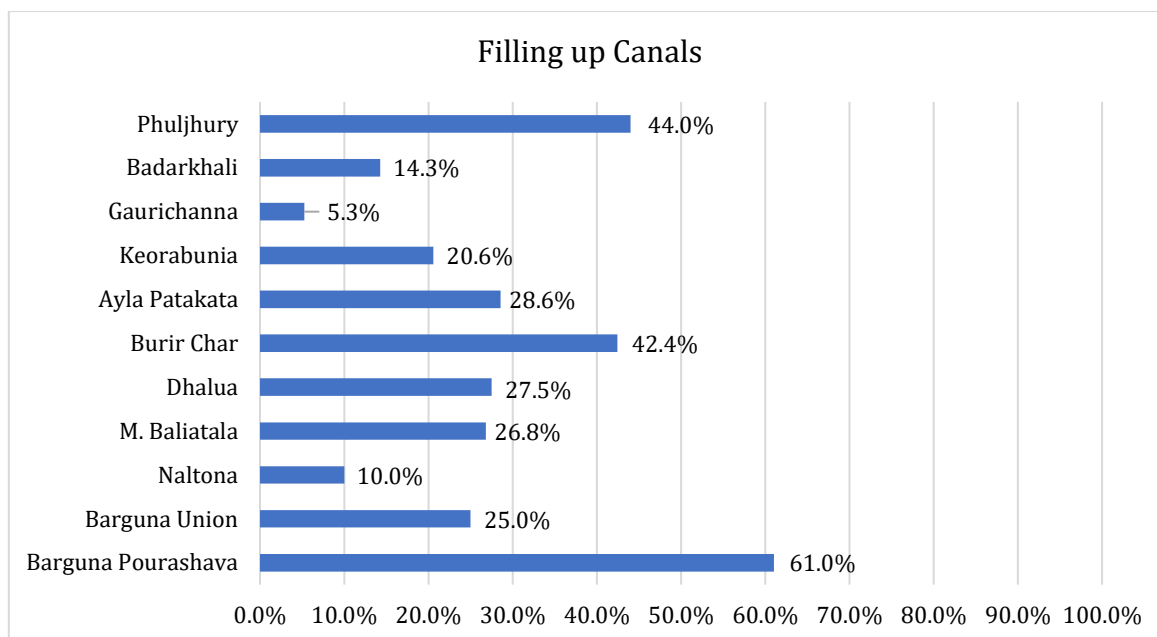
#### 4.4.5 Unauthorized Encroachment

##### 4.4.5.1 Settlement on Embankment

Unauthorized encroachment of embankment for temporary settlement has been found in Gourichanna, Phuljhury and Badarkhali Unions of Barguna Sadar Upazila. The embankment settlers use mostly katcha structures made of GI sheet, bamboo and other cheaper materials. Some of the squatters are unable to construct their houses and they make temporary sheds on the slopes with thatched materials. Due to frequent damage of livestock sheds, many people have built temporary animal sheds on the embankments. People who have grazing char lands across the river keep their herds on the embankment in temporary sheds. Some farmers store and preserve their straw and fuel stick on the embankment. All these unauthorized activities threaten the longevity and durability of embankment and there is evidence of soil cut due to frequent human action.

##### 4.4.5.2 Filling Up Canals

Canals of Barguna Paurashava, Phuljhury, and Burir Char are filling up very frequently. The people of Gaurichanna and Naltona faces canal filling problem less frequently.

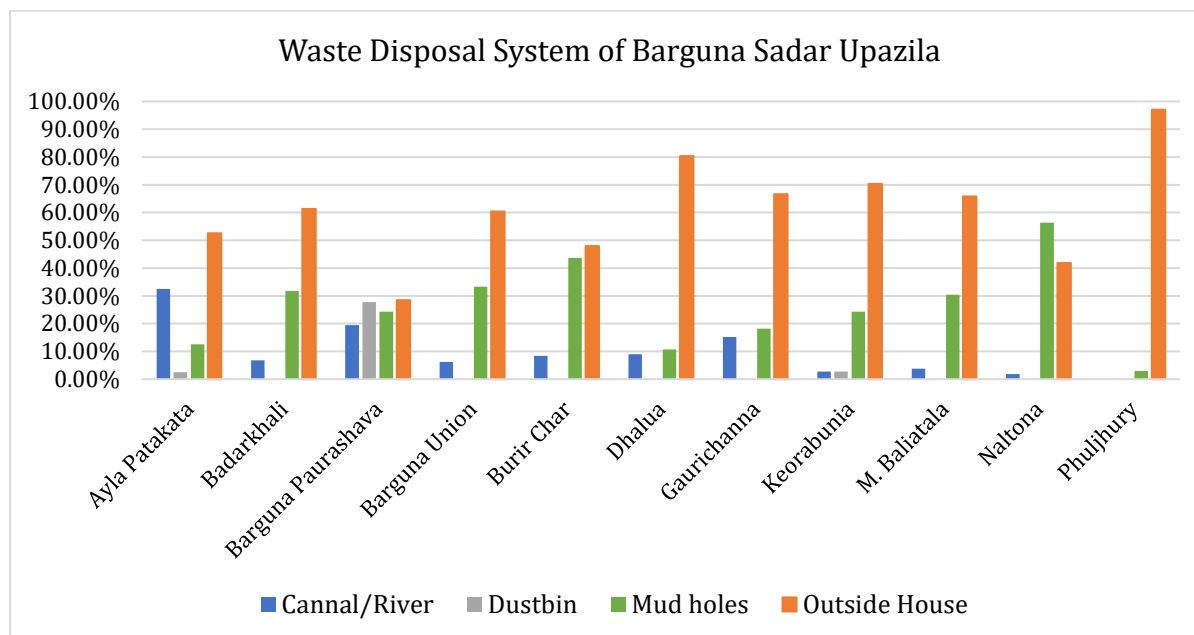


Source: Socio-economic Survey, 2018

**Figure 4. 36: Filling up of canals by the local people of Barguna Sadar Upazila**

#### 4.4.6 Waste Disposal System

Waste disposal system of Barguna Sadar Upazila shows that in rural area and paurashava area the people dispose waste just outside the house. People of this Upazila also dispose their waste in mud holes. In Barguna paurashava area more than 20% people use dustbin and about 25% people dispose waste in the canal/river.



Source: Socio-economic Survey, 2018

**Figure 4. 37: Waste disposal system of Barguna Sadar Upazila**

**4.4.7 Recreational Place: Playground and Park**

Most of the people of Barguna Sadar Upazila do not go to any recreational place regularly and many people don't go to any place. People who visit recreational spaces mainly playfield, park, river bank, and sea beach are preferable. Only 4.4 percent of people visit recreational places regularly. The visiting status of playground and Park has been analyzed in this sub-section. The overall scenario of visiting playground by the people of Barguna Sadar Upazila shows that 73.01% people don't go to playground and 26.99% people go to playground for recreational purpose. The status of visiting park shows that 83.62% of the total population of this Upazila don't go to park and only 16.38% people go to park for recreational purpose.

**Table 4. 9: Status of visiting playground by the people of Barguna Sadar Upazila**

Paurashava/Union	Playground	
	No	Yes
Ayla Patakata	95.00%	5.00%
Badarkhali	75.00%	25.00%
Barguna Paurashava	64.58%	35.42%
Barguna Union	68.75%	31.25%
Burir Char	76.06%	23.94%
Dhalua	66.07%	33.93%
Gaurichanna	66.67%	33.33%
Keorabunia	59.46%	40.54%
M. Baliatala	87.34%	12.66%
Naltona	76.36%	23.64%
Phuljhury	73.53%	26.47%
<b>Total</b>	<b>73.01%</b>	<b>26.99%</b>

Source: Socio-economic Survey, 2018

**Table 4. 10: Status of visiting park by the people of Barguna Sadar Upazila**

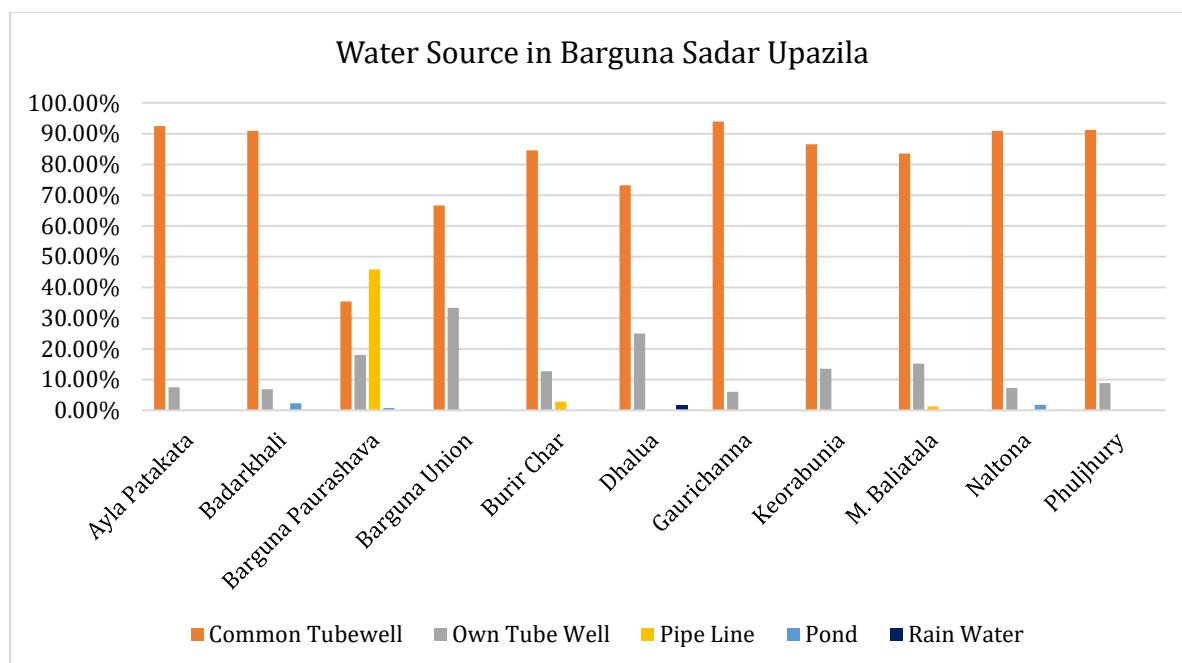
Paurashava/Union	Park	
	No	Yes
Ayla Patakata	100.00%	0.00%
Badarkhali	81.82%	18.18%
Barguna Paurashava	64.58%	35.42%
Barguna Union	83.33%	16.67%
Burir Char	80.28%	19.72%
Dhalua	87.50%	12.50%
Gaurichanna	87.88%	12.12%
Keorabunia	86.49%	13.51%
M. Baliatala	98.73%	1.27%
Naltona	87.27%	12.73%
Phuljhury	100.00%	0.00%
<b>Total</b>	<b>83.62%</b>	<b>16.38%</b>

Source: Socio-economic Survey, 2018

#### 4.4.8 Water Source and Related issues

##### 4.4.8.1 Water Source

Pipeline (45.83%) is the main water source for the people of Barguna paurashava. The second main source of water in paurashava area is common tube well (35.42%). Without these two sources in paurashava area people collect water from own tube well, and pond. In the rural area of Barguna Sadar Upazila the main water source is the common tube well and own tube well.



Source: Socio-economic Survey, 2018

**Figure 4. 38: Major water source in Barguna Sadar Upazila**

##### 4.4.8.2 Water Quality

In the Barguna Sadar Upazila 98.75% people mention that water is drinkable, 1.09% people said water is undrinkable and only 0.16% contaminated with arsenic. In Barguna Sadar Upazila, water quality in most of the union is drinkable. Arsenic is found in Dhalua about 1.79%. In Barguna Sadar Paurashava, 2.27% of people have said that water is undrinkable. In all other union, maximum cases, people respond to the quality of the water as drinkable.

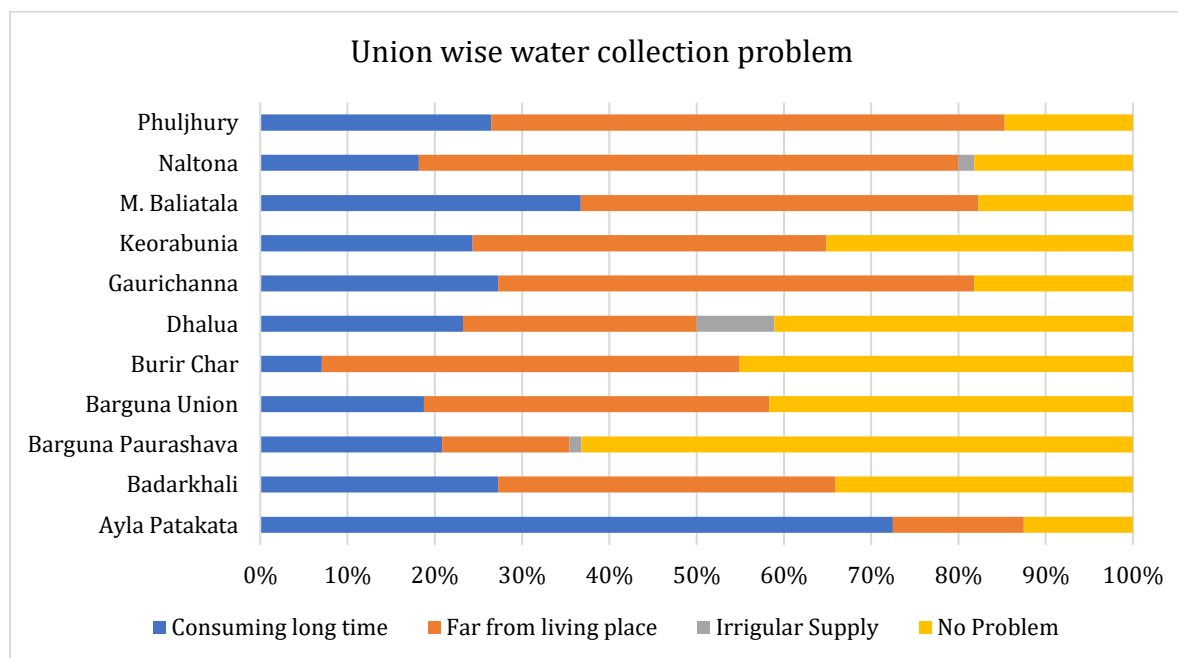
**Table 4. 11: Quality of water in Barguna Sadar Upazila**

Paurashava/Union	Water quality		
	Drinkable	Undrinkable	Contaminated with Arsenic
Ayla Patakata	100.00%	0.00%	0.00%
Badarkhali	97.73%	2.27%	0.00%
Barguna Paurashava	97.92%	2.08%	0.00%
Barguna Union	100.00%	0.00%	0.00%
Burir Char	97.18%	2.82%	0.00%
Dhalua	98.21%	0.00%	1.79%
Gaurichanna	100.00%	0.00%	0.00%
Keorabunia	100.00%	0.00%	0.00%
M. Baliatala	100.00%	0.00%	0.00%
Naltona	98.18%	1.82%	0.00%
Phuljhury	100.00%	0.00%	0.00%
<b>Total</b>	<b>98.75%</b>	<b>1.09%</b>	<b>0.16%</b>

Source: Socio-economic Survey, 2018

#### 4.4.8.3 Water Collection Problem

The main problem related to water collection in Barguna Sadar Upazila is dominated by the location of sources far from living place and long-time requirement for water collection. In paurashava area the problem is not acute as the rural area.



Source: Socio-economic Survey, 2018

**Figure 4. 39: Water collection related problems in Barguna Sadar Upazila**

#### 4.4.8.4 Water Source for Drinking in Flood Time

At the time of the flood, 66.35% of people use rainwater as one of the most important drinking water sources. Some people (27.75%) use tube wells which are built in the high platform at that time. Without these 5.74% people use river or pond water after rectifying it by phitkiri and only 0.16% people use water after treatment the water by purifying tablet.

**Table 4. 12: Source of drinking water during flood time in Barguna Sadar Upazila**

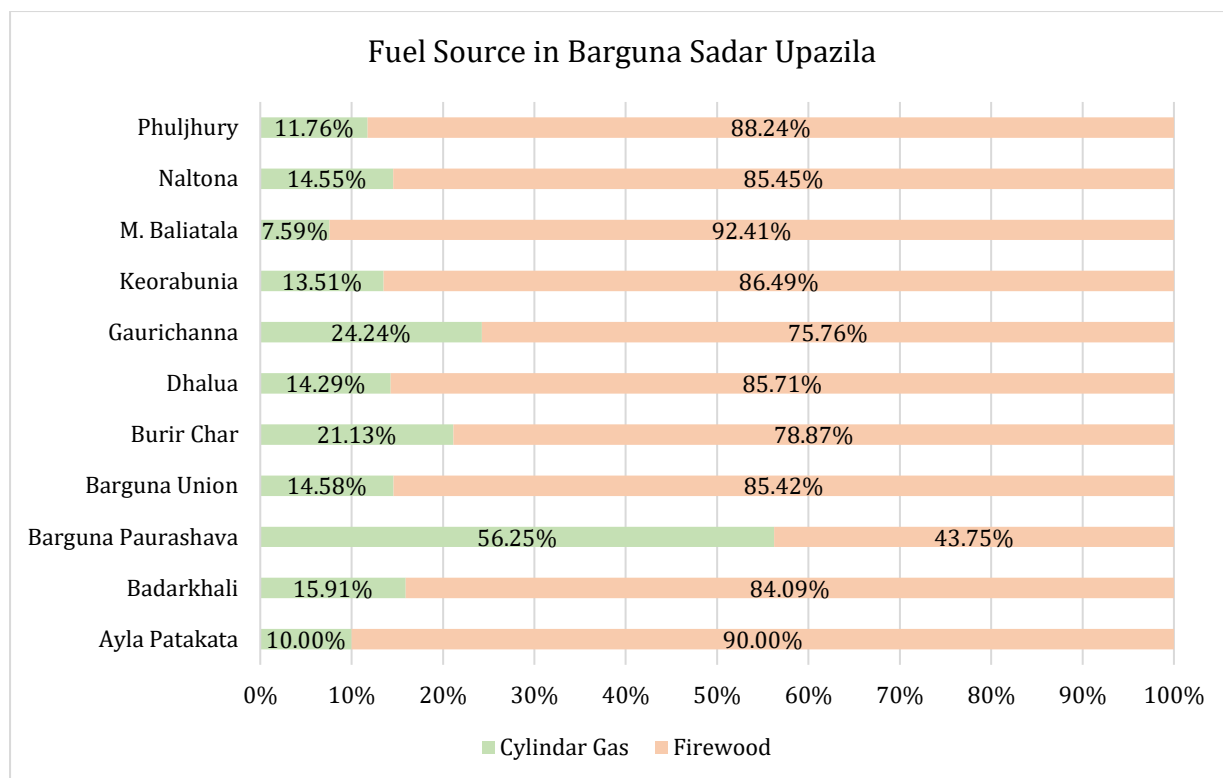
Union/Paurashava	Fitkiri	Purification tablet	Rain Water	Tube Well
Ayla Patakata	0.00%	0.00%	32.50%	67.50%
Badarkhali	0.00%	0.00%	76.74%	23.26%
Barguna Paurashava	0.73%	0.00%	64.23%	35.04%
Barguna Union	2.08%	0.00%	75.00%	22.92%
Burir Char	0.00%	0.00%	83.10%	16.90%
Dhalua	24.53%	1.89%	56.60%	16.98%
Gaurichanna	0.00%	0.00%	72.73%	27.27%
Keorabunia	0.00%	0.00%	86.49%	13.51%
M. Baliatala	11.84%	0.00%	51.32%	36.84%
Naltona	1.82%	0.00%	76.36%	21.82%
Phuljhury	32.35%	0.00%	58.82%	8.82%
<b>Total</b>	<b>5.74%</b>	<b>0.16%</b>	<b>66.35%</b>	<b>27.75%</b>

Source: Socio-economic Survey, 2018

#### 4.4.9 Fuel Source

The scenario of fuel source in Barguna Sadar Upazila is dominated by the use of firewood. In paurashava area, more than half (56.25%) of the household use cylinder gas as their main source of fuel and another 43.75% use firewood as fuel source. In the rural area more than 80% household even the Ayla Patakata union 90% and M. Baliatala union 92% household use firewood as their main fuel source. However, in Gaurichanna and Burir Char union more than 20% household use cylinder gas as their source of fuel.



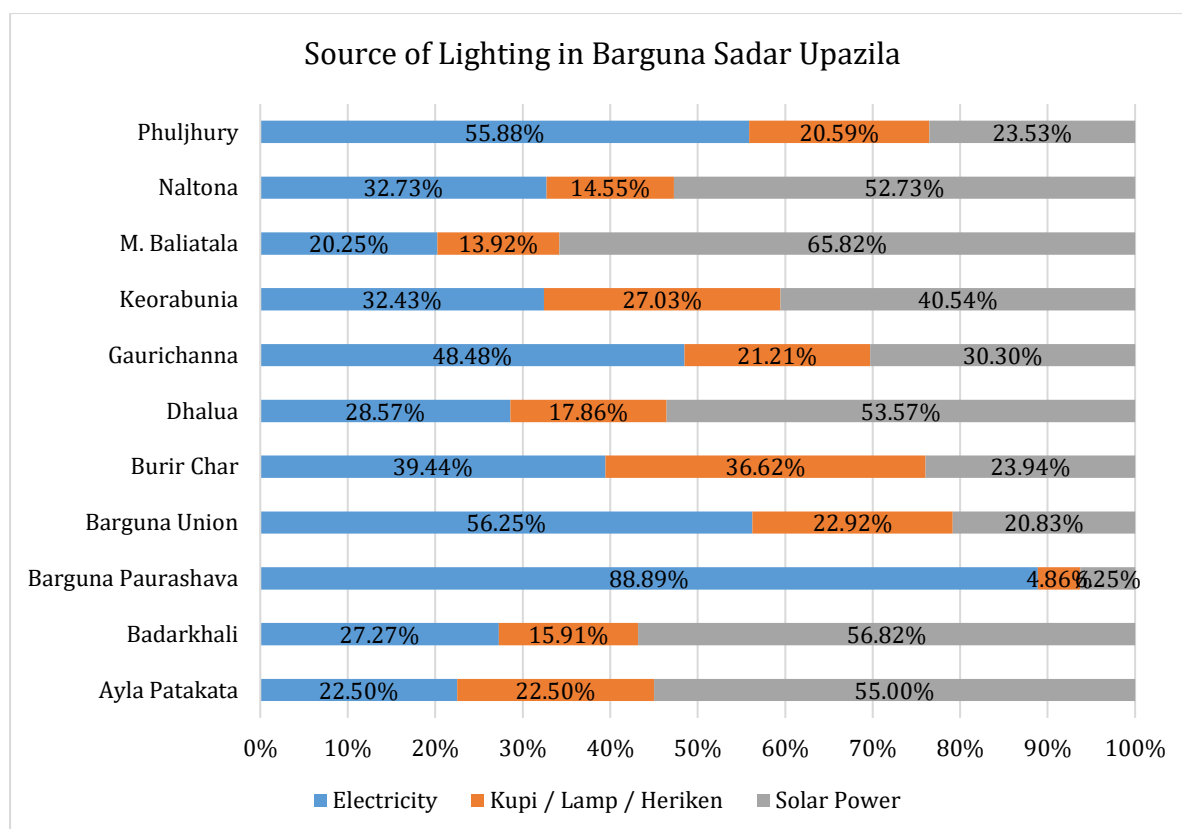


Source: Socio-economic Survey, 2018

**Figure 4. 40: Fuel source in Barguna Sadar Upazila**

#### 4.4.10 Source of Lighting

Most of the people of Barguna Sadar Paurashava use electricity as the main source of light. In Badarkhali, Keorabunia, Ayla Patakata, Dhalua, M. Baliatala, and Naltona, most of the people use solar energy as the main source of light. Kupi, lamp or heriken also covers the demand for a great portion of the households in a different union.

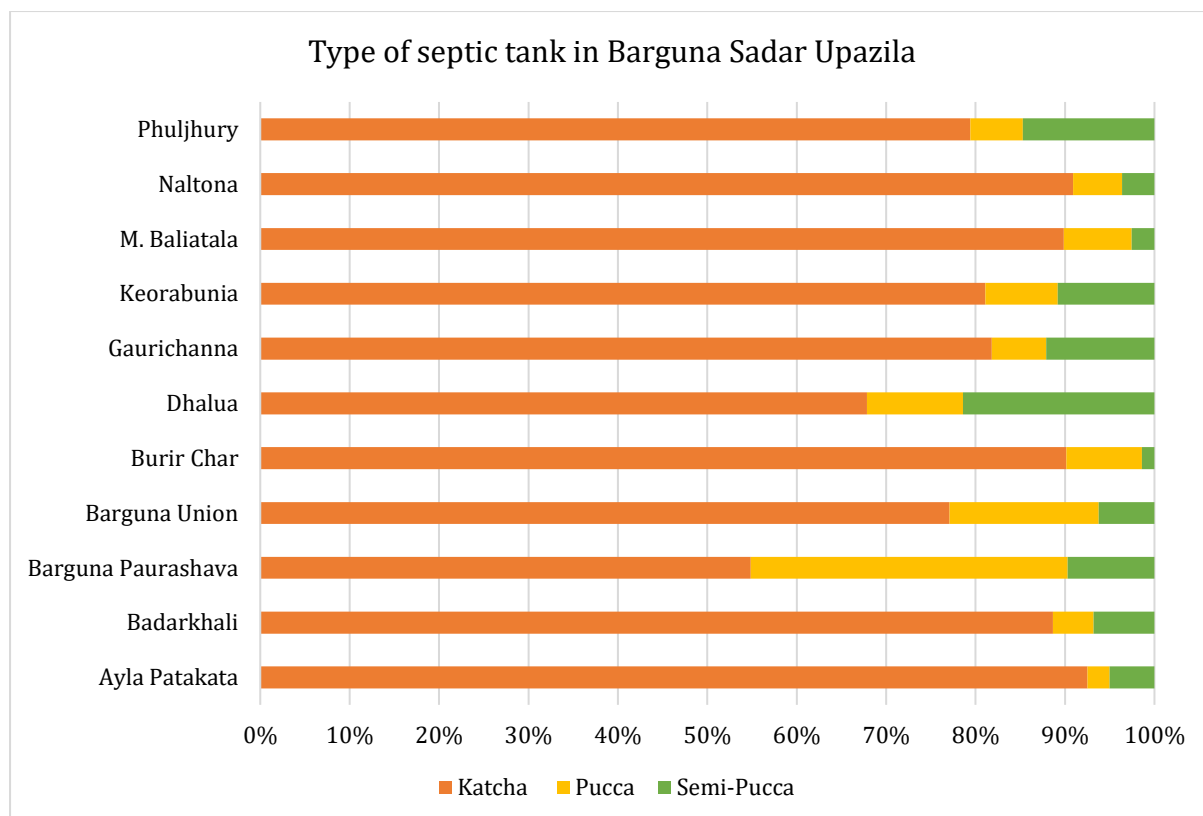


Source: Socio-economic Survey, 2018

**Figure 4. 41: Source of lighting in Barguna Sadar Upazila**

#### 4.4.11 Type of Septic Tank

Most of the septic tank of Barguna Sadar Upazila are katcha in type. The scenario of a septic tank in Barguna paurashava indicates 54.86% septic tanks are katcha, 35.42% septic tanks are pucca and another 9.72% septic tanks are semi-pucca. In rural area, the Dhalua union has highest number of pucca and semi-pucca septic tank which occupy 31.14%. The Barguna and Phuljhury union have more than 20% semi-pucca and pucca septic tank. The other union has less than 20% semi-pucca and pucca septic tank.



Source: Socio-economic Survey, 2018

**Figure 4. 42: Type of septic tank in Barguna Sadar Upazila**

#### 4.4.12 Quality of Different Services

Respondents of all union and paurashava respond about the quality of services and the quality of services in this Upazila ranges from moderate to good. In the paurashava area market condition has been perceived moderate (6.99%) to good (93.01), shopping center condition has been perceived moderate (4.26%) to good (95.74%) and condition of post office, fire service, and hospital have been also perceived moderate to good. With compare to other unions the services condition of Phuljhury union is not so good though the respondent mentioned moderate to good service condition.

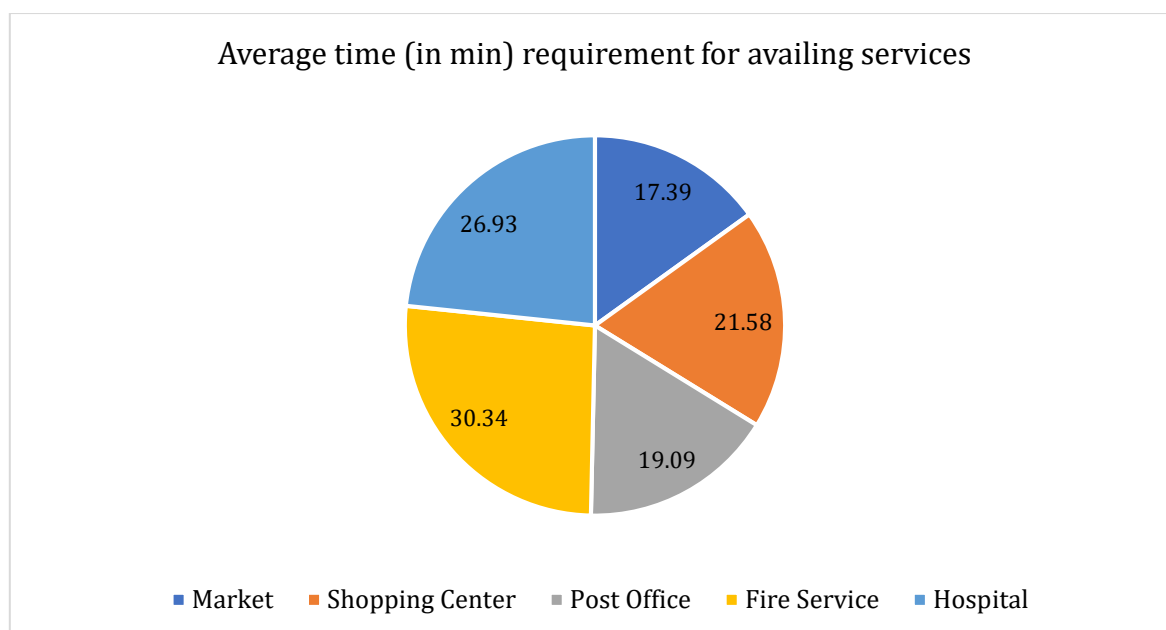
**Table 4. 13: Quality of services in Barguna Sadar Upazila**

Paurashava/ Union	Quality of Services									
	Market		Shopping Center		Post Office		Fire Service		Hospital	
	Good	Moderate	Good	Moderate	Good	Moderate	Good	Moderate	Good	Moderate
Ayla Patakata	70.00%	30.00%	77.50%	22.50%	79.49%	20.51%	83.78%	16.22%	85.00%	15.00%
Badarkhali	50.00%	50.00%	75.00%	25.00%	75.76%	24.24%	75.86%	24.14%	79.55%	20.45%
Barguna Paurashava	93.01%	6.99%	95.74%	4.26%	94.64%	5.36%	94.55%	5.45%	94.44%	5.56%
Barguna Union	87.50%	12.50%	83.33%	16.67%	82.35%	17.65%	90.63%	9.38%	89.58%	10.42%
Burir Char	66.20%	33.80%	90.14%	9.86%	97.67%	2.33%	100.00%	0.00%	97.18%	2.82%
Dhalua	53.57%	46.43%	50.00%	50.00%	63.46%	36.54%	63.04%	36.96%	67.86%	32.14%
Gaurichanna	84.85%	15.15%	87.88%	12.12%	76.00%	24.00%	82.61%	17.39%	87.88%	12.12%
Keorabunia	70.27%	29.73%	78.38%	21.62%	50.00%	50.00%	55.56%	44.44%	75.68%	24.32%
M. Baliatala	50.63%	49.37%	79.75%	20.25%	85.71%	14.29%	91.78%	8.22%	92.41%	7.59%
Naltona	52.73%	47.27%	87.27%	12.73%	95.12%	4.88%	100.00%	0.00%	100.00%	0.00%
Phuljhury	23.53%	76.47%	29.41%	70.59%	34.48%	65.52%	46.43%	53.57%	61.76%	38.24%

Source: Socio-economic Survey, 2018

#### 4.4.13 Time Requirement for Availing Services

Average time to get access to different services for the people of Barguna Sadar Upazila varies from one service to another service. The easiest accessibility in terms of time has been observed in the case of the market facility. People need an average of 17.39 minutes to get access to a market. The second easiest accessibility has been observed for the post office which needs average 19.09 minutes to get the service. The people require average 21.58 minutes to go to shopping center. The hospital which is the utmost requirement when a person became sick, need average 26.93 minutes to get the service. People need the highest time (30.34 min) for getting fire service facility among the facilities they have access.



Source: Socio-economic Survey, 2018

**Figure 4. 43: Average time need to go to service center in Barguna Sadar Upazila**

#### 4.4.14 Mode Choice for Availing Different Services

Transportation demand is demand driven demand because people need to generate a trip to full fill their other demand. To get access to different services and facilities people of BARGUNA Sadar Upazila are generating trips by using different transport modes. Mode choice also depends on some variables. There are variations in mode choice among the people of Barguna Sadar Upazila. The people of Barguna Sadar Upazila choice rickshaw as their main mode of transport to get all services and then they prefer walking as the mode of transport for different services. Average 3% people chose car as their mode of transport. A little portion of population use bus, bicycle and van as their mode of transport in Barguna Sadar Upazila.

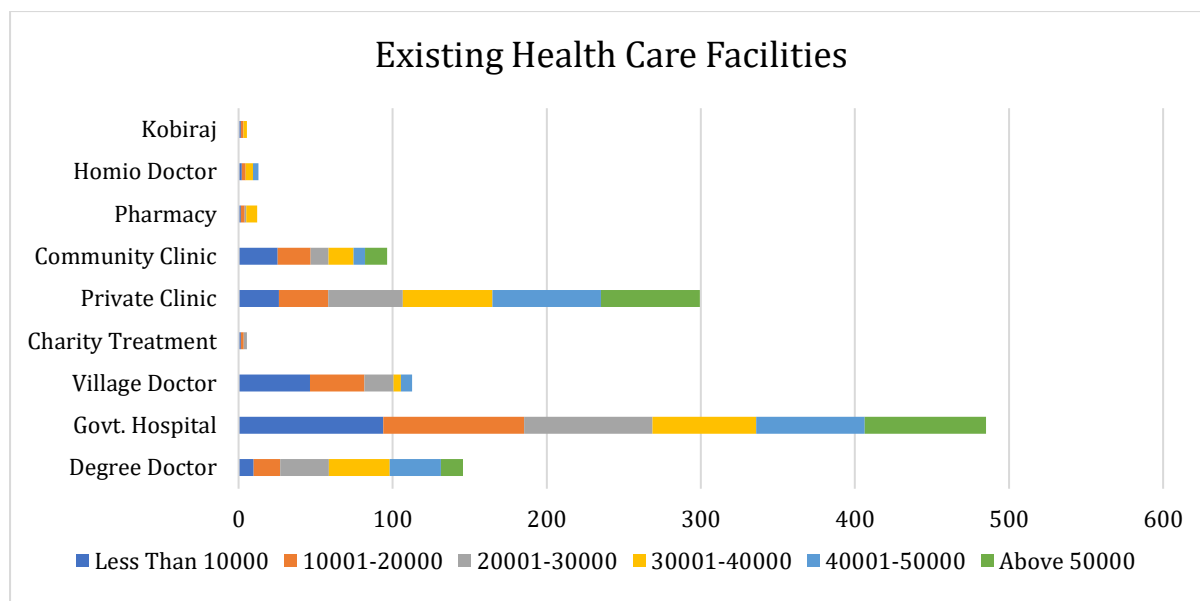
**Table 4. 14: Mode choice for services in Barguna Sadar Upazila**

Transport Mode	Name of Services				
	Market	Shopping Center	Post Office	Fair Service	Hospital
Bicycle	0.92%	0.92%	1.00%	1.09%	0.92%
Bus	0.34%	0.34%	0.29%	0.16%	0.34%
Car	3.33%	3.33%	2.29%	2.65%	3.33%
Motor Cycle	2.06%	2.06%	1.86%	1.40%	2.06%
Rickshaw	57.57%	57.57%	59.31%	59.59%	57.57%
Van	0.11%	0.11%	0.14%	0.16%	0.11%
Walking	35.67%	35.67%	35.10%	34.95%	35.67%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

Source: Socio-economic Survey, 2018

#### 4.4.15 Health Care Services for Different Income Group

In Barguna Sadar Upazila, most of the people use government hospital for medical treatment. All income ranged households have found in access to the different health care facilities especially govt. hospital and a private clinic. It is not true that people of lower income group can't go to those places where the upper level go. A very few people go to kobiraj, home doctors, pharmacies and charity treatment which is the indication of better understanding of the households about proper treatment. The following figure 4.30 has just incorporated to understand the above discussion.



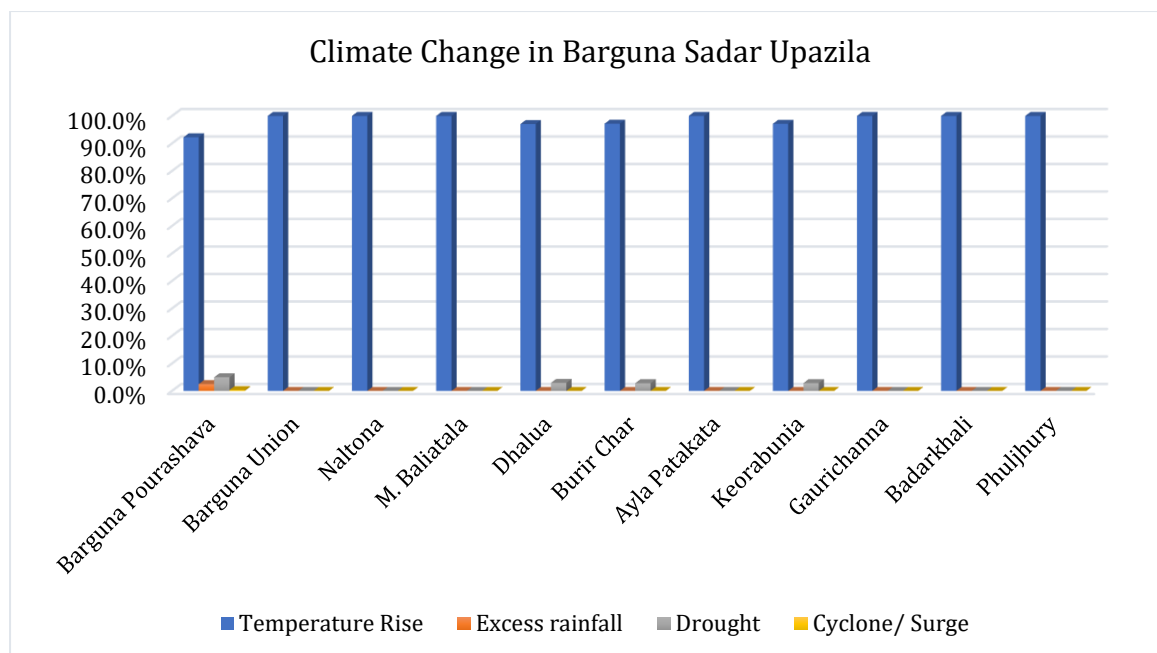
Source: Socio-economic Survey, 2018

**Figure 4. 44: Existing health care facilities available in Barguna Sadar Upazila**

#### 4.5 Climate Change Related Issues

##### 4.5.1 Climate Change

Climate change is one of the most important issues in recent years. People of Barguna Sadar Upazila have faced temperature raising problem in recent years. Some of them said that they had experience of drought problem. It is an interesting fact that in recent time cyclone has frequently attacked the coastal area of Bangladesh and environmentalists said that these are the impacts of climate change. The highest population was died due to a cyclone in Barguna district still the people of this area don't think like that. But why do they lowly consider cyclone as the output of climate change can be kept for further research.

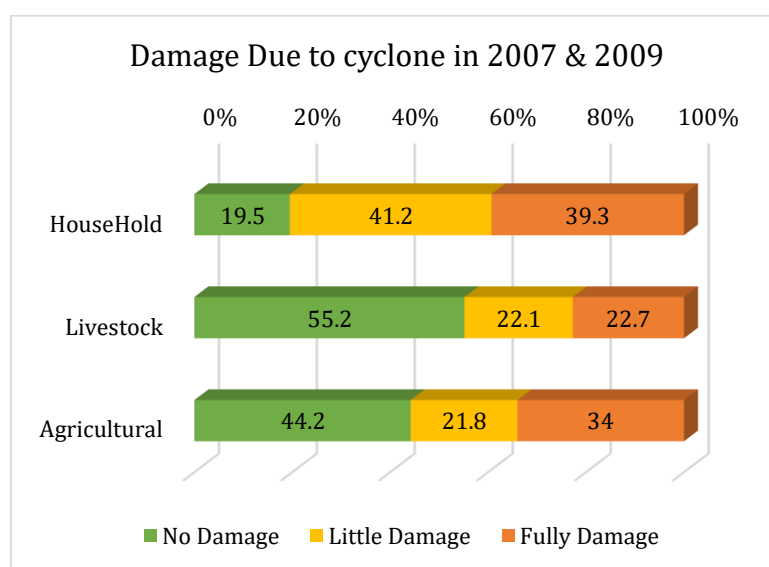


Source: Socio-economic Survey, 2018

**Figure 4. 45: Climate change issues of Barguna Sadar Upazila**

#### 4.5.2 Damage of Assets due to Cyclone in 2007 and 2009

In 2007 and 2009 most of the people had lost their houses. The damage of agricultural and livestock was less in compare with households. In Barguna Upazila 39.3% households were fully damaged and 41.2% households were little damaged due to cyclone. Without this 22.7% people lost fully their livestock asset and 22.1% people faced little damage of their livestock due to cyclone. The agricultural asset was fully damaged for 34% people and little damage for 21.8% people.

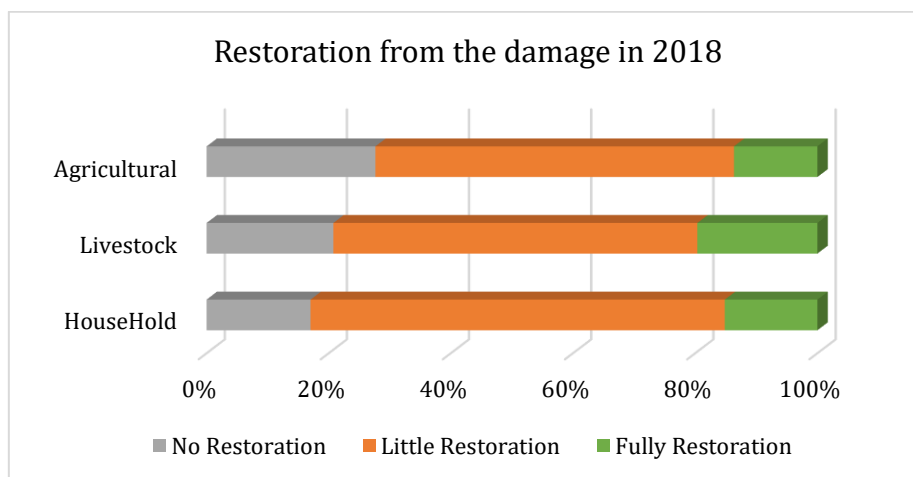


Source: Socio-economic Survey, 2018

**Figure 4. 46: Damage due to cyclone in 2007 and 2009 in Barguna Sadar Upazila**

### 4.5.3 Restoration from Damage of Cyclone

The assets that were damaged due to cyclone has been depicted in the previous subsection, an analysis on restoration from the damaged assets has been performed to show the level of restoration. Most of the people have restored a small portion of their damaged property. Some of them have not able to restore anything. Average 20% people make a full restoration from all assets that was damaged due to cyclone.

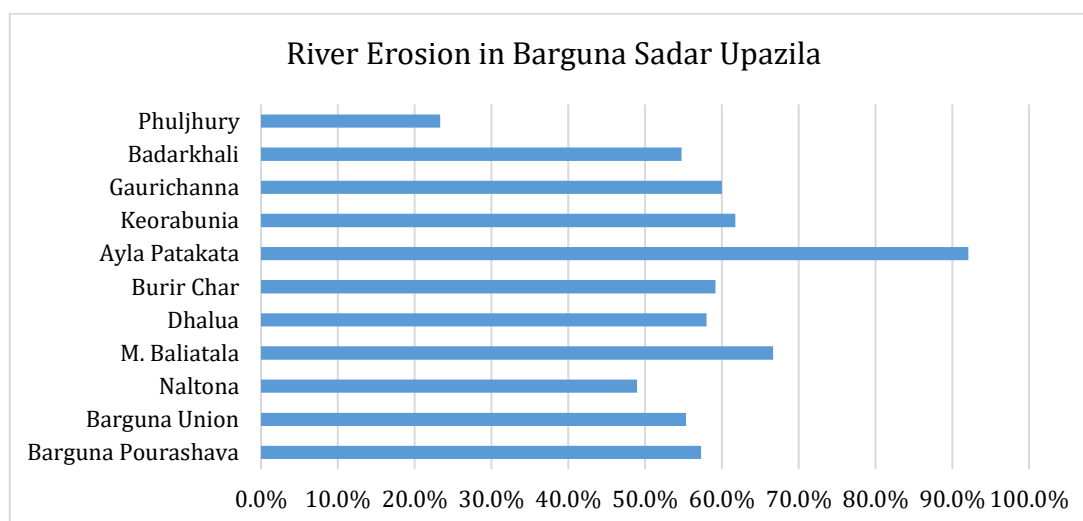


Source: Socio-economic Survey, 2018

**Figure 4. 47: Restoration from damage of cyclone in Barguna Sadar Upazila**

### 4.5.4 River Erosion

All the union of Barguna Sadar Upazila has faced river erosion. Phuljhury union faces river erosion lowly about 23.3% and most of the people of Ayla Patakata about 92.1% have to face the adverse effect of river erosion. In other all union this can't be considered a little bit problem as about 50 to 60% people of those responded that they had to face severely the hazard-river erosion.



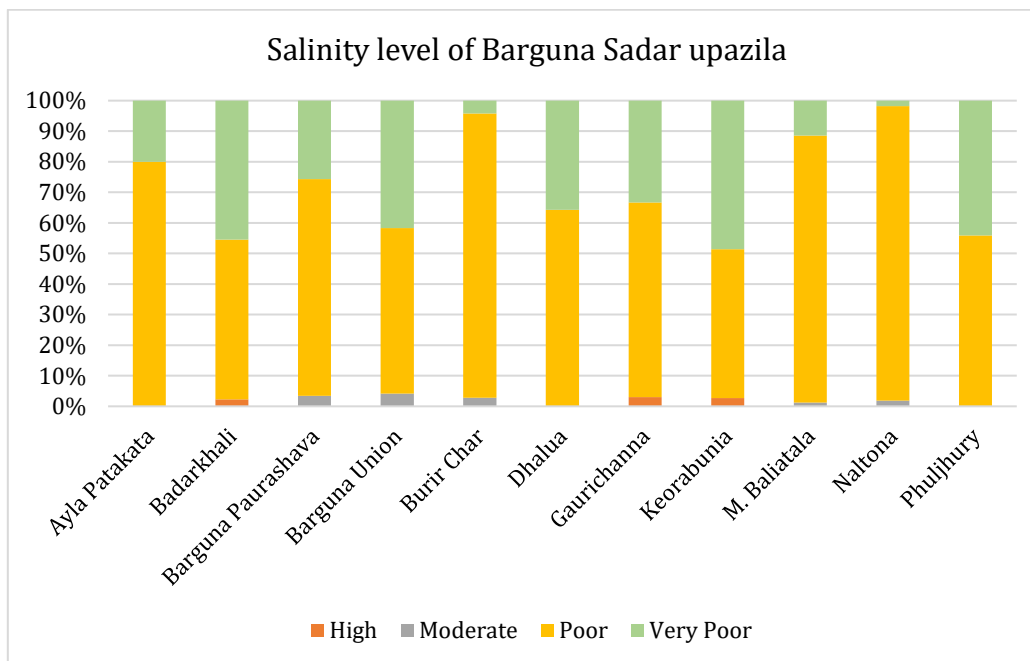
Source: Socio-economic Survey, 2018

**Figure 4. 48: Scenario of river erosion in Barguna Sadar Upazila**



### 4.5.5 Salinity Level

Barguna Upazila has a little bit salinity problem. Most of the people of all unions said salinity level is poor or very poor in their locality. In Barguna paurashava, Barguna union, Burir Char union, M. Baliatala union, Naltona union there are existence of moderate level of salinity which is mention by on an average about 2% people. The high level of salinity has been found a little bit in Badarkhali, Gaurichanna and keorabunia union.

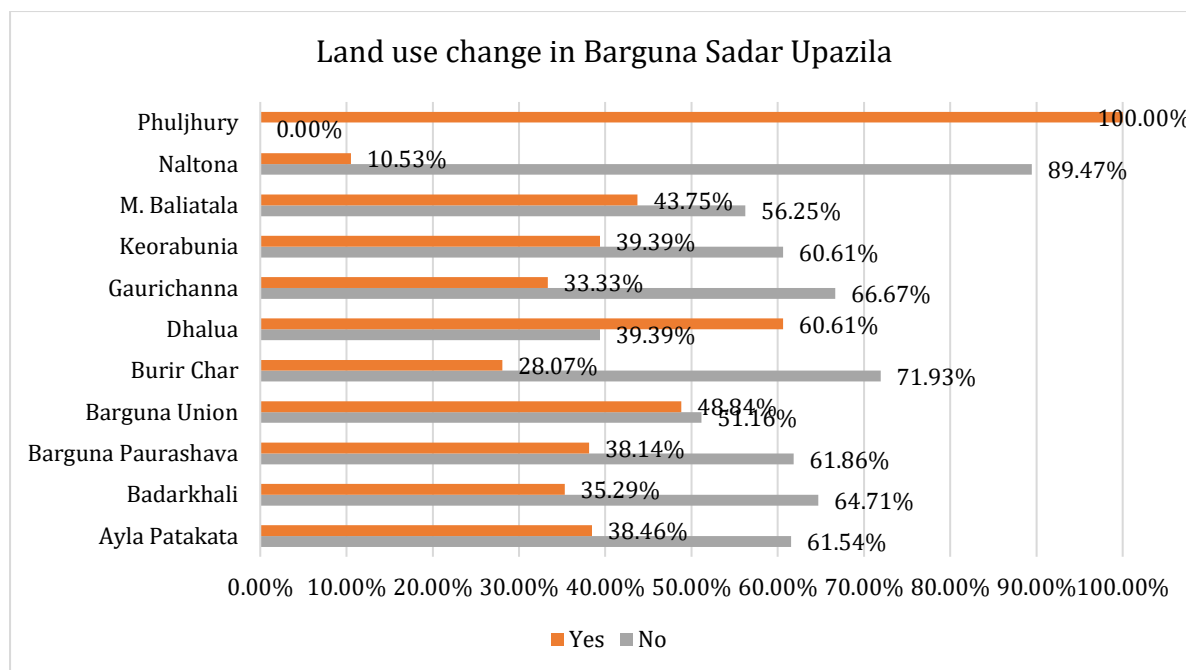


Source: Socio-economic Survey, 2018

**Figure 4. 49: Salinity level in Barguna Sadar Upazila**

### 4.5.6 Land Use Change

People of Barguna Sadar Upazila perceive the land use of their locality. This change is happening mostly because of many socio-economic and climatic factors. In Phuljhuri union, all respondents said that the land use of their locality is changing and this change is happened because of social factors. The least land use change scenario has been recognized by the resident of Naltona union. Only 10.53% people mention the land use change scenario in this union but in other unions a good percentage of people recognized the land use changing scenario. In Barguna paurashava which is the urban area in this Upazila, 38.14% recognized the land use change scenario and another 61.86% dot recognized the land use change within the paurashava area.

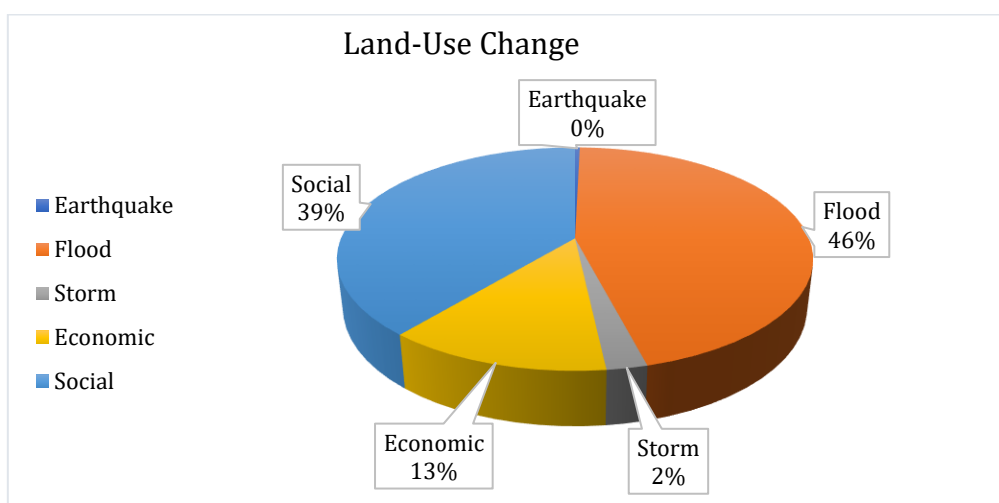


Source: Socio-economic Survey, 2018

**Figure 4. 50: Percentage of land-use change status in Barguna Sadar Upazila**

#### 4.5.7 Causes of Land Use Change

In Barguna Sadar Upazila frequency of flood is very high and most of the people suffer a lot because of this climatic disaster. Land use also changed a lot because of the flood. People who perceive the land use change in Barguna Sadar Upazila among them 46% people figure out flood as a primary cause of land use change. Also, change in social condition is also getting a high percentage (39%) as this factor has an impact on land use change. Economic factor and storm in this area also have some minor impact on changing the land use of this area.



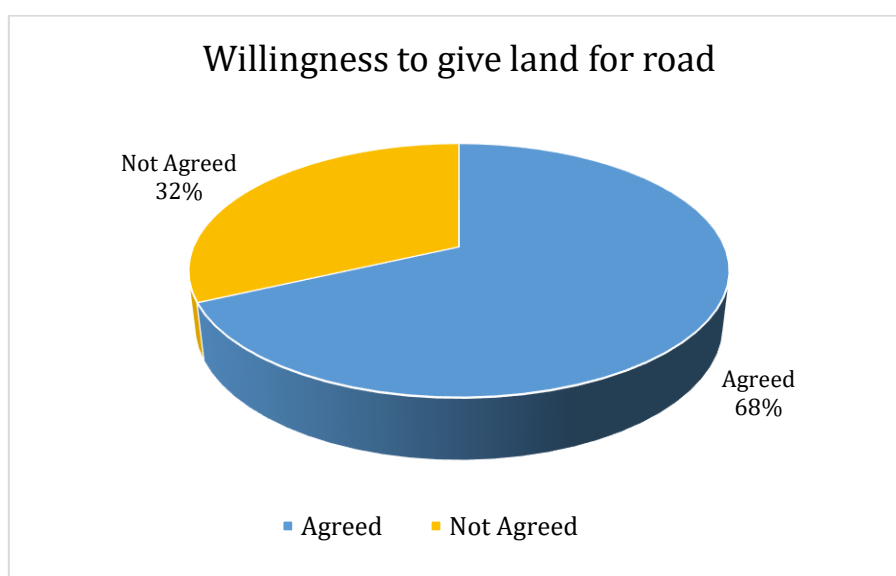
Source: Socio-economic Survey, 2018

**Figure 4. 51: Cause of land-use change in Barguna Sadar Upazila**

## 4.6 Stakeholders Participation for Planning and Development Control

### 4.6.1 People Willingness to Give Land for Road

One of the major problems in Barguna Sadar Upazila is based on the road. In many areas of this Upazila, road width is not enough as well as bad or damaged road network. So, it is must to improve the present road network for sustainable development. For this, it is important to have people’s willingness for sacrificing their land for improving the present road network. About 68 percent of people agreed to give land for improving the road network where 32% of people are no agreed to sacrifice their land property for enhancing the present road network.



Source: Socio-economic Survey, 2018

**Figure 4. 52: Percentage of people willingness to giving land for road**

People who want to give land for improving the road network among them 19.62 percent people want to give 1ft. Where most of them want to sacrifice 2 ft land for this purpose. There are also some other people who want to sacrifice 4 to 7 ft space, but their percentage is not so high.

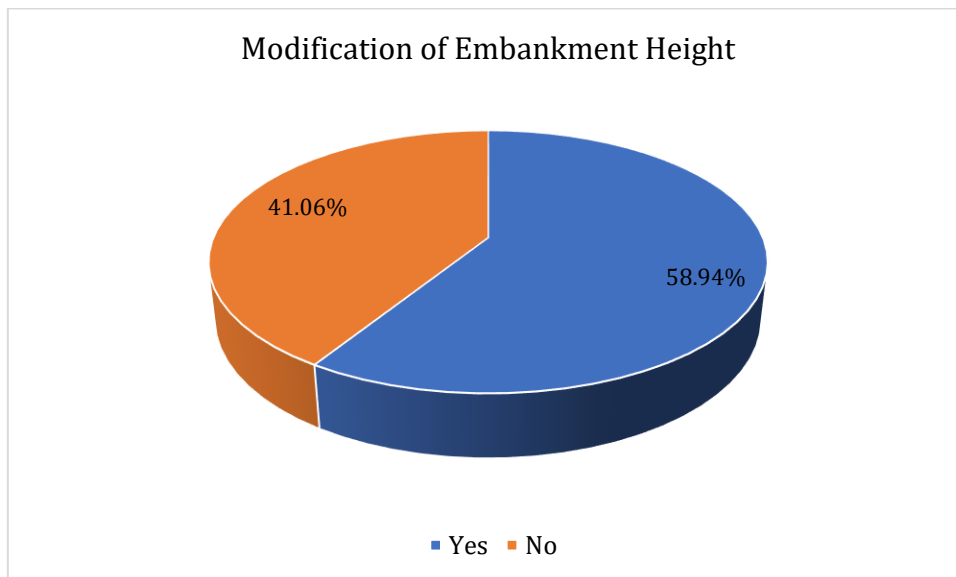
**Table 4. 15: Percentage of giving land for road**

Land for Road (ft)	Percentage
1	19.62%
2	64.85%
3	12.80%
4	2.05%
5	0.51%
7	0.17%
<b>Total</b>	<b>100%</b>

Source: Socio-economic Survey, 2018

### 4.6.2 Modification of Embankment

Regarding modification of embankment, people have a different opinion. Most of the people (58.94%) mention no need for embankment modification but another 41.06% of people mention need for modification of the embankment.

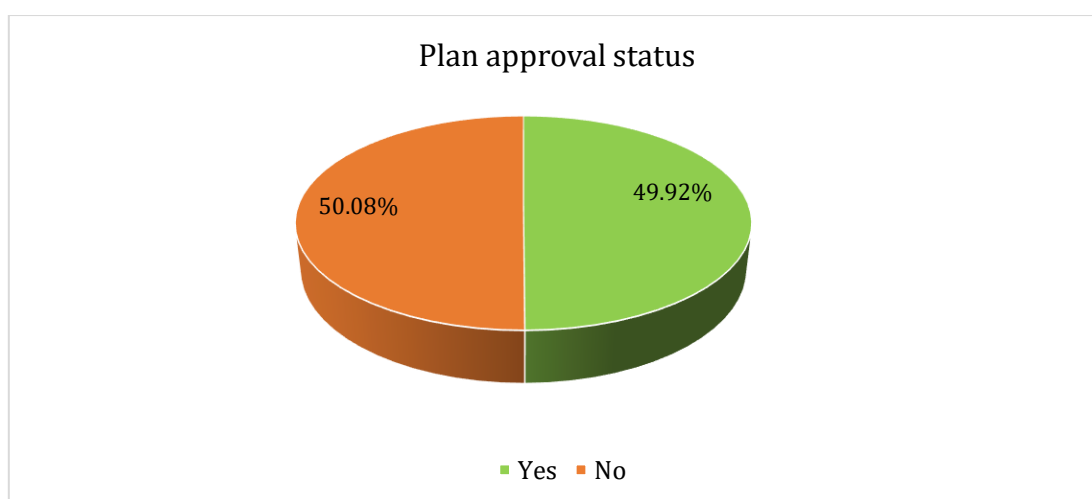


Source: Socio-economic Survey, 2018

**Figure 4. 53: People's perception on modification of embankment height**

### 4.6.3 Plan Approval Status

In Barguna Sadar Paurshava more than half of the houses (50.08%) are constructed without approval from the respective authority. Remaining 49.92% houses are constructed by following legal procedure.

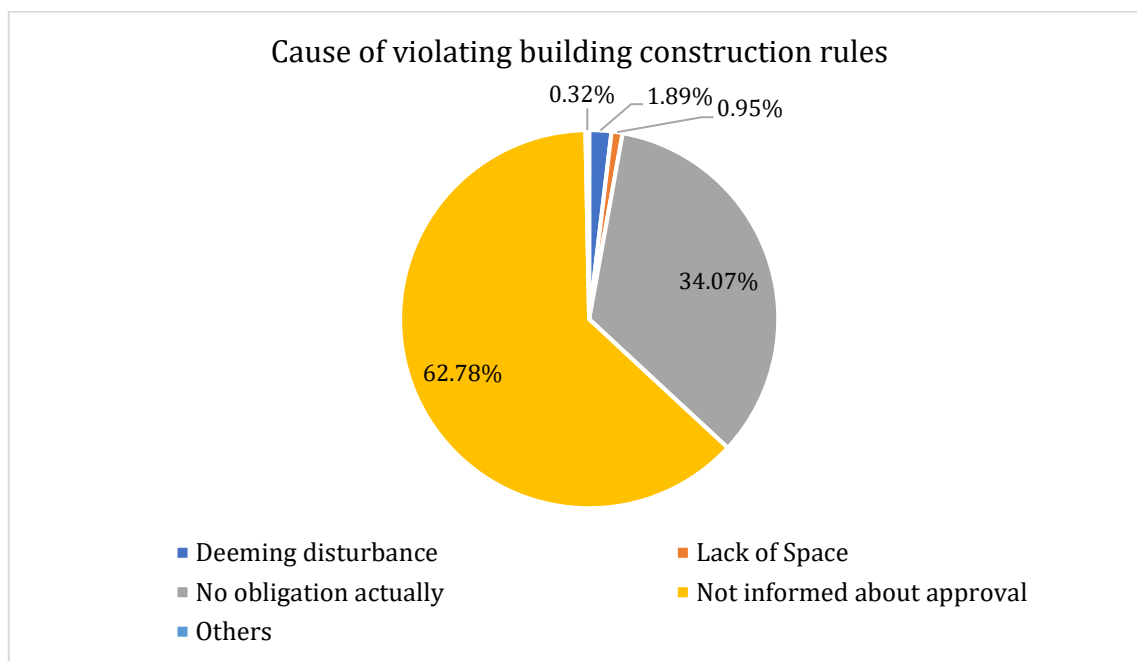


Source: Socio-economic Survey, 2018

**Figure 4. 54: Plan approval status in Barguna paurashava**

#### 4.6.4 Causes of Violating Building Construction Rule

The figure depicted that 62.78% of those who have no approval, actually they don't know and 34.07% claim that there is no obligation about following Building Construction Rules. Some people think, taking building approval is a problem which may reduce the size of the building area.



Source: Socio-economic Survey, 2018

**Figure 4. 55: Causes of violating the building construction rules**

#### 4.7 SWOT Analysis of Barguna Sadar Upazila

Assessment of strengths, weaknesses, opportunities, and threats of an area forms the basis for preparation of a relevant comprehensive plan. An Upazila level SWOT analysis has been done in this section based on an assessment of the status of the socio-economic condition of Barguna Upazila. The objective of this exercise is to build on strengths, which act as drivers of growth, and address weakness by establishing a long-term vision for growth and development, and establishing clear development strategies, so as to take advantage of opportunities in diverse economic sectors, social development and inward investment and also, to mitigate potential risks and threats which the city is likely to face in future. Moreover, SWOT analysis is intended to maximize strengths and opportunities, minimize external threats, transform weaknesses into strengths and to take advantage of opportunities along with minimizing both internal weaknesses and external threats.

**Table 4. 16: SWOT analysis of Barguna Sadar Upazila based on socio-economic survey findings**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• The topographic profile with surrounding river provides a natural water collection setup in this Upazila</li> <li>• Availability of electricity in the urban area.</li> <li>• The agricultural economic base of this area opens the face of agro economic development of this Upazila</li> <li>• Availability of open space for future planned development in the urban and rural area of Barguna Upazila</li> </ul>	<p><b>Weakness</b></p> <ul style="list-style-type: none"> <li>• Lack of the formal drainage system and safe septic tank in paurashava area</li> <li>• Embankment height is not sufficient as per requirement</li> <li>• Water collection problem for the people of some union</li> <li>• The inadequacy of the transport network</li> <li>• Poor infrastructural facilities for waste disposal</li> <li>• Water logging during the rainy season</li> <li>• Lack of drinking water, transport mode, good educational institution</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• People are willing to give unbind land for road widening purpose</li> <li>• Improving road network connectivity within and outside the Upazila.</li> <li>• Prioritizing sewerage and sanitation system which would improve the living environmental quality of this Upazila.</li> <li>• Agro-based economic development can improve the life of rural people.</li> <li>• The dominance of Katcha structure indicates future planned development of this area.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• The frequent occurrence of a climatic disaster like cyclone which can change the socio-economic and natural setting of this area</li> <li>• Climate change effect especially temperature rising can degrade the living environmental quality of Barguna Sadar Upazila</li> <li>• Filling up of canals or other water bodies for purpose of development can disrupt the natural drainage system in the urban and rural area</li> </ul>

## 4.8 Social Condition of Patharghata Upazila

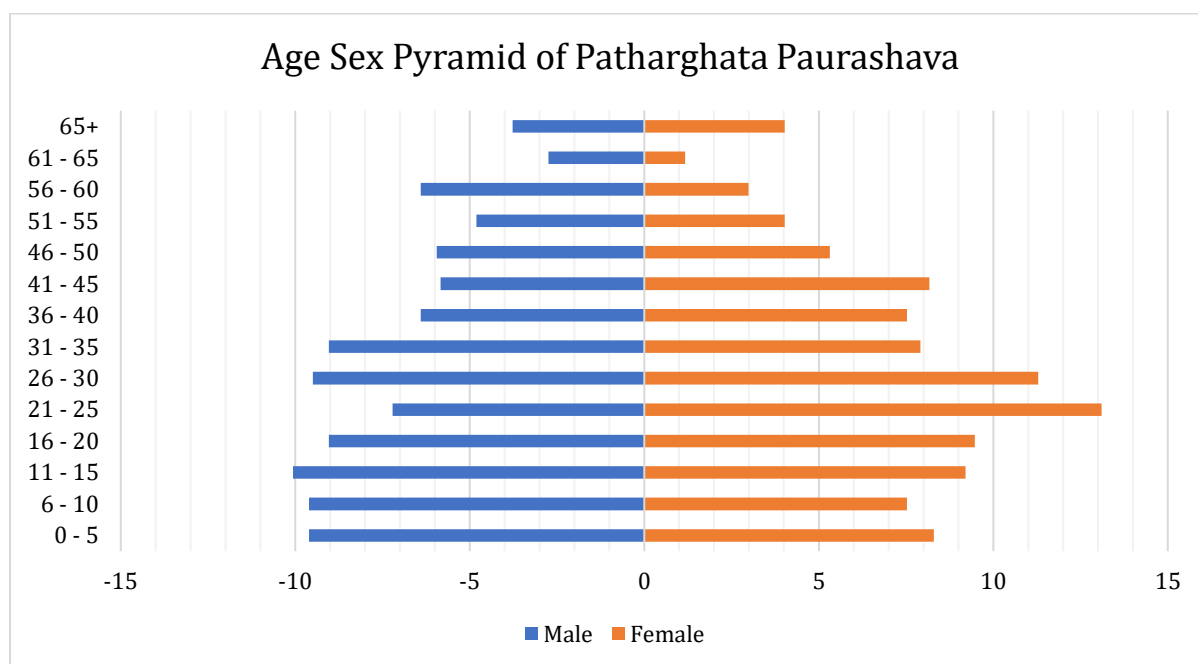
The social condition of the Patharghata Upazila have been analyzed from the socio-economic data collected from the field.

### 4.8.1 Age-Sex Structure of Patharghata Upazila

A population pyramid also called an "age-sex pyramid", is a graphical illustration that shows the distribution of various age groups in a population of an area. In addition, age and gender distribution are a key variable that indicates the possibilities of the natural growth of the population of the project area without migration (in or out). Population Pyramids is important for planning because it can also be used to speculate a population's future development

#### 4.8.1.1 Age-Sex Structure of Patharghata Paurashava

The age-sex pyramid (see figure 4.56) of Patharghata paurashava displays the distribution of a population in all age groups and in both sexes. The population pyramid of Patharghata paurashava is somewhat like a constrictive pyramid, with a slight constriction in its younger age groups. There is good life expectancy leading to a higher number of older people. The large base shows a high birth rate. Dependency rate in this area is also high because a large share of the population is under 20 years in both sex group. Working-age population has been found a good number within male and female but the percentage is higher in the case of female than the male population. Highest female population has been found in 21-25 cohort and the highest male population has been found in the 11-15 cohort. However, birth rate is higher in Patharghata Paurashava than the death rate.

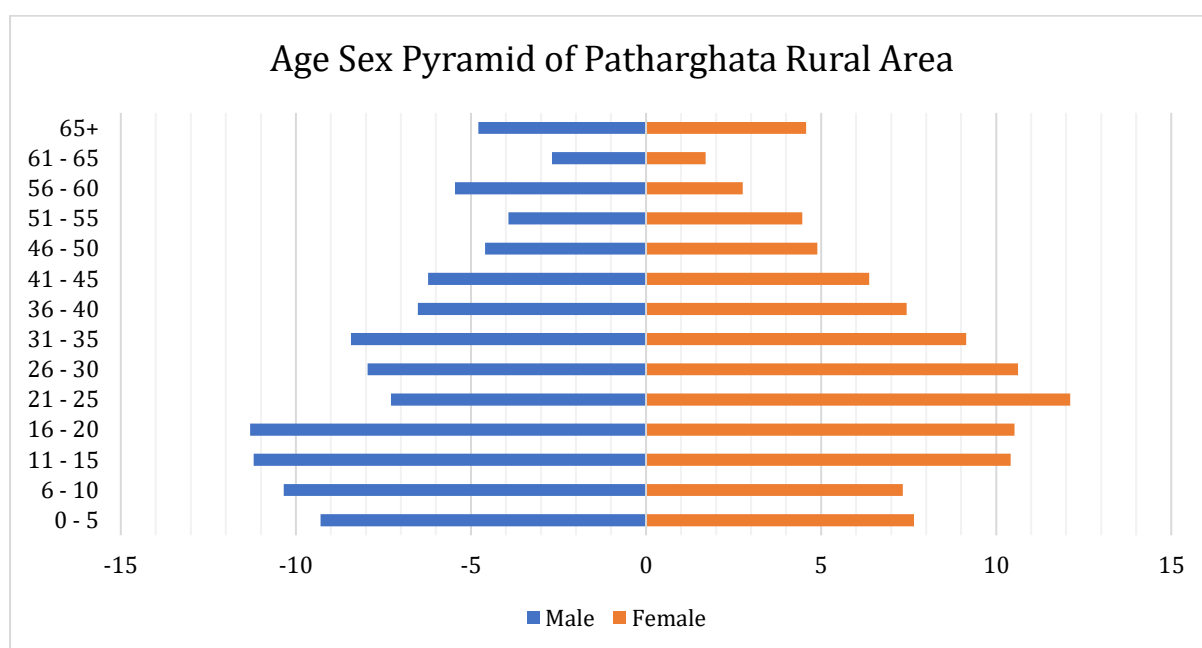


Source: Socio-economic Survey, 2018

**Figure 4. 56: Age Sex Pyramid of Patharghata Paurashava**

#### 4.8.1.2 Age-Sex Structure of Patharghata Rural Area

The age-sex pyramid (see figure 4.57) of Patharghata rural displays the distribution of a population in all age groups and in both sexes. The population pyramid of Patharghata rural area is somewhat like a constrictive and expansive pyramid, with a slight constriction in its younger age groups. There is good life expectancy leading to a higher number of older people. The large base shows a high birth rate. Dependency rate in this area is also high because a large share of the population is under 20 years in both sex group. Working-age population has been found a good number within male and female but the percentage is higher in the case of female than the male population. Highest female population has been found in 21-25 cohort and the highest male population has been found in 16-20 cohort. However, the birth rate is higher in Patharghata rural area than the death rate.



Source: Socio-economic Survey, 2018

**Figure 4. 57: Age Sex Pyramid of Patharghata Rural Area**



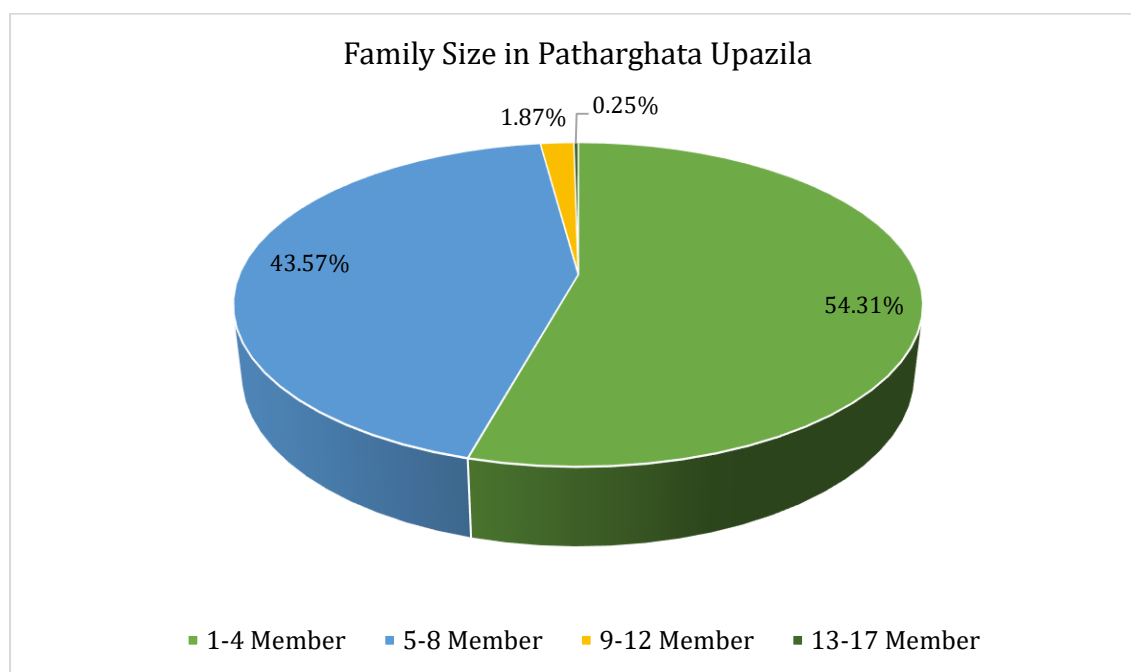
### 4.8.2 Family Type, Size and Religion

Most of the families in Patharghata Upazila are single and Muslim. Muslim families occupied 90.51% and the Hindu families occupy only 9.49% in Patharghata Upazila. So, in this area, the characteristics and cultures of the Muslim single families have witnessed. The analysis of family size in Patharghata Upazila shows that 54.31% families contain 1-4 members, 43.57% families contain 5-8 members, 1.87% families contain 9-12 family members and only 0.25% families contain 13-17 members. Spatial distribution of religion of the people of Patharghata Upazila has been shown in figure 4.59.

**Table 4. 17: Family type and religion of the people of Patharghata Upazila**

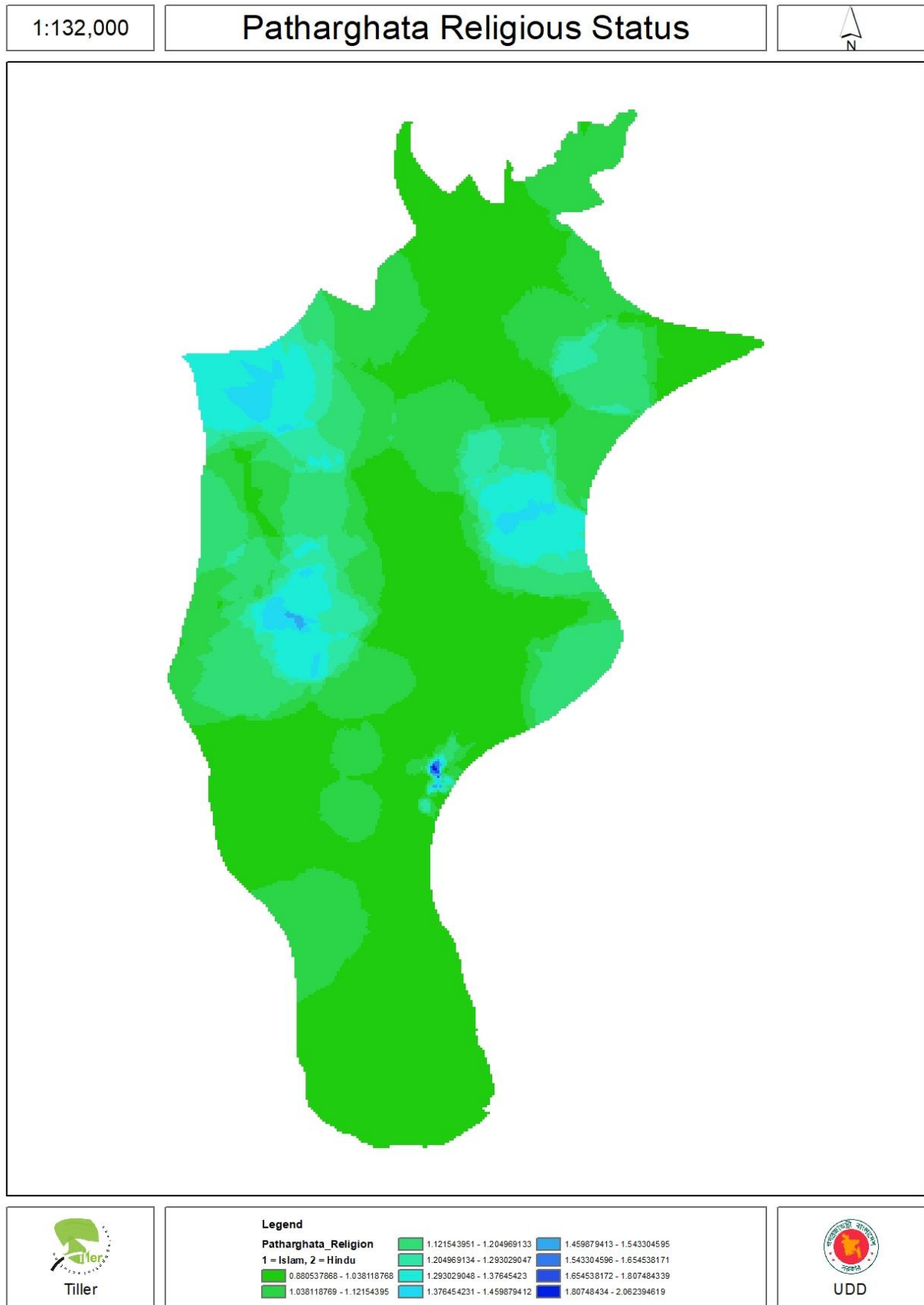
<b>Family Type</b>	Single Family	88.51%
	Joint Family	11.49 %
<b>Religion</b>	Muslim	90.51 %
	Hindu	9.49 %

Source: Socio-economic Survey, 2018



Source: Socio-economic Survey, 2018

**Figure 4. 58: Family size in Patharghata Upazila**



Source: Socio-economic Survey, 2018

**Figure 4. 59: Spatial distribution of religion in Patharghata Upazila**

### 4.8.3 Housing Status

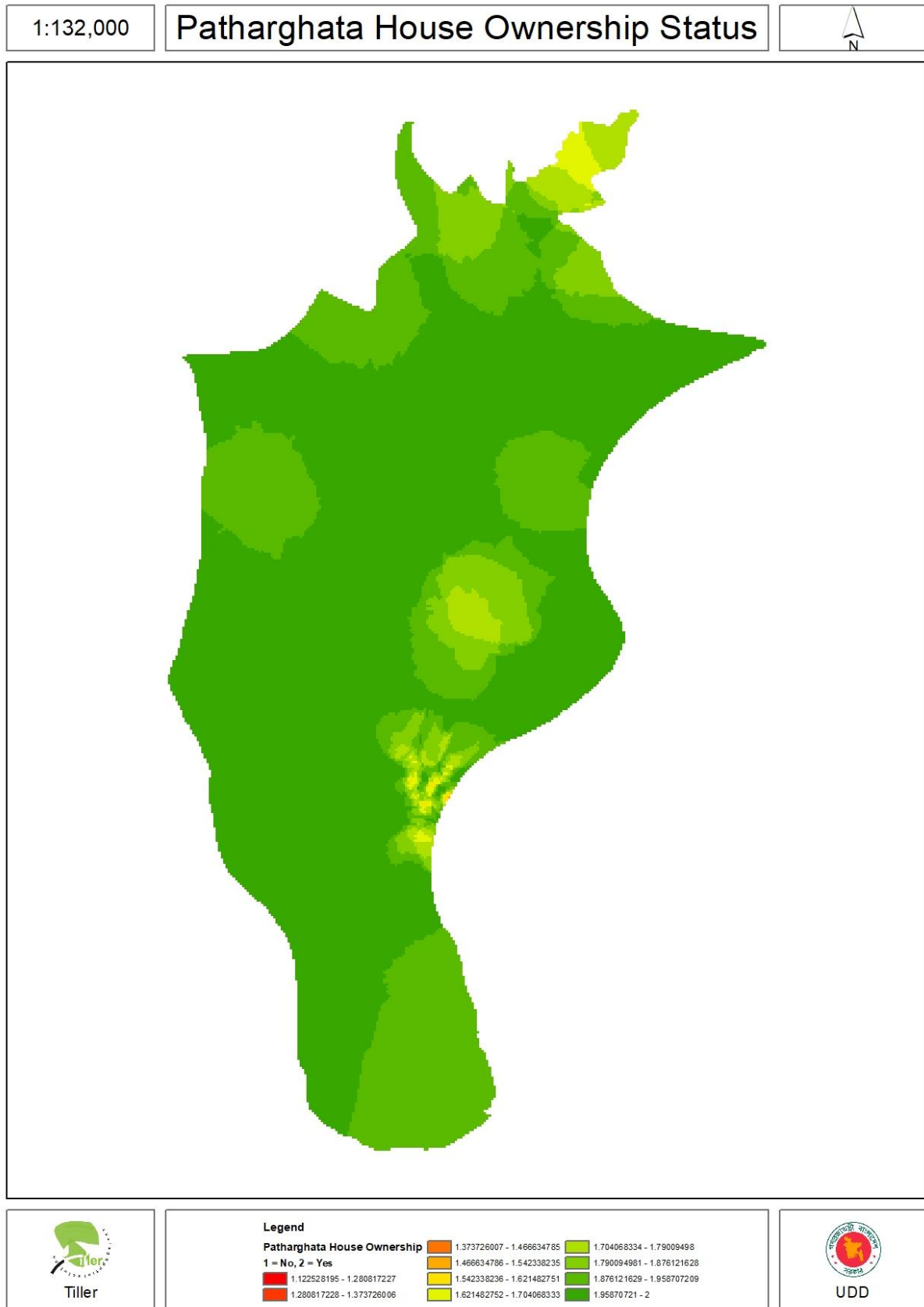
Different features on the housing status of Patharghata Upazila have been explained in the following sub-sections.

#### 4.8.3.1 Housing Ownership

Most of the people in Patharghata Upazila have their own house built on their own land. The people who live in their own house occupies 91.26% and the people who live in rented house occupies only 8.74%. Most of the people who have own house have been found in Patharghata Paurashava which occupies 40.20% of the total house.

**Table 4. 18: House ownership status of Patharghata Upazila**

Name of Union/Paurashava	Rented House	Own House	Total House
Char Duanti	0.12%	8.36%	8.49%
Kakchira	0.37%	8.11%	8.49%
Kalmegha	0.50%	7.87%	8.36%
Kanthaltali	0.00%	5.74%	5.74%
Nachna Para	0.12%	3.62%	3.75%
Patharghata Paurashava	6.74%	40.20%	46.94%
Patharghata Union	0.12%	11.99%	12.11%
Raihanpur	0.75%	5.37%	6.12%
<b>Total</b>	<b>8.74%</b>	<b>91.26%</b>	<b>100.00%</b>

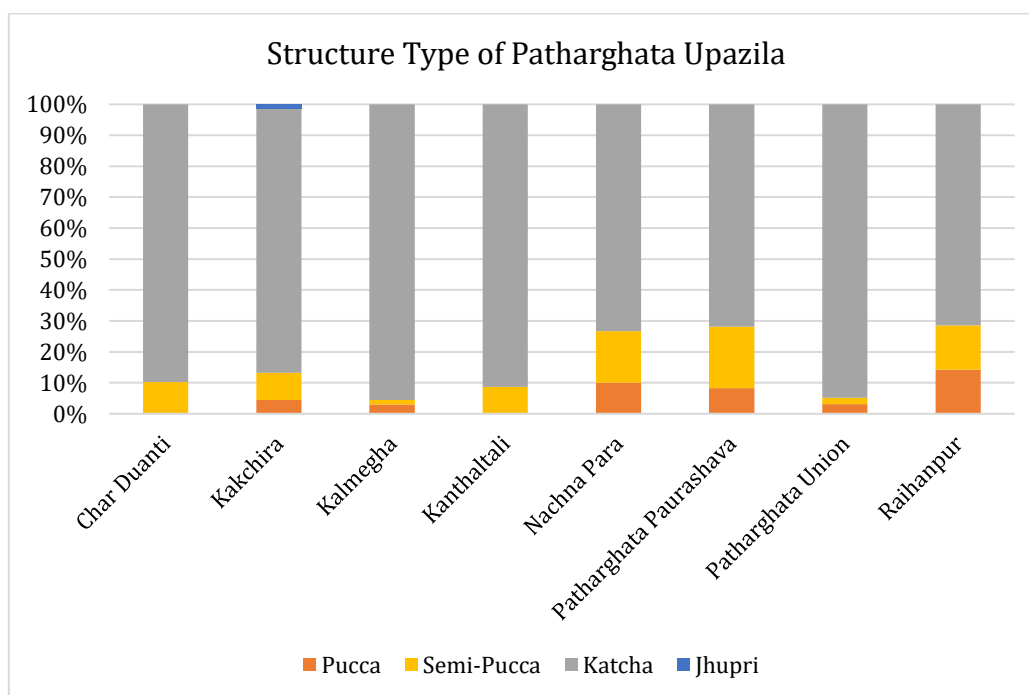


Source: Socio-economic Survey, 2018

**Figure 4. 60: Spatial distribution of house ownership in Patharghata Upazila**

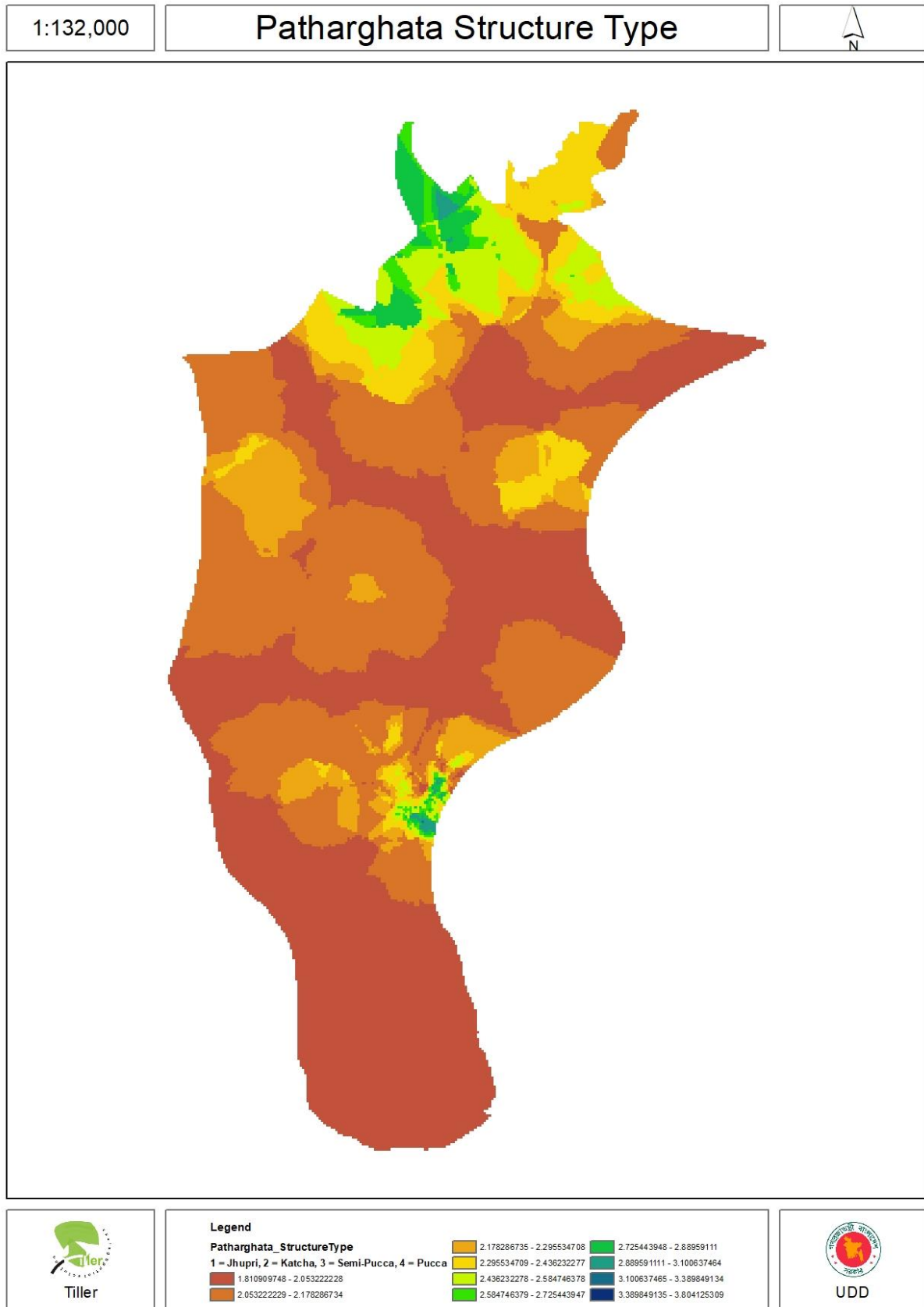
### 4.8.3.2 Type of Structure

In Patharghata Upazila most of the structures are katcha in type and the katcha structure occupies the 80.40% of total structure in this Upazila. The semi-pucca structure occupies 13.36% of the total structure which is the second highest type of structure in Patharghata Upazila. The pucca structure in this Upazila occupies only 6.12 percent of the total structure. The union/Paurashava wise distribution of different structure according to the structure type have been shown in the figure: 4.61. This figure presents the structure type within each union. In Patharghata Paurashava area there is 8.24% pucca structure, 19.95% semi-pucca structure and 71.81% katcha structure. The highest pucca building has been found Raihanpur union and second highest pucca building has been found in Nachna Para union. However, there is no any pucca building in Char Duanti and Kanthaltali union. Only 1.47% jhupri structure has been found in Kakchira union.



Source: Socio-economic Survey, 2018

**Figure 4. 61: Structure type in Patharghata Upazila**

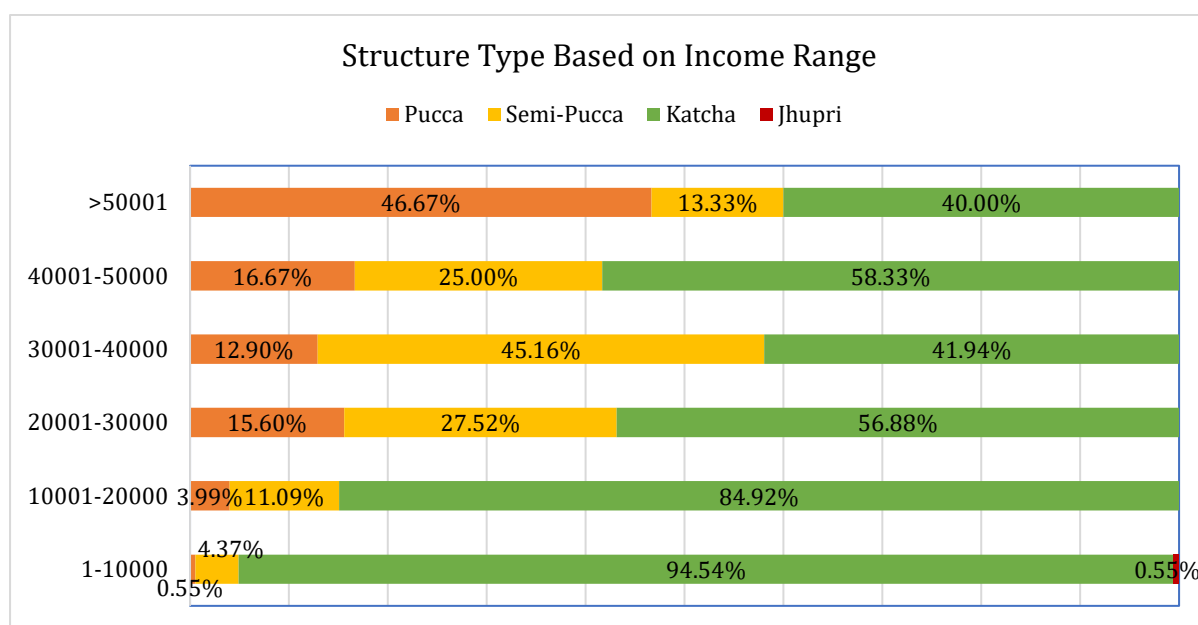


Source: Socio-economic Survey, 2018

**Figure 4. 62: Spatial distribution of structure type in Patharghata Upazila**

### 4.8.3.3 Structure Type based on Income Range

In Patharghata Upazila the structure type of the household varies with household income. People having a low income are mostly live in katcha structure. This situation changes with the increase in household income that means with the increase of income range the living standard increase. The households which have income range more than BDT 50001, 46.67% are living in pucca structure and 13.33% are living in semi-pucca structure and 40% households are living in katcha structures. However, for all income range structure type is dominated by katcha structure. The height katcha structure (94.54%) has been found for the income range BDT 1-10000 and the second height katcha structure (84.92%) has been found for income range BDT 10001-20000. The highest semi-pucca structure has been found for income range BDT 30001-40000. Households with the income range BDT 20001-30000 and BDT 40001-50000 are living in semi-pucca structure 27.52% and 25% respectively.



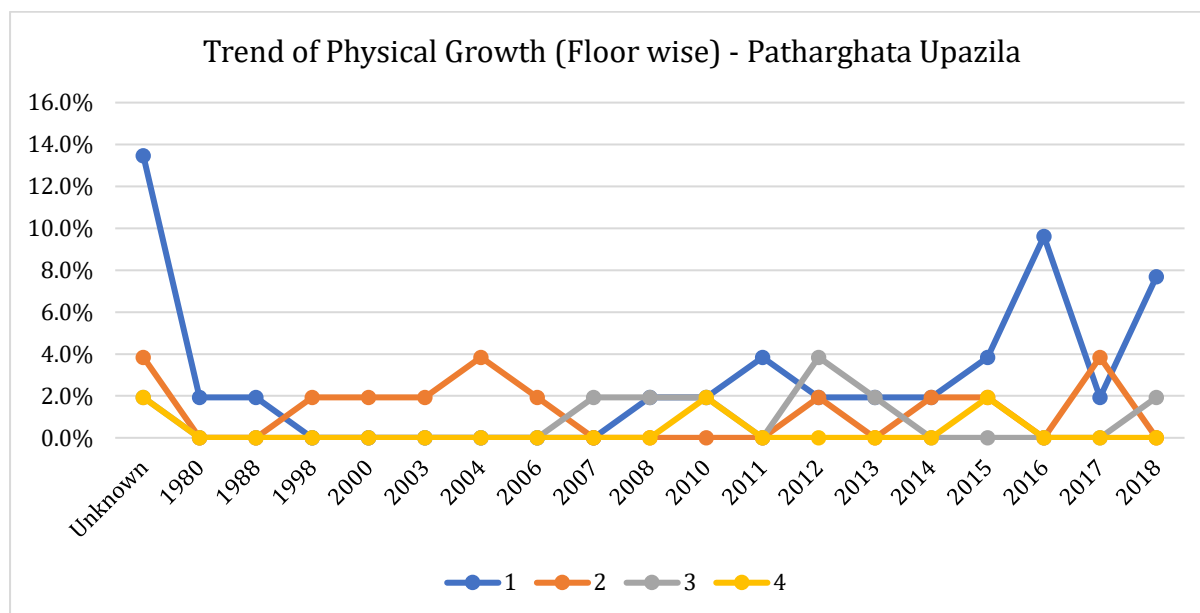
Source: Socio-economic Survey, 2018

**Figure 4. 63: Percentage of structure type base on income range**

### 4.8.3.4 Physical Growth Trend

In recent years, the construction of the different type of building structures increase as the population of the Patharghata Upazila increase. The following figure 4.55 presents the trend of physical growth according to the floor of the structures. The growth of 1 story structures was high before 1980 and they were further started to grow in 2007 but in 2016 the growth of this structure was highest within the previous 36 years. Though the growth of 1 story structure was highest in 2016 but it decreased in 2017 and further increased in 2018. The growth trend of 2 storied structure indicates growth from 1988 to 2004 but after 2004 it was started to decrease and after several time ups and downs it experienced further growth in 2017. The growth of 3 storied structure was highest in 2012 and the growth trend shows further growth after 2017. The growth of 4 storied

structure was observed in 2010 and 2015 but after 2015 there was no further growth of this type of structure.



Source: Socio-economic Survey, 2018

**Figure 4. 64: Floor wise physical growth trend in Patharghata Upazila**

#### 4.8.3.5 Plinth Height of Structure Type

According to the structure type the average plinth height is almost same in Patharghata Upazila. In paurashava area, average plinth height of pucca houses is higher than semi-pucca and katcha houses. In rural area, the plinth height is quite similar for pucca and katcha structure and higher than the urban area because in rural are during rainy season water level rise than the normal time.

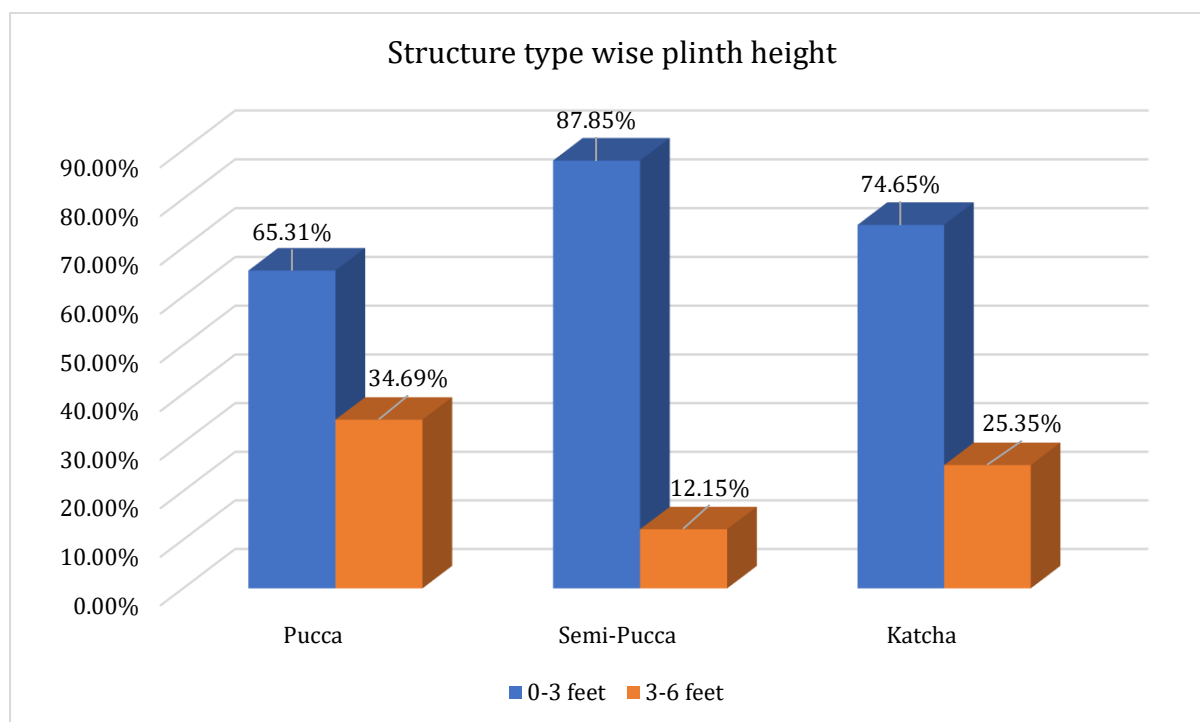
**Table 4. 19: Plinth height of different structure type**

Name of Area	Plinth height (ft.)		
	Pucca	Semi-Pucca	Katcha
Urban	2.06	1.84	1.74
Rural	2.33	1.94	2.27

Source: Socio-economic Survey, 2018

In case of pucca structure about two third (65.31%) of the structures have 0-3 feet plinth height and another 34.69% structures have 3-6 feet plinth height. Most of the semi-pucca structures (87.85%) have plinth height between 0-3 feet and only 12.15% structures have plinth height 3-6 feet. The Patharghata Upazila has 0-3 feet plinth height for 74.65% katcha structure and 3-6 feet plinth height for 25.35% katcha structure.





Source: Socio-economic Survey, 2018

**Figure 4. 65: Structure type wise plinth height in Patharghata Upazila**

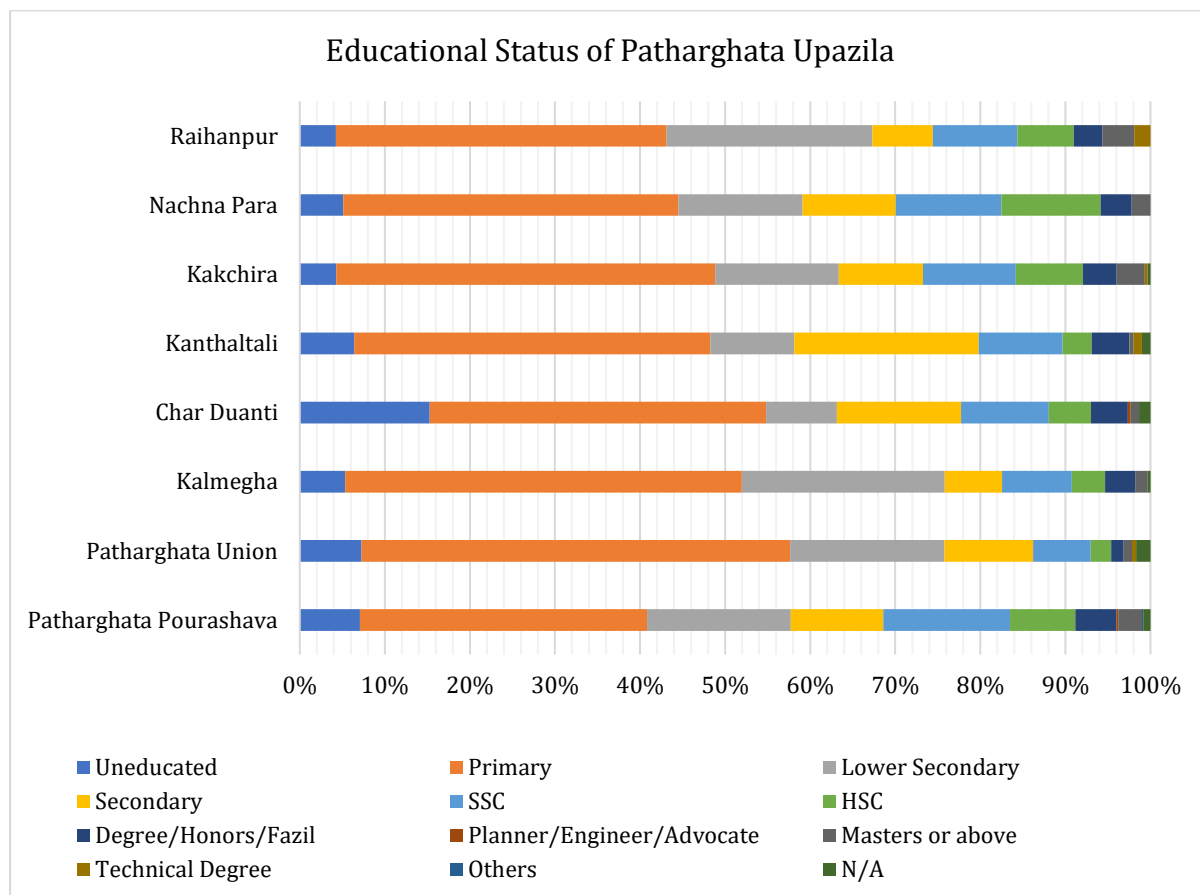
#### 4.8.4 Housing for Disadvantaged Group

Housing condition for disadvantage group Patharghata Upazila is not good and there is lack of initiatives for the housing for disadvantaged group by the municipal authority in urban area. There is mismanagement regarding housing for disadvantage group and the people of this type are living in temporary house in embankment slope. Though this area is highly vulnerable for climatic disaster but there is limited arrangement for the disadvantaged group.

#### 4.8.5 Educational Status

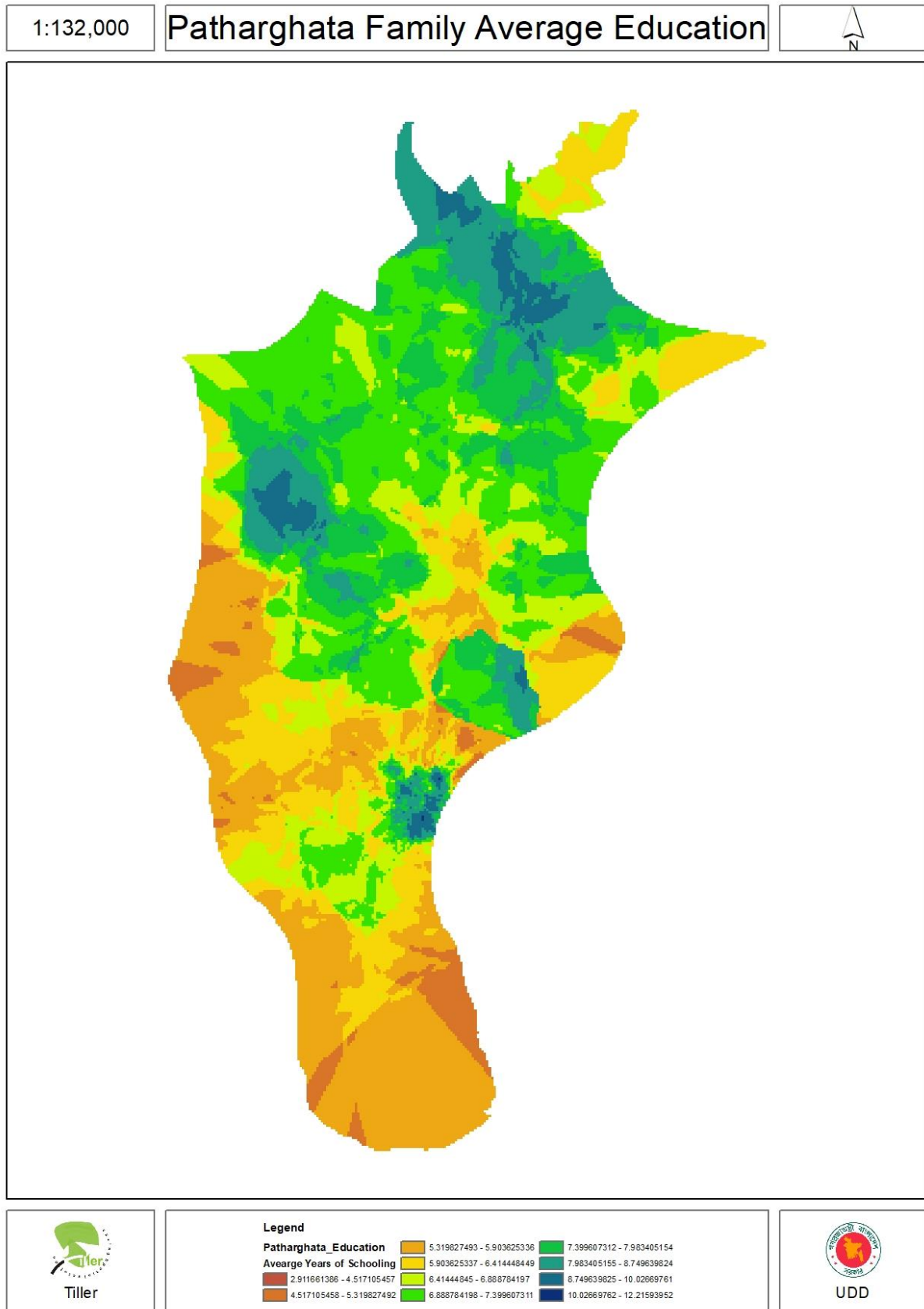
The educational status of the Patharghata Upazila dominated by primary education. In this Upazila average, 41.88% of people have primary education. The Patharghata union has the highest (50.4%) and the Patharghata paurashava has the lowest (33.7%) primary educated population. This Upazila contains average 6.88% illiterate people but the Char Duanti union has the highest (15.3%) illiterate people within all unions of Patharghata Upazila. In Patharghata Upazila 10.4% population have Secondary education in average but the highest 14.9% secondary educated population have been found in Patharghata paurashava and the lowest 6.8% secondary educated population have been found in Patharghata union. The scenario of Higher Secondary education is different than the primary and secondary education because the highest 11.7% higher secondary educated population have been found in Nachna para union. In this Upazila average 3.69%, people

have Degree/Honors/Fazil education. Only 0.5% population have planning/engineering degree in the Patharghata Upazila. Moreover, in this Upazila, 2% population have master's degree and 0.48% population have a technical degree.



Source: Socio-economic Survey, 2018

**Figure 4. 66: Educational Status of Patharghata Upazila**

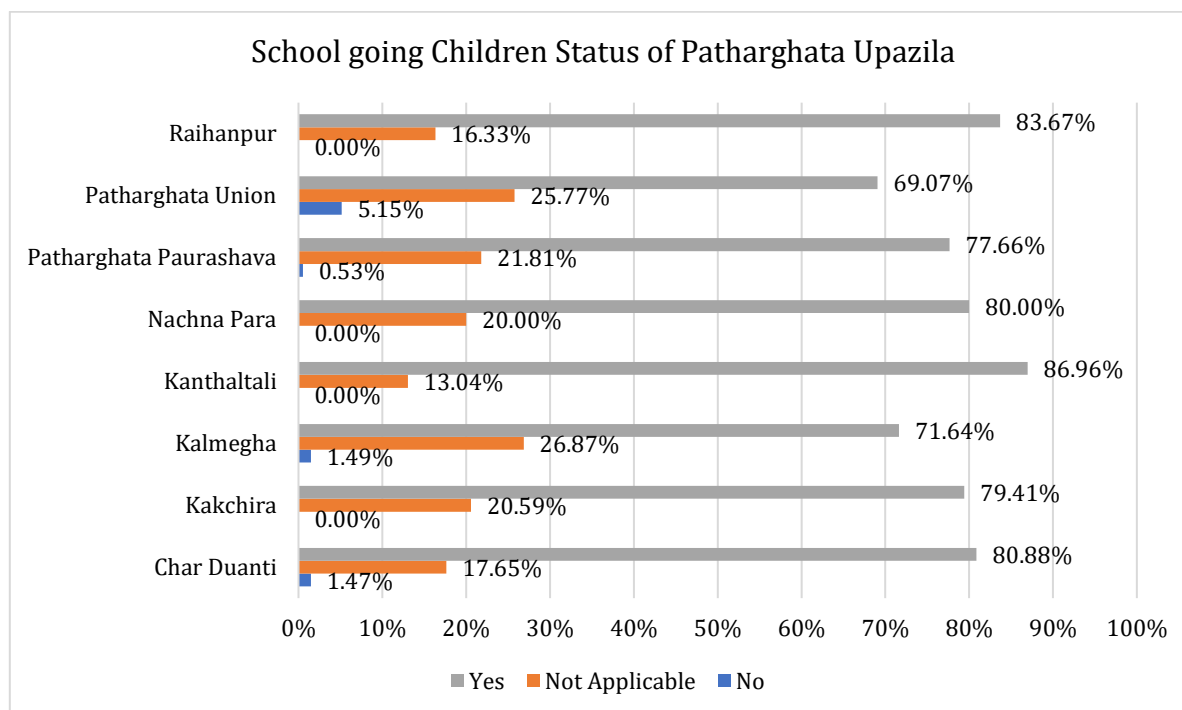


Source: Socio-economic Survey, 2018

**Figure 4. 67: Spatial distribution of educational status in Patharghata Upazila**

#### 4.8.5.1 School Going Children Status

School going children status of Patharghata Upazila indicates that highest (86.96%) children are going to school in Kanthaltali union and lowest (69.07%) children are going to school in Patharghata union. In the remaining union school going children's percentage is around 80%. The percentage of children who are not going to school is very low in this Upazila but in Patharghata union 5.15% of children are not going to school.

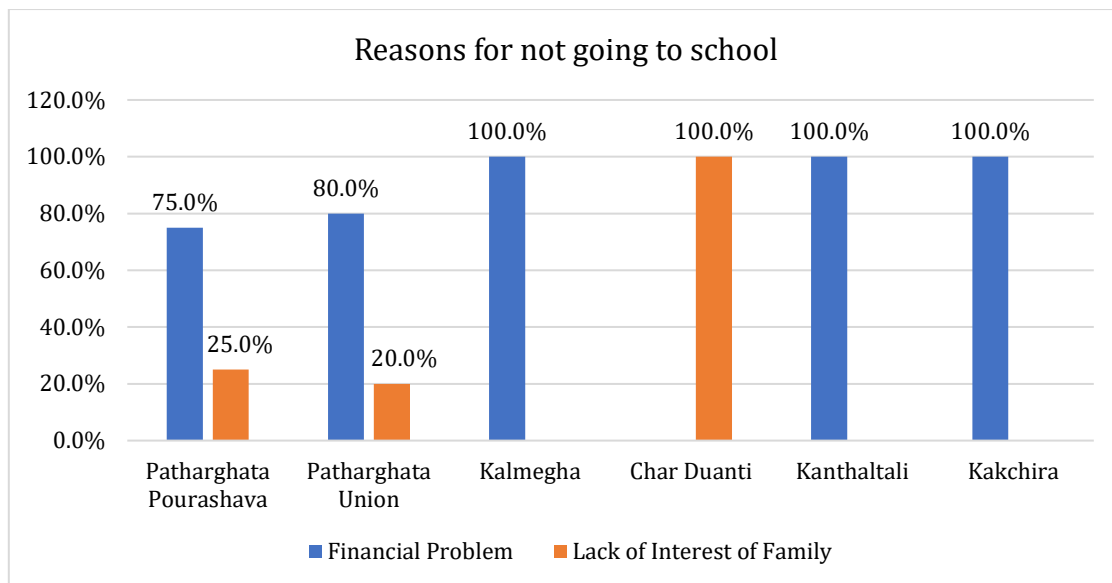


Source: Socio-economic Survey, 2018

**Figure 4. 68: Percentage of school going children in Patharghata Upazila**

#### 4.8.5.2 Reason for not Going to School

In Patharghata paurashava 75% of children don't go to school for education for the financial problem and another 25% of children don't go to school for lack of interest in the family. In Patharghata union 80% of children don't go to school for education for the financial problem and another 20% of children don't go to school for lack of interest in the family. In Char Duanti union the children who don't go to school, 100% of them don't go for lack of interest of family but in Kalmegha, Kanthaltali and Kakchira union 100% of them don't go for financial problem.

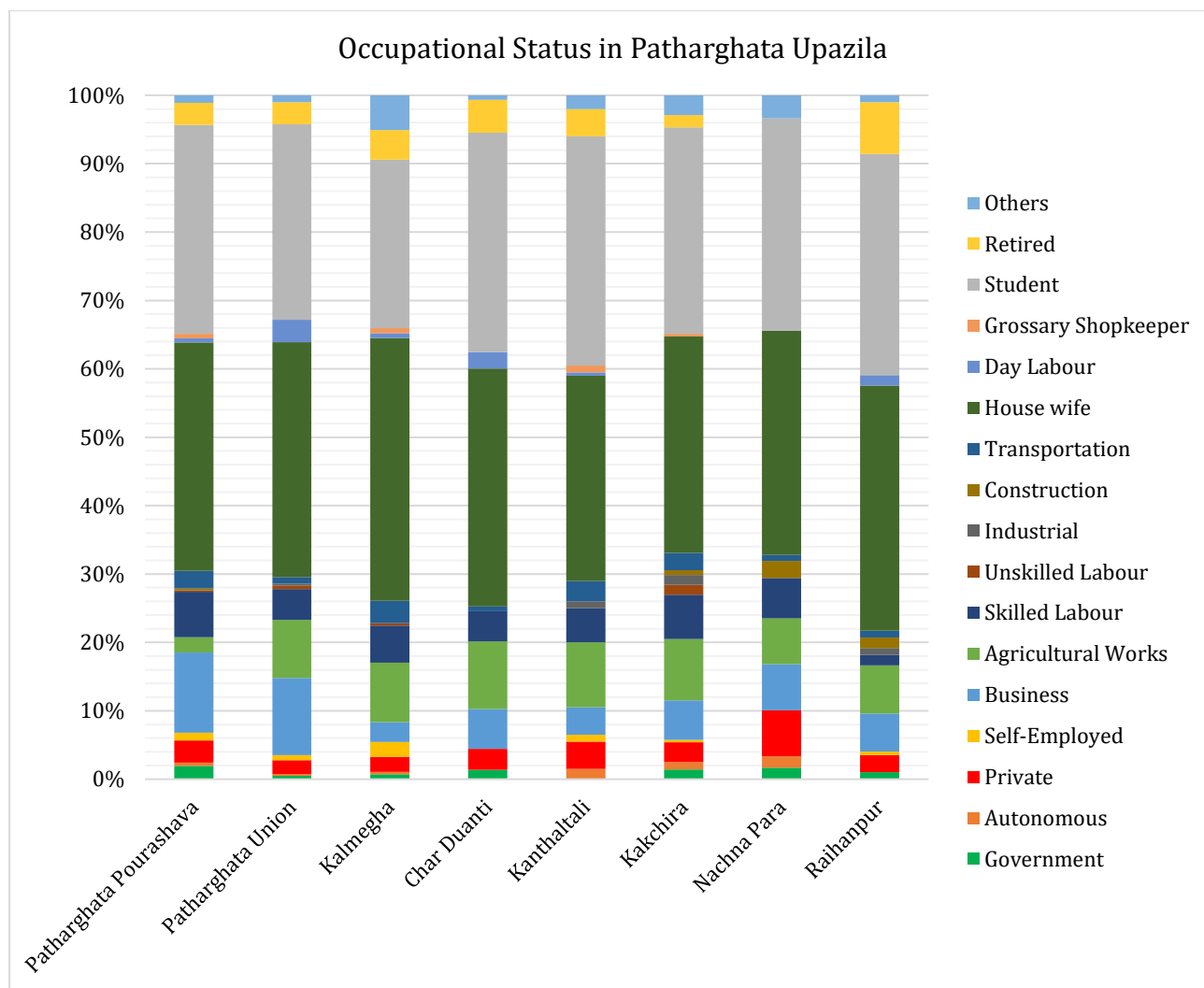


Source: Socio-economic Survey, 2018

**Figure 4. 69: Reason for not going to school in Patharghata Upazila**

#### 4.8.6 Occupational Status

The occupational pattern of the Patharghata Upazila mainly reflects the dominance of rural characteristics. It is found that a maximum percentage (31.84) of the population is a housewife. Education is another main occupation of the people of Patharghata Upazila which occupies 28.49%. Agriculture is the third highest occupation of the people of Patharghata Upazila. Service in government organizations is the occupation of only 1% population and service in Non-Governmental organizations is the occupation of 3.09% population. Engagement of population in the private sector is higher than the population engaged in government service. There is a significant number of people employed as skilled labor which accounts for about 4.68%, while 0.3% are employed as unskilled labor. Business is the fourth highest occupation of the people of Patharghata Upazila which occupies 6.30% population but only 0.48% population of this Upazila is engaged in industrial activities. Except for the aforementioned occupations 0.56% population is working in a construction site, 1.75% population is working in the transportation sector and 1.08% population is working as day labor. The difference between paurashava and rural area in case of occupational status is that, in the urban area agricultural workers are lower than rural area and government employer and businessmen are higher than the rural area.



Source: Socio-economic Survey, 2018

**Figure 4. 70: Occupational status of Patharghata Upazila**

#### 4.8.7 Migration Information

According to the definition of migration, it means movement of persons from one State to another, or within their own country of residence, for the purpose of employment. The migration status of the Patharghata upazila is mentioned in the following sub-sections.

##### 4.8.7.1 Birth Place Status

The Birth Place status of Patharghata Upazila indicates that 91.39% of total population is native and another 8.61% is migrated population. Except Kanthaltali union all other union and Patharghata paurashava contain migrated population. In Patharghata paurashava 15.16% of total paurashava population are migrated population.

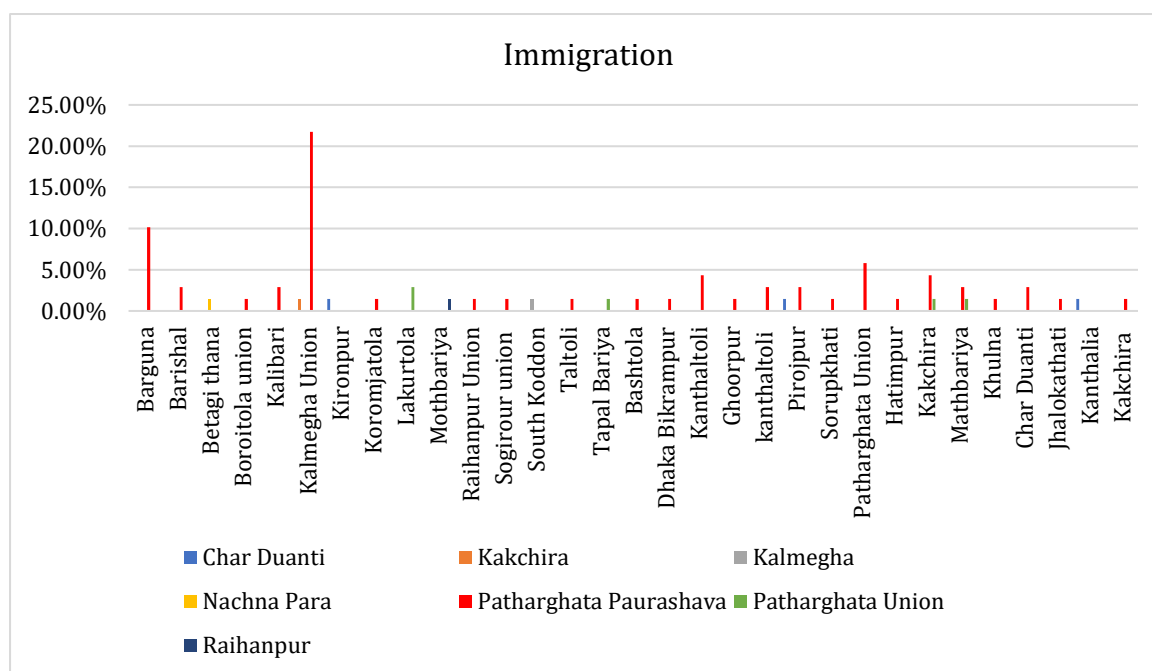
**Table 4. 20: Birth place status in Patharghata Upazila**

Union/Paurashava	Migrated	Birth Place
Char Duanti	4.41%	95.59%
Kakchira	1.47%	98.53%
Kalmegha	1.49%	98.51%
Kanthaltali	-	100.0%
Nachna Para	3.33%	96.67%
Patharghata Paurashava	15.16%	84.84%
Patharghata Union	5.15%	94.85%
Raihanpur	2.04%	97.96%
<b>Total</b>	<b>8.61%</b>	<b>91.39%</b>

Source: Socio-economic Survey, 2018

#### 4.8.7.2 Immigration Status

The immigration status of Patharghata Upazila shows that the scenario of immigration is better in Patharghata paurashava than the other unions of this Upazila. The immigrants of the Patharghata paurashava are from Barguna, Ghoorpur, Bashtola, Barguna, Barishal, Boroitola, Chordowani, Kalmegha, Kanthaltoli Union, Khulna, Lakurtola, Mothbaria, and other areas. The immigrants of Patharghata union are from Kakchira, Lakurtola, Mothbaria and Tapal Bariya. The immigrants of Char Duanti union are from Mathbariya, and Pirojpur. There are some immigrants in Kakchira union and they are from kalmegha. In Nachna Para and Raihanpur union, the immigrants are from Betagi Thana of Barguna district and Mathbaria Thana of Pirojpur district respectively.

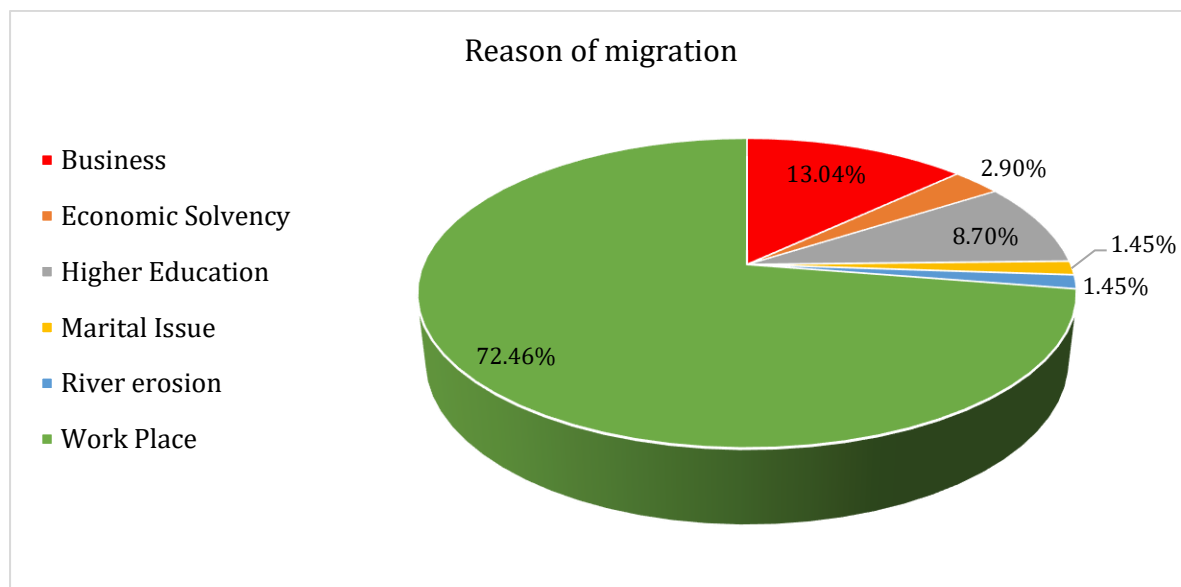


Source: Socio-economic Survey, 2018

**Figure 4. 71: Immigration Status of Patharghata Upazila**

### 4.8.7.3 Reasons for Migration

Immigration is mostly occurring in almost all union except Kanthaltali union of this Upazila. In Patharghata Upazila, immigration is happening mostly because of job purposes. About 72.46 percent of people have migrated in search of a better job opportunity. People also have come to the area for business purpose (13.04%), higher education (8.70%), marital issue (1.45%), economic solvency (2.90%) and river erosion (1.45%).



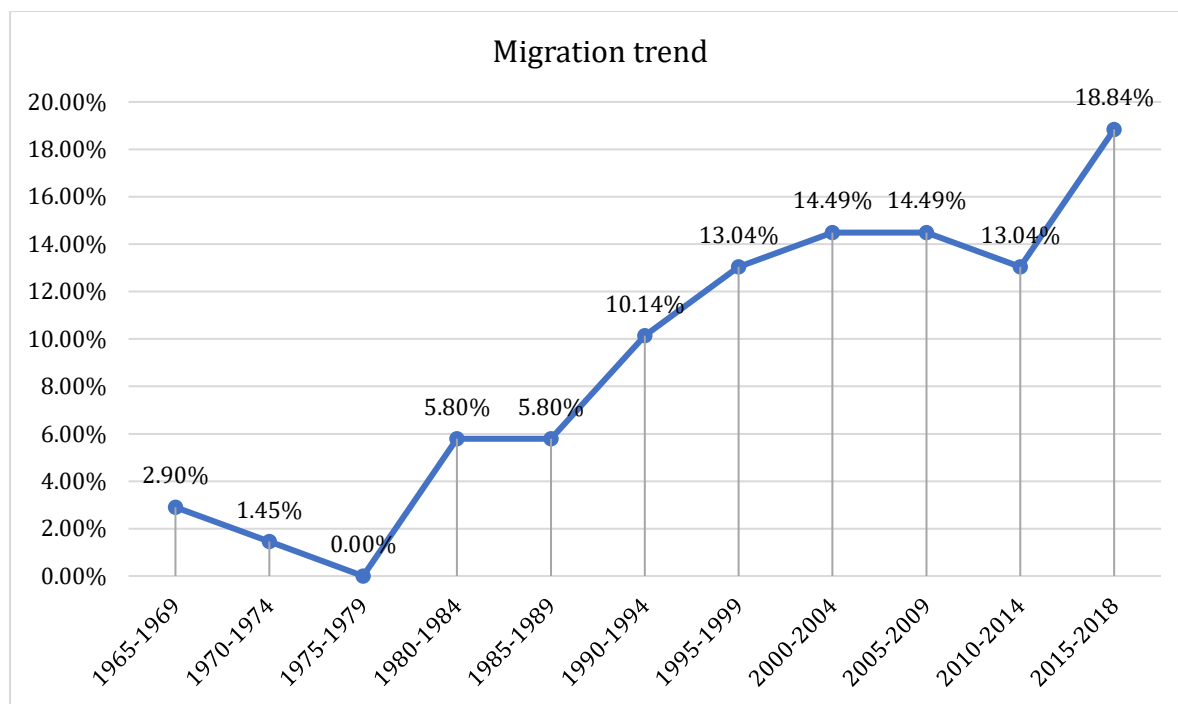
Source: Socio-economic Survey, 2018

**Figure 4. 72: Reason for migration in Patharghata Upazila**

### 4.8.7.4 Migration Year Trend

The following figure 4.73 present the migration trend over the years in Patharghata Upazila from 1965 to 2018. The migration trend shows that the migration trend started to increase after 1979 and it was continued till 2009 but after 2009 it was started to decrease and continued till 2014. The highest migration has been seen in 2018 in Patharghata Upazila.



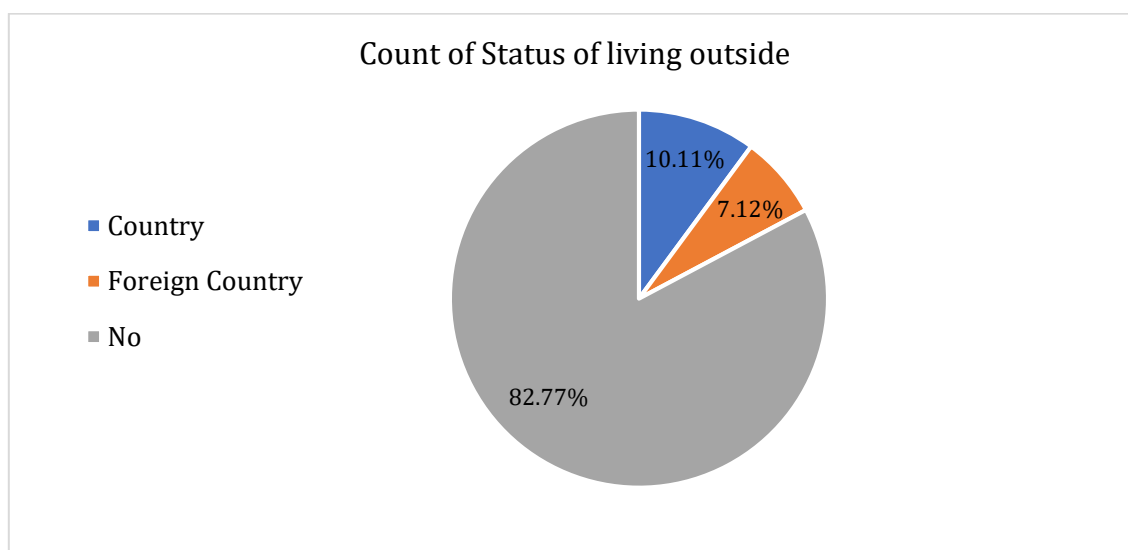


Source: Socio-economic Survey, 2018

**Figure 4. 73: Migration trend over the years in Patharghata Upazila**

#### 4.8.7.5 Family Member Living Outside

In Patharghata Upazila, people are living outside for multiple purposes. The percentage of people living outside of the Upazila is not so high (17.23%). The people who are living outside the Upazila most of them are living in foreign country (10.11%) and another 7.12% are living in other place of Bangladesh. People mostly live in different countries for better job purposes.

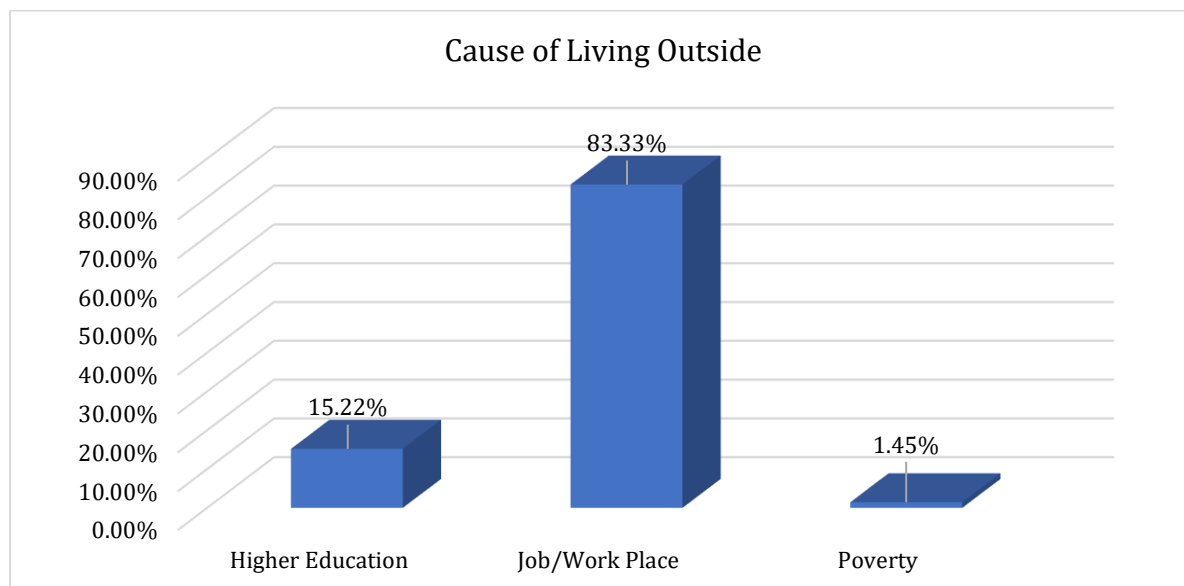


Source: Socio-economic Survey, 2018

**Figure 4. 74: Percentage of the family member living outside**

#### 4.8.7.6 Causes of Living Outside

The main reason for living outside for the people of Patharghata Upazila is for economic progress. Around 84% of people are living outside of the Upazila for a better job opportunity. Also, a good number of people (15.22%) live outside for better educational purpose. The poverty acts as push factor for only 1.45% people to live outside.

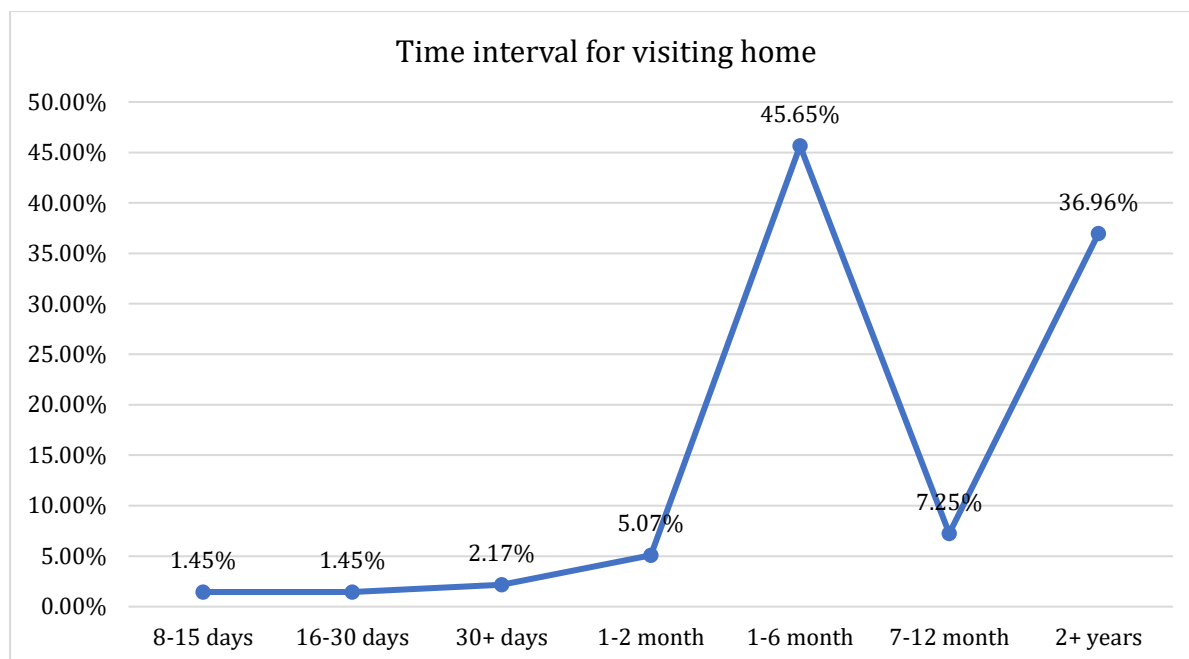


Source: Socio-economic Survey, 2018

**Figure 4. 75: Percentage of the causes of living outside**

#### 4.8.7.7 Time Interval of Visiting Home

In Patharghata Upazila only 17.23% people are living outside. The highest 45.65% are visiting their home at 1 to 6 months' time interval. The 36.96% migrants come to their house more than 2 years interval. Others frequently visit their houses just after 8-15 days or 16-30 days and up to 1-2-month interval.

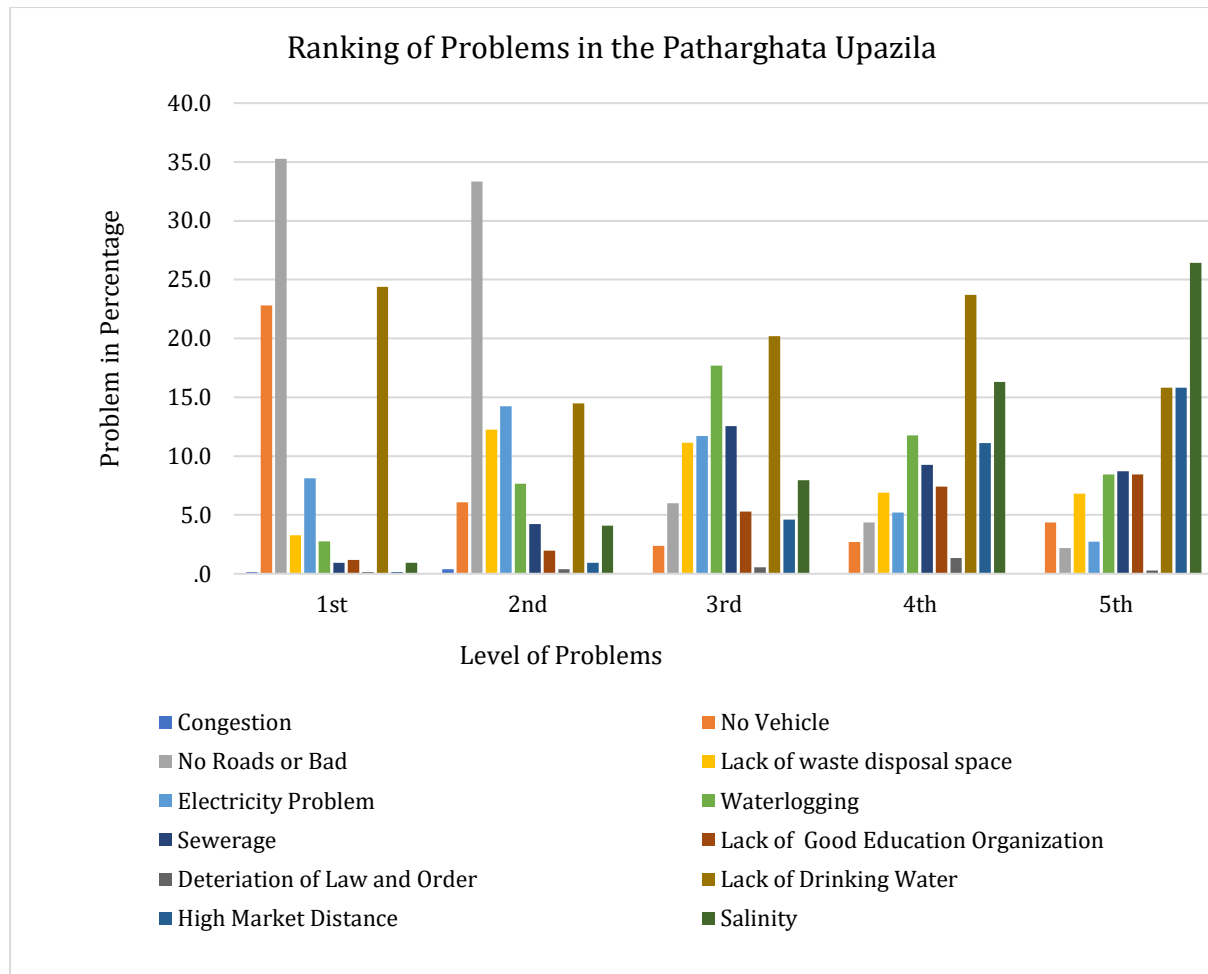


Source: Socio-economic Survey, 2018

**Figure 4. 76: Percentage of the frequency of visiting home**

#### 4.8.8 Ranking of Problems

The ultimate purpose of socio-economic and other related survey in Patharghata Upazila is to prepare a comprehensive plan based on the existing situation and considering future growth. As problem identification is one of the major tasks for preparing a plan, so problems in this project area have been ranked for the purpose of equitable planning interventions. In this Upazila, 35.3% people recognize the absence of adequate road or bad condition of the road as their first problem whereas 22.8% people consider the availability of vehicle as their 1<sup>st</sup> problem and 24.4% people consider lack of drinking water as their 1<sup>st</sup> problem. Without these three problems, some people mention lack of waste disposal place, electricity problem, water logging, lack of good educational institution and salinity as their main problem. Lack of road or bad condition has been considered as the second main problem by 33.3% people. Lack of waste disposal place, electricity problem and lack of drinking water have been identified as a 2<sup>nd</sup> problem by 12 to more than 14% of people in this area. The 3<sup>rd</sup> main problem has been identified by most of the local people is lack of drinking water. The 4<sup>th</sup> main problem is the salinity in this area.



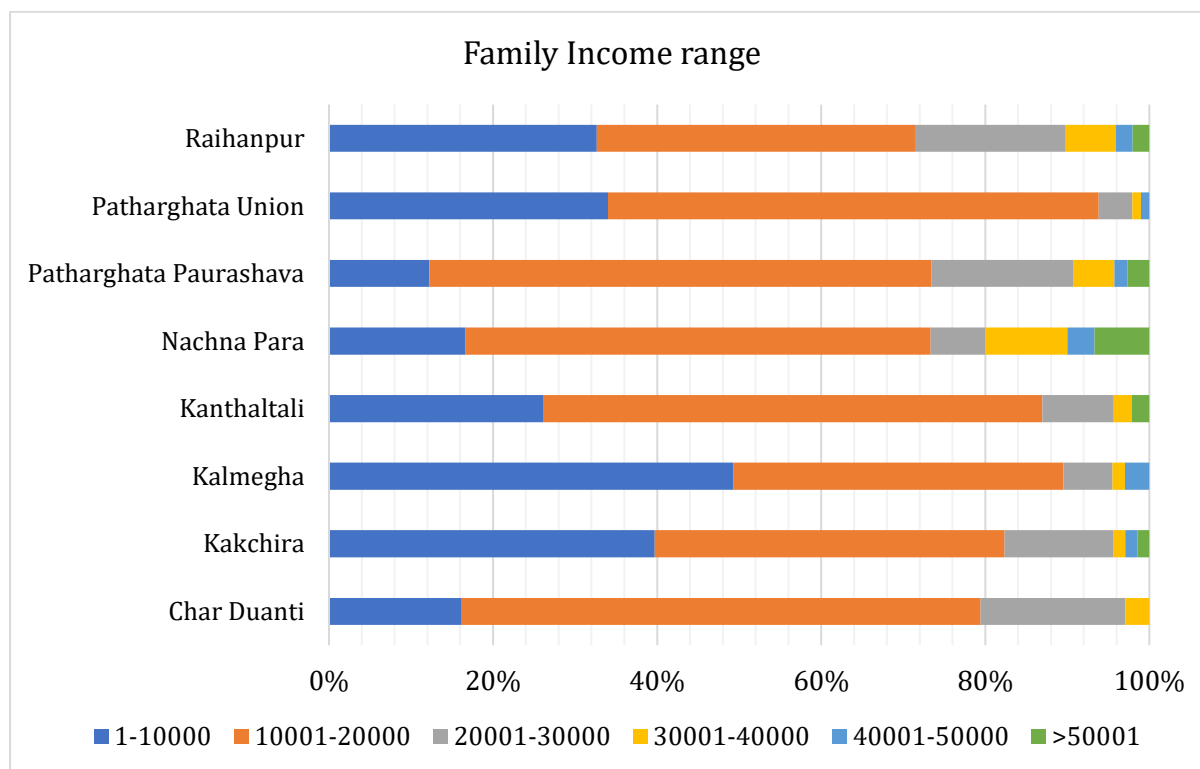
Source: Socio-economic Survey, 2018

**Figure 4. 77: Ranking of existing problems in Patharghata Upazila**

## 4.9 Economic Condition of Patharghata Upazila

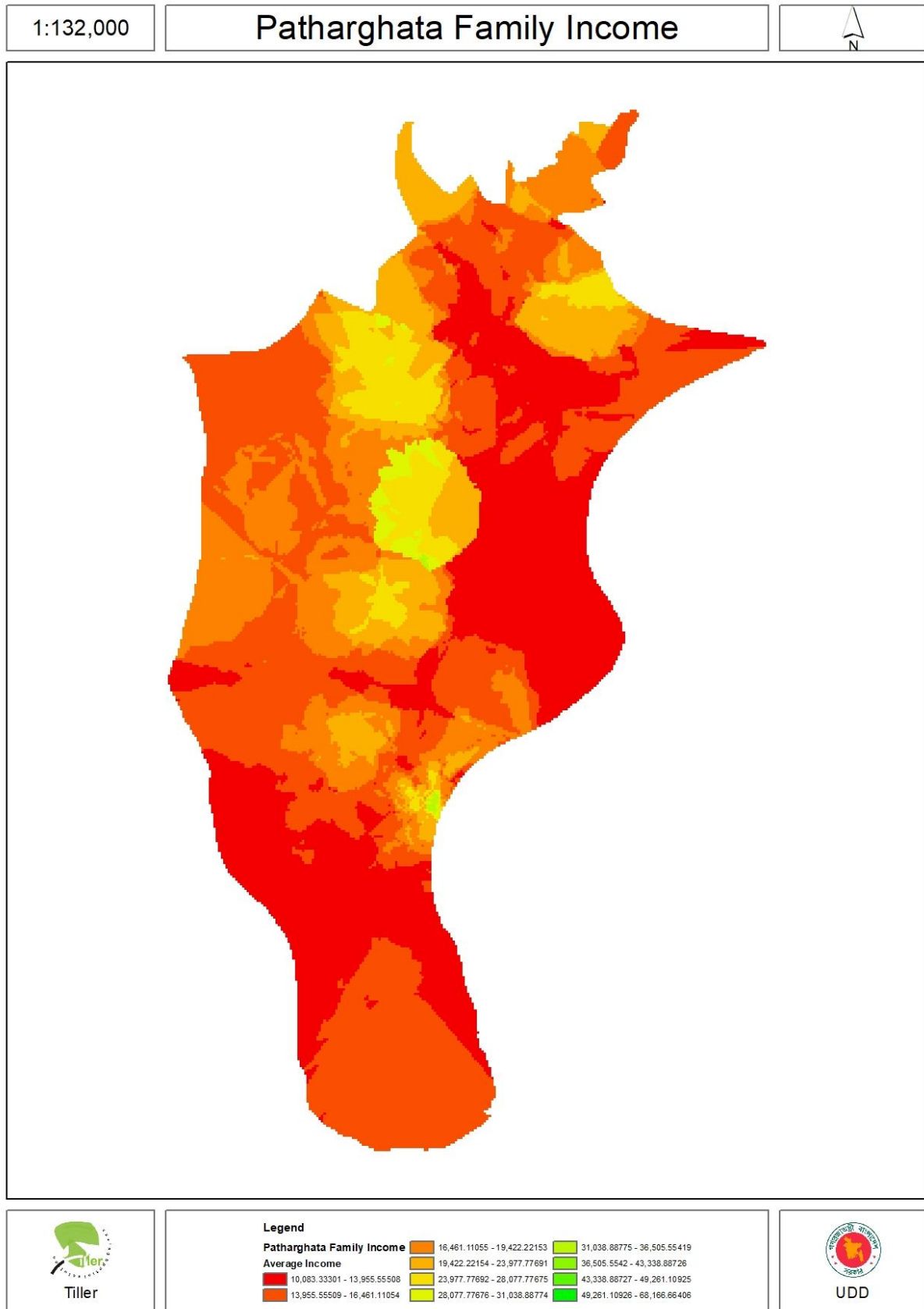
### 4.9.1 Family Income

In Patharghata Upazila, total family income varies among different unions. In paurashava area, 12.23% household earns BDT 1-10000 and 61.17% household earns BDT 10001-20000. Without this 17.29% household earns BDT 20001-30000, 5.05% household earns BDT 30001-40000, 1.60% household earns BDT 40001-50000 and only 2.66% household earns more than BDT 50000. In the rural area of Patharghata Upazila, most of the household income fall in between the range BDT 1-10000 and BDT 10001-20000 but the household scenario is not the same for all unions. Among all unions, Kalmegha union has highest 49.25% household within the income range BDT 1-10000 and Char Duanti union has highest 63.24% household within the income range BDT 10001-20000. About 18% household of Char Duanti Union, Raihanpur Union, have income within the range BDT 20001-30000 but in other unions, on an average 7.74% household have income in the same range. In Nachna Para union, 10% household's income in the range of BDT 30001-40000 and Raihanpur union 6.12% in the same range which is higher in percentage than the paurashava area in this range.



Source: Socio-economic Survey, 2018

**Figure 4. 78: Percentage of family income range in different Union**

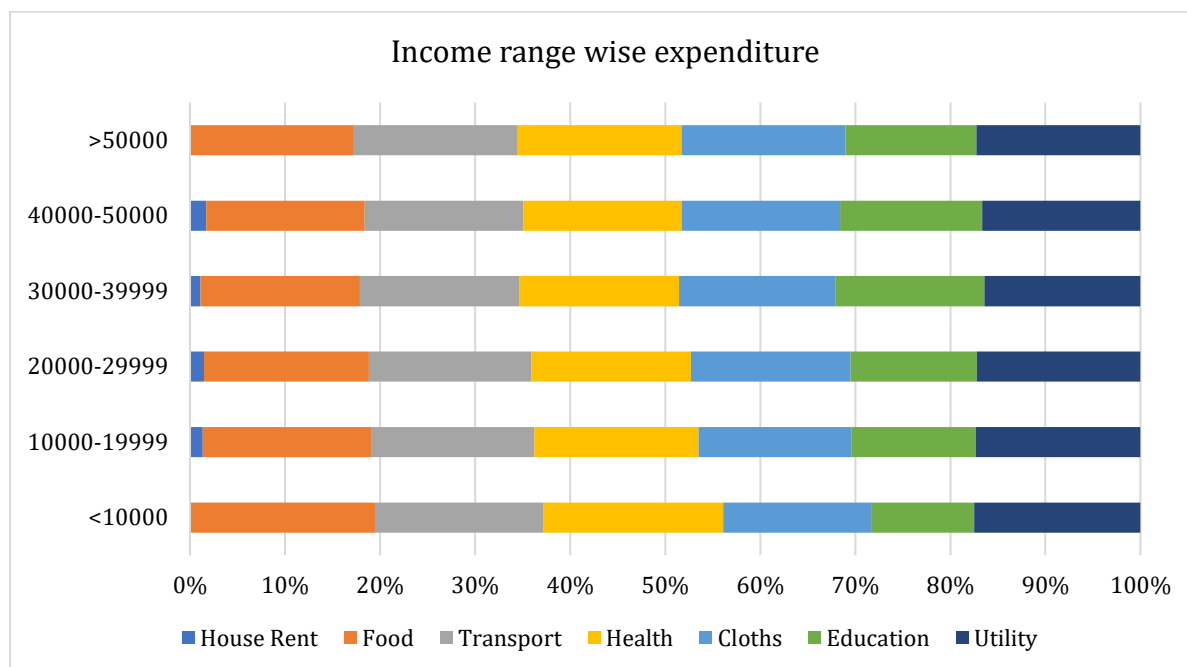


Source: Socio-economic Survey, 2018

**Figure 4. 79: Spatial distribution of family income in Patharghata Upazila**

### 4.9.2 Monthly Family Expenditure

Monthly family expenditure for different purpose has been figured out. From the analysis, it can be identified that in each category of income range most people expense their income in food, transport, health, cloths and education. Only a few people expend for house rent in Patharghata Upazila.

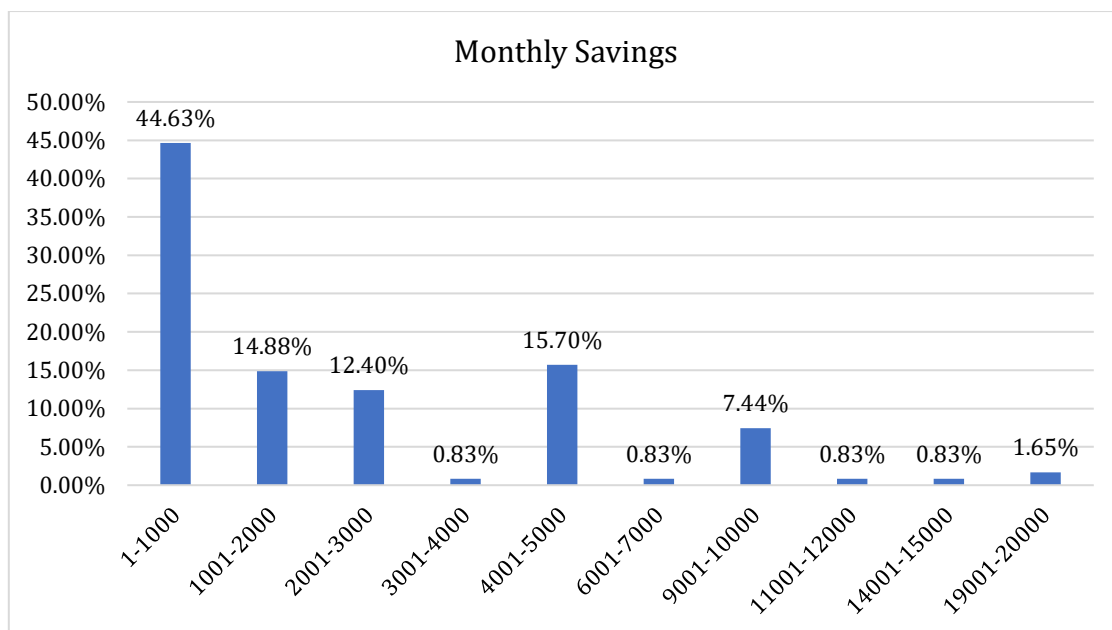


Source: Socio-economic Survey, 2018

**Figure 4. 80: Expenditure according to income range in different sector**

### 4.9.3 Monthly Savings

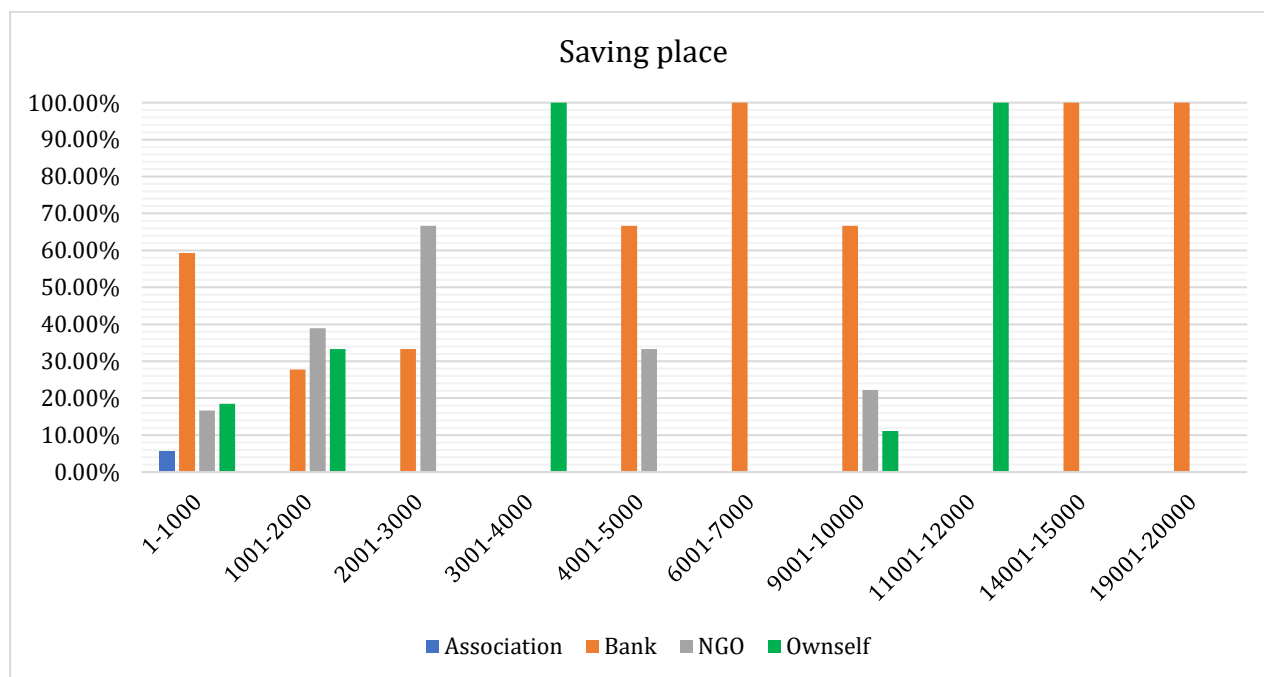
Variations have been found in Patharghata Upazila in case of monthly savings and savings places. The people of Patharghata Upazila save BDT 100 to BDT 20,000 monthly. The figure 4.81 indicates that 44.63% people have savings BDT 1-1000, 14.88% people have savings BDT 1001-2000, 12.40% people have savings BDT 2001-3000, 0.83% people have savings BDT 3001-4000, 15.70% people have savings BDT 4001-5000 and 7.44% people have savings of BDT 9001-10,000.



Source: Socio-economic Survey, 2018

**Figure 4. 81: Monthly savings status in Patharghata Upazila**

A significant percentage of people of Patharghata Upazila save their money in bank. Without the bank the people save their money in NGO, association and in some case, they keep money to themselves for saving. The following figure shows that, people who save BDT 3001-4000 and BDT 11001-12000, save all money to themselves rather than bank, association and NGO.



Source: Socio-economic Survey, 2018

**Figure 4. 82: Savings places for the people of Patharghata Upazila**



#### 4.9.4 Loan Status

Most of the people (63.3%) of Patharghata Upazila don't take a loan from any source. Only 36.8% of people take a loan from different sources. Within the 36.8% loan taking population the Patharghata paurashava contains 16.3% and within 63.3% people who don't take loan the Patharghata paurashava contains 30.8%. That means the highest loan takers are found in the Patharghata paurashava also the lowest loan takers are found in the Patharghata paurashava.

**Table 4. 21: Loan status in Patharghata Upazila**

Paurashava/Union	Loan Status		Total
	Yes	No	
Patharghata Paurashava	16.3%	30.8%	47.0%
Patharghata Union	3.6%	8.5%	12.1%
Kalmegha	3.0%	5.4%	8.4%
Char Duanti	2.5%	6.0%	8.5%
Kanthaltali	2.5%	3.1%	5.6%
Kakchira	4.3%	4.3%	8.5%
Nachna Para	1.6%	2.1%	3.8%
Raihanpur	3.0%	3.1%	6.1%
<b>Grand Total</b>	<b>36.8%</b>	<b>63.3%</b>	<b>100.0%</b>

Source: Socio-economic Survey, 2018

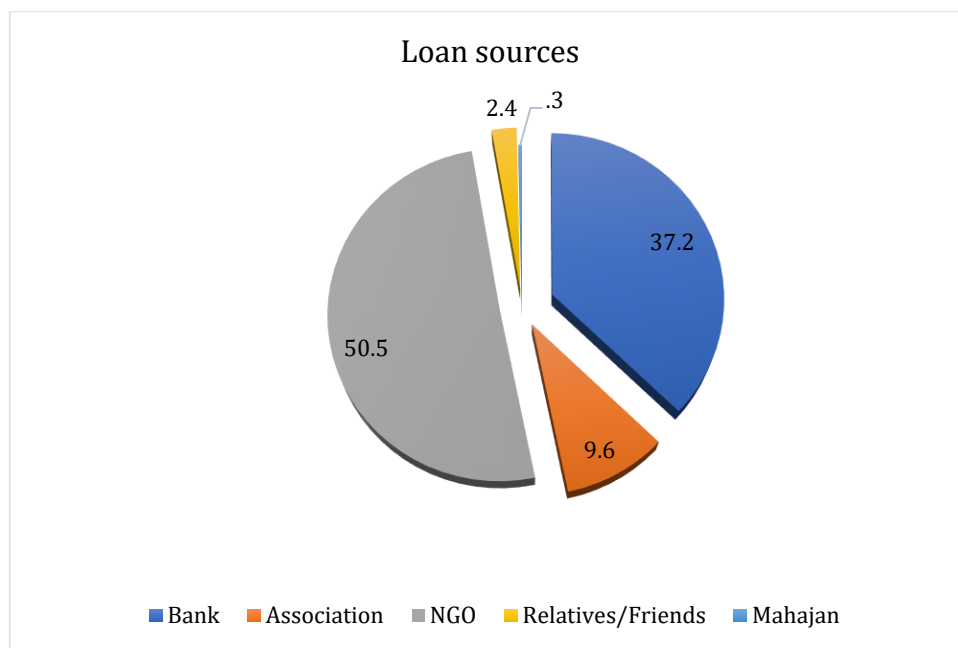
**Table 4. 22: Paurashava and union wise loan status in Patharghata Upazila**

Paurashava/Union	Loan Status		Total
	Yes	No	
Char Duanti	29.41%	70.59%	100%
Kakchira	50.00%	50.00%	100%
Kalmegha	35.82%	64.18%	100%
Kanthaltali	43.48%	56.52%	100%
Nachna Para	43.33%	56.67%	100%
Patharghata Paurashava	34.57%	65.43%	100%
Patharghata Union	29.90%	70.10%	100%
Raihanpur	48.98%	51.02%	100%
<b>Grand Total</b>	<b>36.70%</b>	<b>63.30%</b>	<b>100.0%</b>

Source: Socio-economic Survey, 2018

#### 4.9.4.1 Loan Sources

It is already depicted in loan status that only 36.8% of people of Patharghata Upazila take a loan from a different source. The analysis of taking a loan from different sources reveals that more than half (50.5%) of the people take a loan from NGOs and the percentage of taking a loan from a bank is also high which occupies 37.2%. People also take a small loan from the association, friends as well as Mahajan 9.6%, 2.4%, and 0.3% respectively.

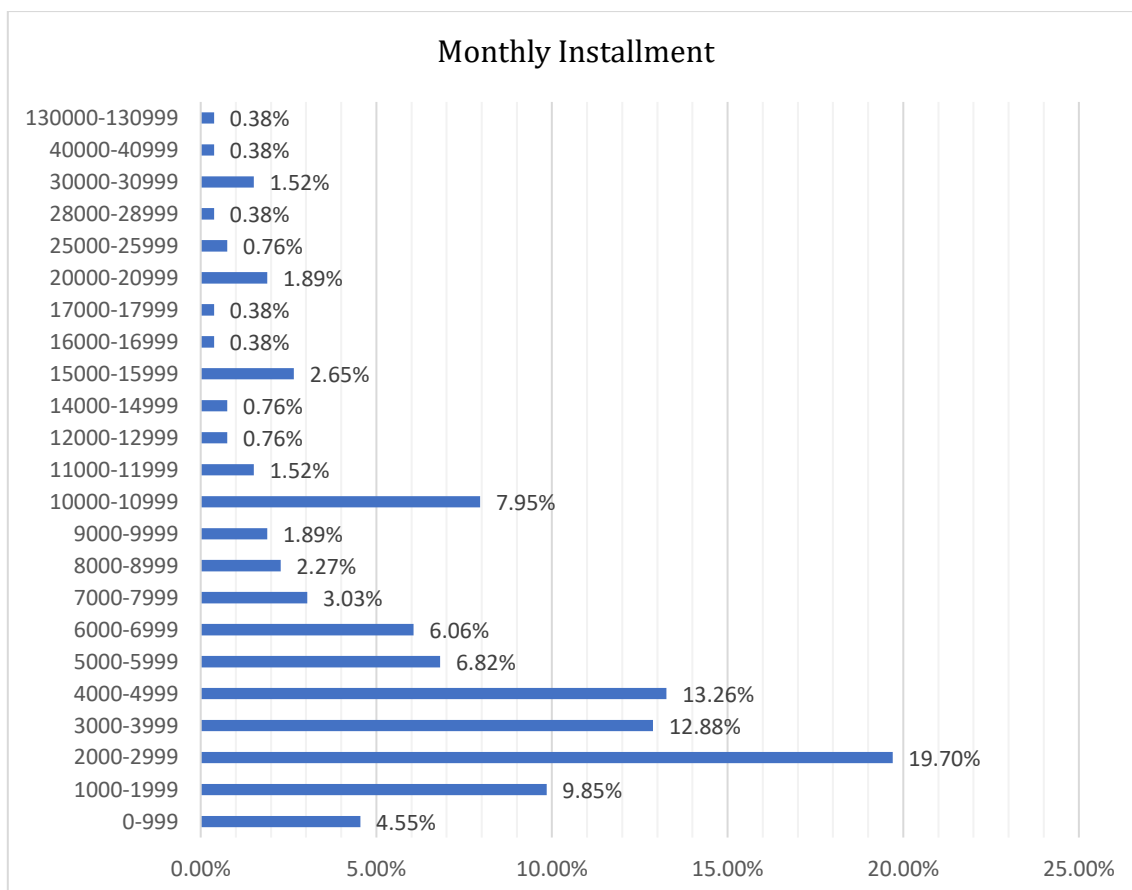


Source: Socio-economic Survey, 2018

**Figure 4. 83: Different loan source for the people of Patharghata Upazila**

#### 4.9.4.2 Monthly Installment

People who take a loan from banks, NGOs and other associations have to pay monthly installment. Installment amount varies depending on the amount of loan taken from different loan sources. Figure 4.84 indicates that the installment amount of this project area ranges from less than BDT 999 to BDT 130999. Within this range, 19.90% have to pay BDT 2000-2999 monthly, 12.88% have to pay BDT 3000-3999 monthly, 13.26% have to pay BDT 4000-4999 monthly. Without these 7.95% have to pay BDT 10000-19999 monthly and more than 14% have to pay less than BDT 2000.

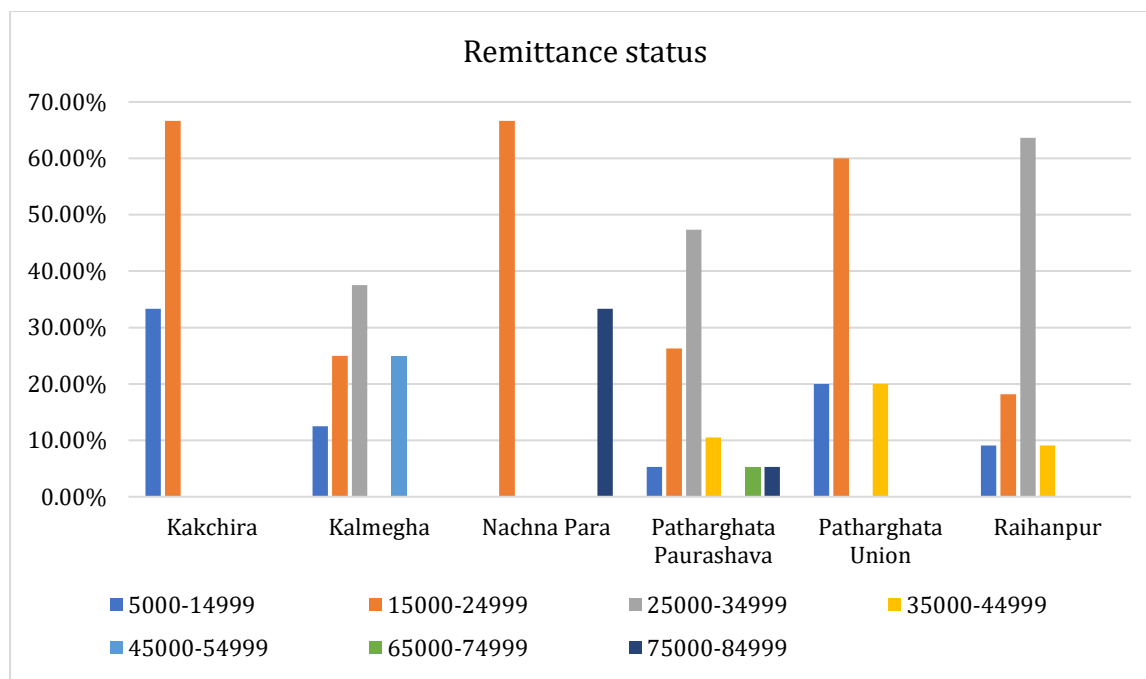


Source: Socio-economic Survey, 2018

**Figure 4. 84: Installment amount status for the people of Patharghata Upazila**

#### 4.9.5 Remittance Status

By definition, a remittance is a transfer of money by a foreign worker to an individual in their home country. The remittance status of Patharghata Upazila has been figured out in the following Figure 4.86 which indicates the evidence of remittance in Patharghata Upazila. The maximum remittance of Patharghata Upazila fall in the range BDT 15000-24999 but in Kalmegha union, Paurashava and Raihanpur union maximum remittance fall in the range 25000-34999.



Source: Socio-economic Survey, 2018

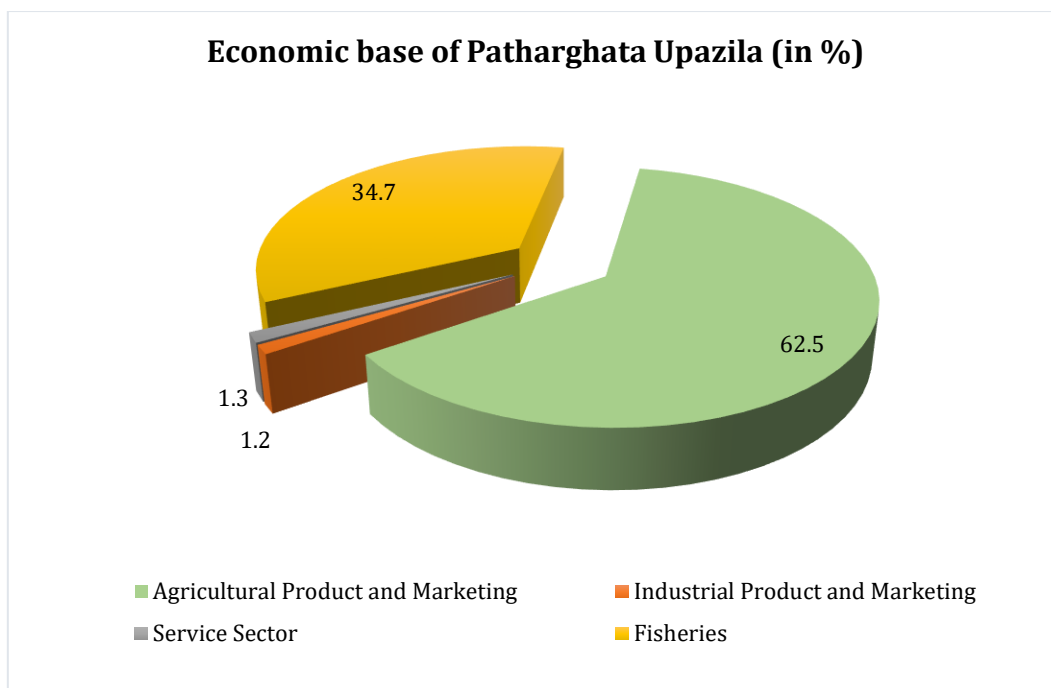
**Figure 4. 85: Remittance status in Patharghata Upazila**

#### 4.9.6 Land Value

The land value of Patharghata Upazila is not collected in the socio-economic survey. The land value related information will be collected through other related survey.

#### 4.9.7 Economic Base of Patharghata Upazila

It is surveyed that most of the people of this area highly dependent on agriculture. About 62.5 percent of people depend on crop agricultural product and marketing. Most of the people work in the agricultural field. As there is no major industrial hub in this area the dependency on industrial product and marketing is very low (1.2%). Some people also depend on the service sector and their percentage is 1.3%. There are also 34.7% of people who think that the economic base of Patharghata Upazila is dependent on fisheries. However, the economic base of the Patharghata Upazila depends on agricultural product and marketing. According to the definition of agriculture, the crop agriculture and fisheries are the part of agriculture and that's why 97.2% people think agriculture as the economic base of this Upazila.



Source: Socio-economic Survey, 2018

**Figure 4. 86: Economic base of Patharghata Upazila**

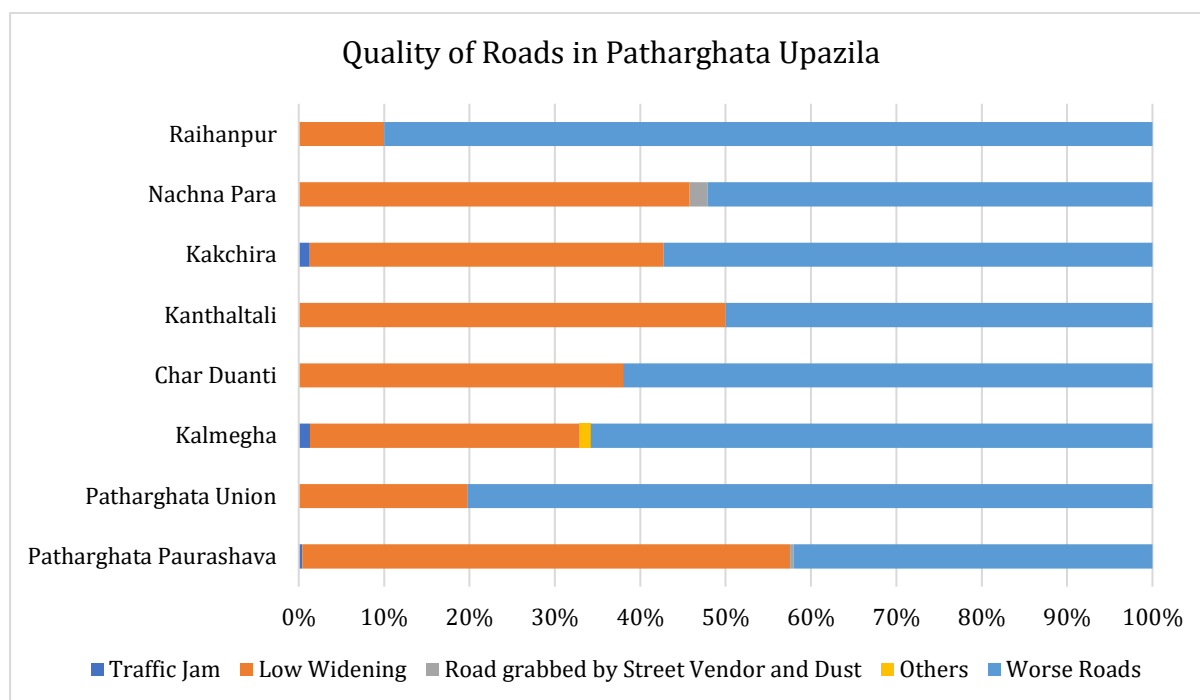
#### 4.10 Condition of Social Infrastructure and Services of Patharghata Upazila

##### 4.10.1 Tourism Development

Haringhata Forest Eco Park, Laldia Forest of Patharghata Upazila have the greater potential for tourism development as there are abundant resources to attract tourists. The Patharghata Upazila is developing very rapidly due to the ample opportunity for eco-tourism development, which is acting as pull factor for private sector developers. Government already has declared the place as tourism zone. This has been created ample opportunities for the local community members to find out new occupation and increase the standard of living. Thousands of deer live in this forest and it attracts the visitor most. This wild deer is available in the locality which adds value to the tourism in Horinghata. In addition, several cultural programs are taking place in Horinghta, However, the “Rashmela” is most important for the local community.

##### 4.10.2 Quality of Main Road: Traffic Congestion

Most of the people of this Upazila mention worse road condition as the main problem of the road network. The second problem related to road transportation is the narrow road. Some people also mention traffic jam as the problem of road transportation in Patharghata Upazila. In paurashava level, the main road transportation-related problem is the narrow road which sometimes causes a little bit of traffic jam in the paurashava.

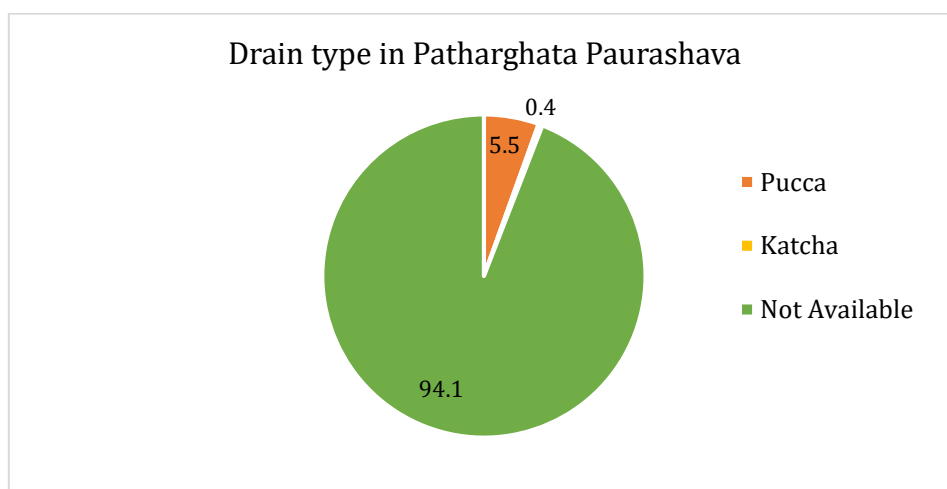


Source: Socio-economic Survey, 2018

**Figure 4. 87: Existing quality of roads in Patharghata Upazila**

#### 4.10.3 Drainage: Drain Type

The adequate drainage system is absent in Patharghata Paurashava. As natural drainage system is working at union level so we had to focus only at the structured drainage system in the paurashava. About 94.1% area of the paurashava has no drain and 5.5% is found at pucca and only 0.4% katcha drain. These pucca drains are not properly working during rainy season due to low widening, filled up by dust etc. leading the problem of water logging.

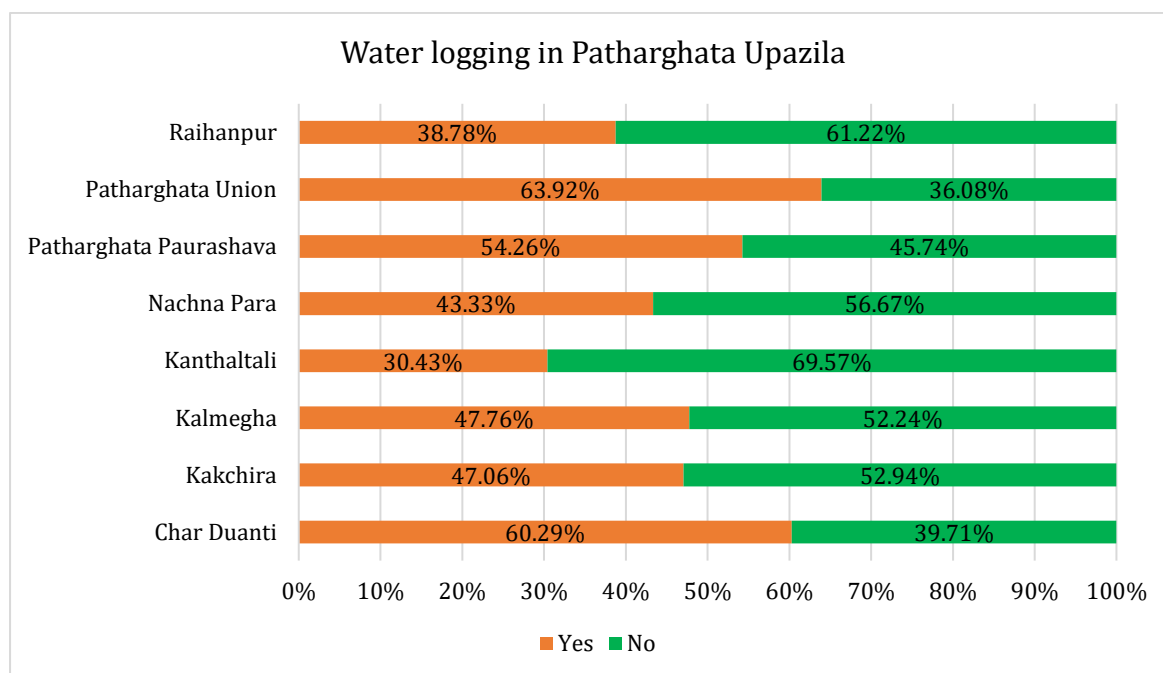


Source: Socio-economic Survey, 2018

**Figure 4. 88: Drain type in Patharghata Paurashava**

#### 4.10.4 Water Logging Situation

Water logging is one of the major problems in Patharghata Upazila. Though there are variations in the level of water logging in the different union, people of all the union perceive the problem of water logging. Maximum water logging (63.92%) has been recognized by the people of Patharghata union and minimum water logging (30.43%) has been recognized by the people of Kanthaltali union. In other unions about 50% or more people recognized the problem of water logging.

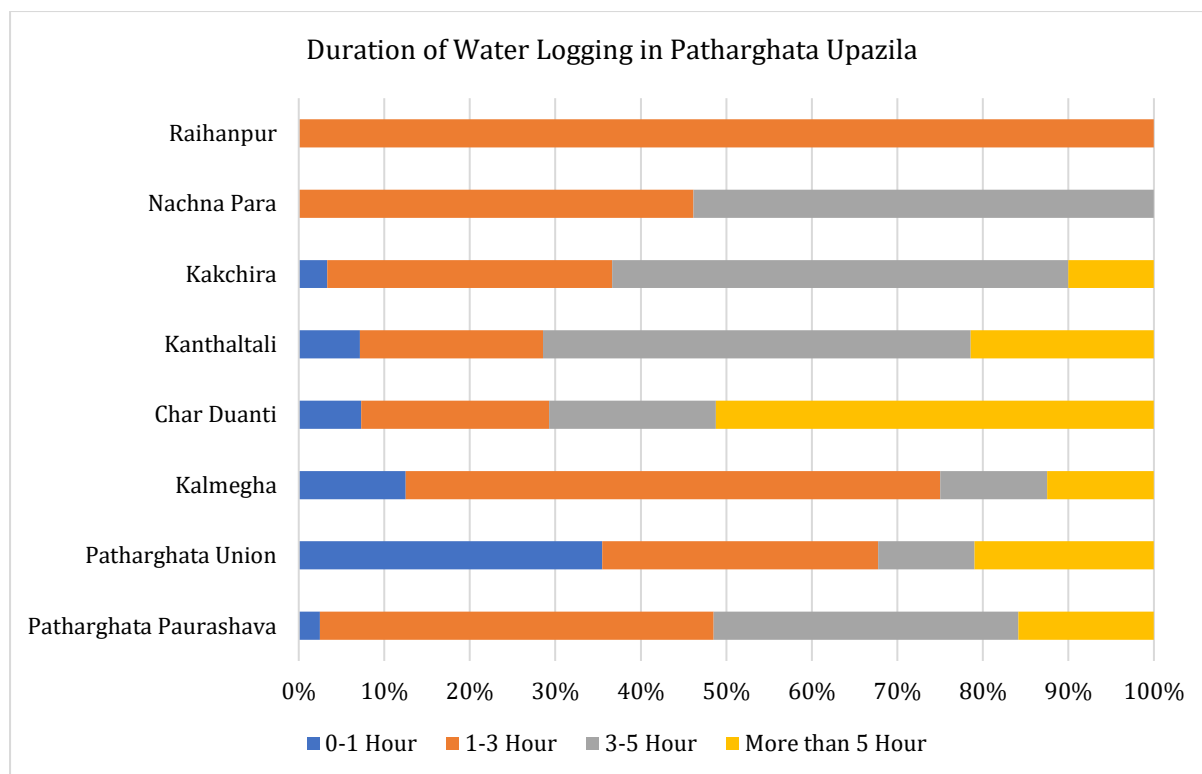


Source: Socio-economic Survey, 2018

**Figure 4. 89: Water logging in Patharghata Upazila**

##### 4.10.4.1 Duration of Water logging

The water logging status and cause of water logging have been depicted in the previous sections now the duration of water logging in the project area has been described for a better understanding of the scenario of water logging. In Patharghata Upazila there are variations in duration of water logging within the unions. In an urban area (Patharghata paurashava) water logging exists 1-3 hours in 46% case and 3-5 hours in 35.6% case and in 15.8% case water logging exist for more than 5 hours. All the unions of this Upazila experience 1-3 hours of water logging and 3-5 hours of water logging. Moreover, except Raihanpur and Nachna Para other unions all other unions have experienced 3-5 hours of water logging.



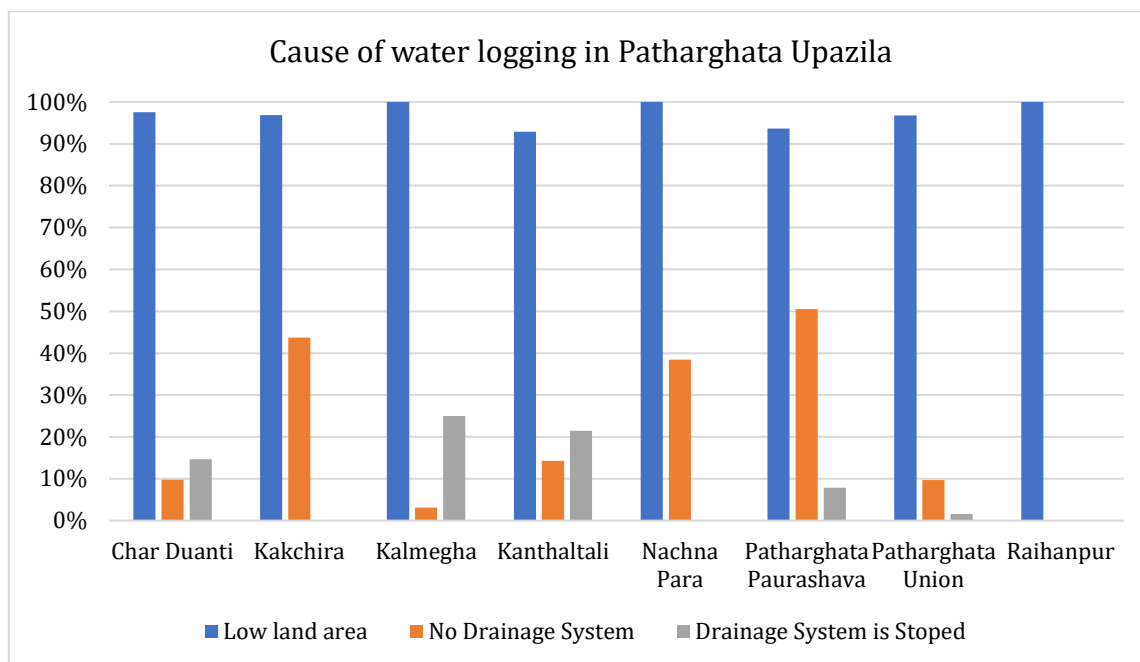
Source: Socio-economic Survey, 2018

**Figure 4. 90: Duration of water logging in Patharghata Upazila**

#### 4.10.4.2 Causes of Water logging

The cause of water logging indicates a different cause for water logging in the project area. The major cause for water logging is the geographical location of Patharghata Upazila. People mention the geographical location of their Upazila as the cause of water logging. The water logging in the project area also induced by the absence of adequate drainage system, and a little bit by the closed drainage system.





Source: Socio-economic Survey, 2018

**Figure 4. 91: Causes of water logging in Patharghata Upazila**

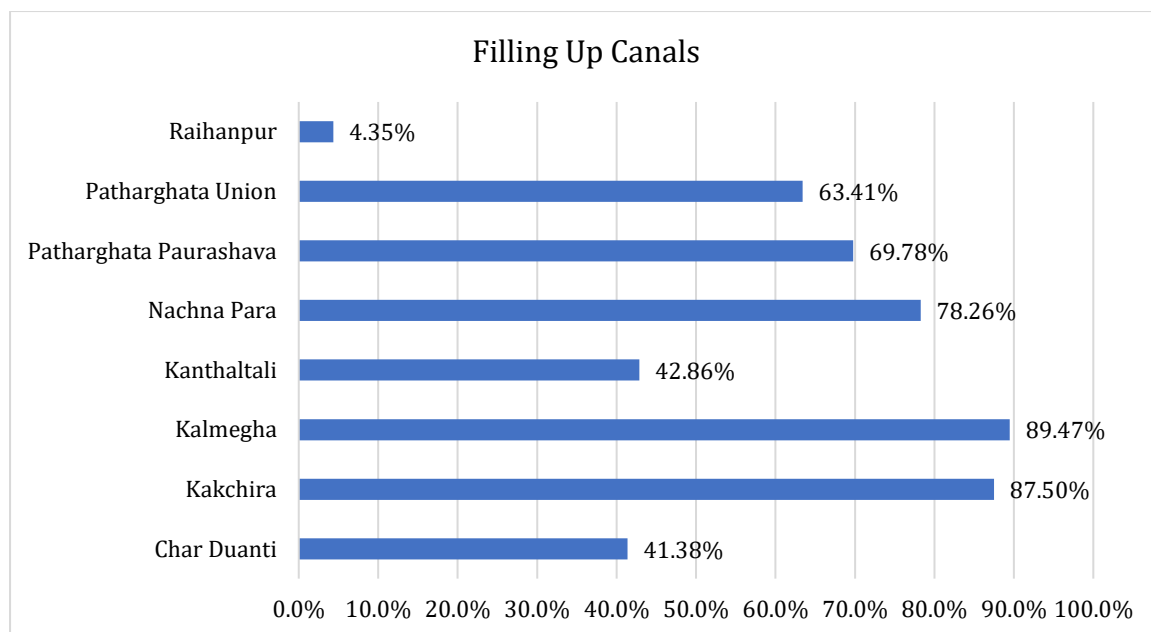
#### 4.10.5 Unauthorized Encroachment

##### 4.10.5.1 Footpath encroachment and Settlement on Embankment

In Patharghata Upazila in Paurashava area the unauthorized encroachment has been found for the footpath by the informal economic activities. Normally the roads within the paurashava area are narrow and the unauthorized footpaths encroachment reduce the pedestrian security. In the Patharghata Upazila the landless/homeless people who were extremely damaged during sidar and ayla are living on the slope of embankment. This unauthorized encroachment of embankment making the embankment vulnerable to protect the cyclone in this area.

##### 4.10.5.2 Filling Up Canals

The people of Patharghata Upazila mentioned the condition of filling up canals. This scenario has been found at all the union and paurashava area but at different level. In Kakchira, Kalmegha union more than 85% people mention the filling up canals and in Nachna para, Patharghata union and paurashava are more than 60% people mention this scenario. However, in Raihanpur union only 4.35% mentioned this situation.

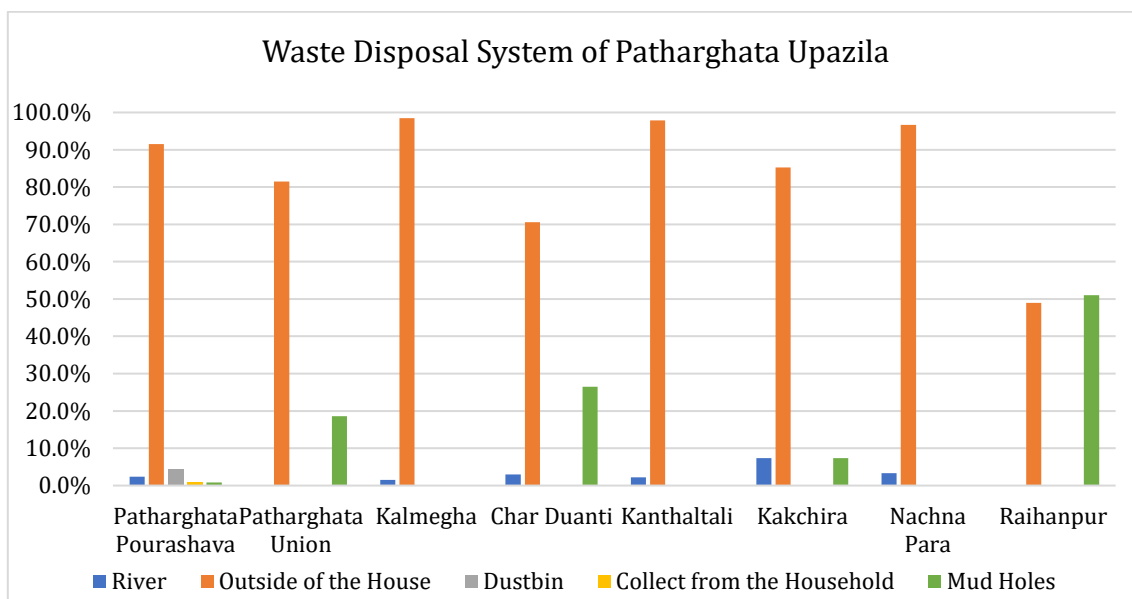


Source: Socio-economic Survey, 2018

**Figure 4. 92: Filling up of canals by the local people of Patharghata Upazila**

#### 4.10.6 Waste Disposal System

Waste disposal system of Patharghata shows that most of the people (83.85%) dispose waste just outside the house but in Patharghata paurashava, Kalmegha union, Kanthaltali union and Nachna Para union more than 90% people dispose waste just outside the house. Only 4.5% of people of paurashava dispose of waste in the dustbin. A few percentages of people dispose of waste in the river. In Raihanpur union more than half of the population dispose of waste in mud holes.



Source: Socio-economic Survey, 2018

**Figure 4. 93: Waste disposal system of Patharghata Upazila**

#### 4.10.7 Recreational Place: Playground and Park

The overall scenario of visiting playground by the people of Patharghata Upazila shows that 74.66% people don't go to playground and 25.34% people go to playground for recreational purpose. The status of visiting park shows that 93.26% of the total population of this Upazila don't go to park and only 6.74% people go to park for recreational purpose.

**Table 4. 23: Status of visiting playground by the people of Patharghata Upazila**

Paurashava/Union	Playground	
	No	Yes
Char Duanti	83.82%	16.18%
Kakchira	86.76%	13.24%
Kalmegha	83.58%	16.42%
Kanthaltali	78.26%	21.74%
Nachna Para	90.00%	10.00%
Patharghata Paurashava	61.70%	38.30%
Patharghata Union	86.60%	13.40%
Raihanpur	95.92%	4.08%
<b>Grand Total</b>	<b>74.66%</b>	<b>25.34%</b>

Source: Socio-economic Survey, 2018

**Table 4. 24: Status of visiting park by the people of Patharghata Upazila**

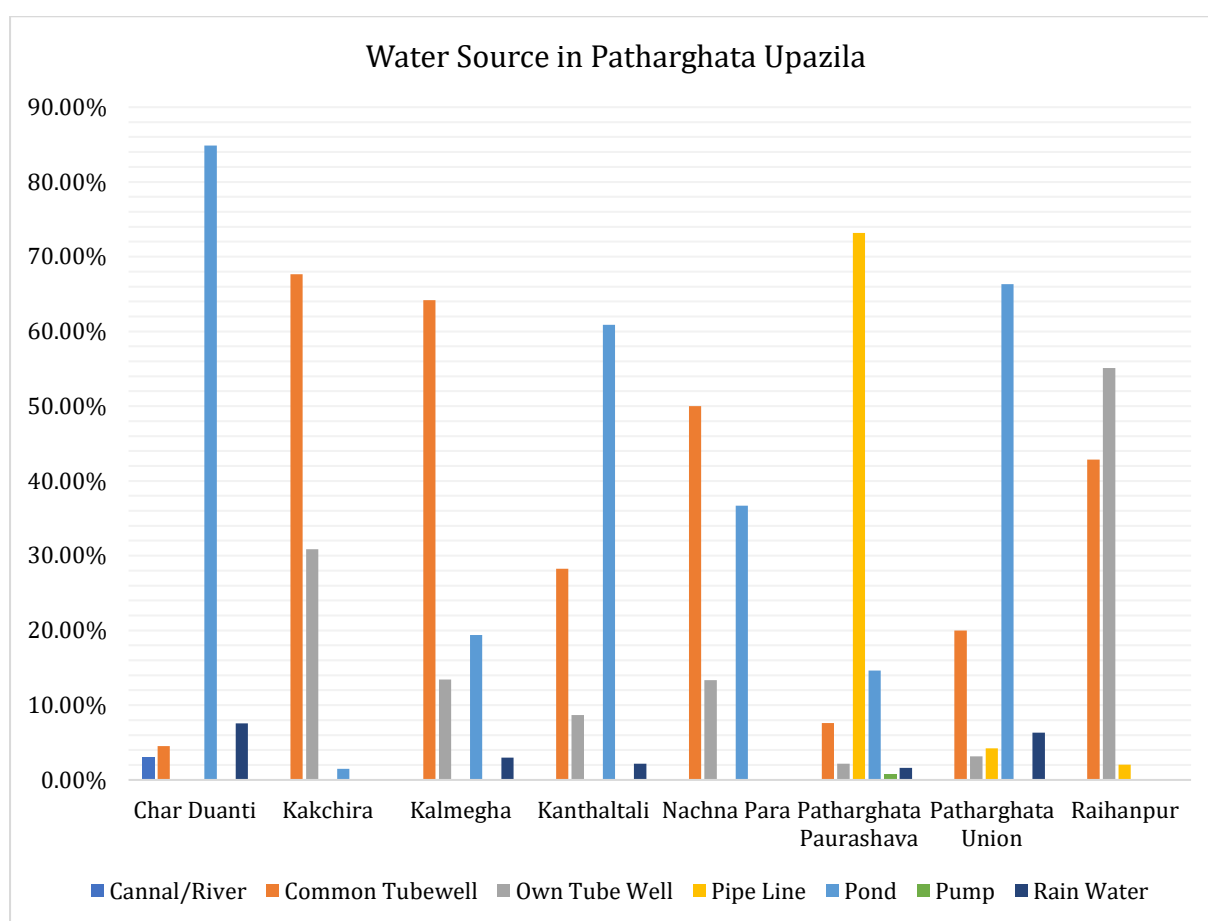
Paurashava/Union	Park	
	No	Yes
Char Duanti	98.53%	1.47%
Kakchira	97.06%	2.94%
Kalmegha	97.01%	2.99%
Kanthaltali	97.83%	2.17%
Nachna Para	100.00%	0.00%
Patharghata Paurashava	87.23%	12.77%
Patharghata Union	100.00%	0.00%
Raihanpur	100.00%	0.00%
<b>Grand Total</b>	<b>93.26%</b>	<b>6.74%</b>

Source: Socio-economic Survey, 2018

### 4.10.8 Water Source and Related issues

#### 4.10.8.1 Water Source

Pipeline (73.17%) is the main water source for the people of Patharghata paurashava. The second main source of water in paurashava area is pond water (14.63%). Without these two sources in paurashava area people collect water from own tube well, common tube well, rainwater and pump. Except for the paurashava area, the pipeline water service is available in Patharghata union (4.21%) and Raihanpur union (2.04%). Tube well is the main water source for the people of Kalmegha, Kakchira, Nachna Para and Raihanpur union where 77.61%, 98.53%, 63.33% and 97.96% people collect water from tube well respectively.



Source: Socio-economic Survey, 2018

**Figure 4. 94: Major water source in Patharghata Upazila**

#### 4.10.8.2 Water Quality

Within the whole Upazila of Patharghata 80.9% water is drinkable, 18.5% is non-drinkable, 0.1% is contaminated with arsenic and another 0.5% is contaminated with odor smell. In the Paurashava area 89.1% water is suitable for drinking and 10.1% water is not suitable for drinking. Only 0.3% water of urban area contains arsenic and 0.5% water contains the smell. Water quality has been found poor in Patharghata, Char Duanti, Kanthaltali, and Nachna para union where 42.3%, 55.9%, 39.1% and 20% water respectively are non-drinkable. Water collected from a different source in Raihanpur union is 100% drinkable.

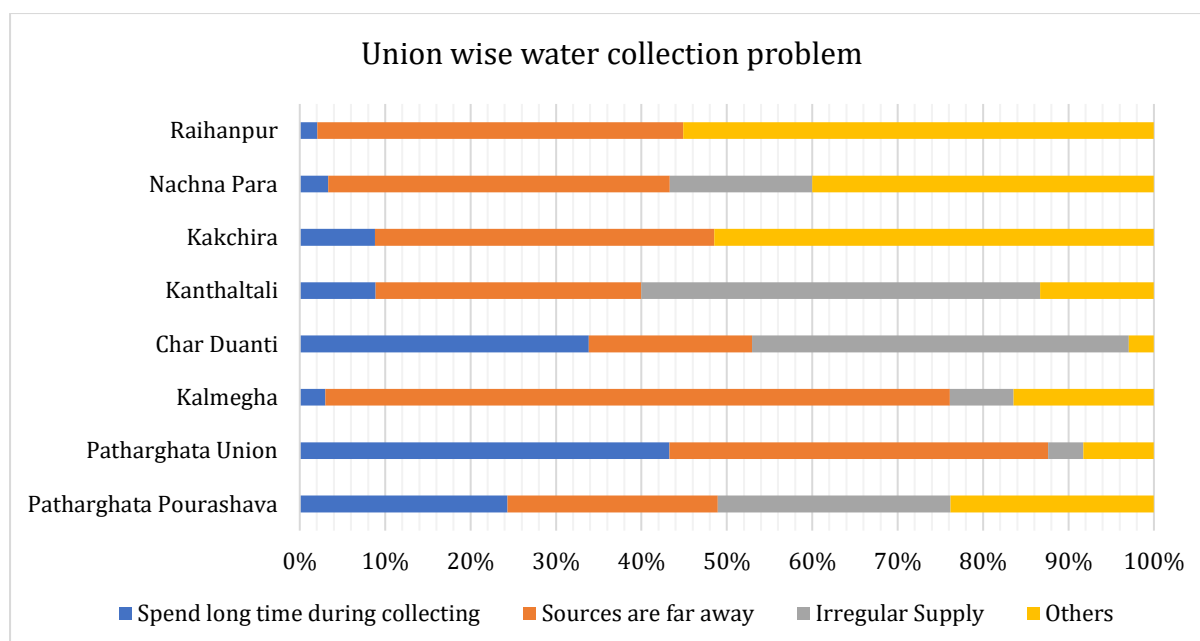
**Table 4. 25: Quality of water in Patharghata Upazila**

Paurashava/Union	Water quality			
	Drinkable	Non-drinkable	Contained with Arsenic	Contained Smell
Patharghata Paurashava	89.1%	10.1%	.3%	.5%
Patharghata Union	56.7%	42.3%		1.0%
Kalmegha	92.5%	7.5%		
Char Duanti	42.6%	55.9%		1.5%
Kanthaltali	60.9%	39.1%		
Kakchira	97.1%	2.9%		
Nachna Para	80.0%	20.0%		
Raihanpur	100.0%			
<b>Total</b>	<b>80.9%</b>	<b>18.5%</b>	<b>.1%</b>	<b>.5%</b>

Source: Socio-economic Survey, 2018

#### 4.10.8.3 Water Collection Problem

The main problem related to water collection in Patharghata Upazila is dominated by the location of sources far away from the people's resident. Secondly, people also mention spending a long-time during water collection as their water collection problem. In paurashava, Char Duanti and Kanthaltali union irregular supply is also considered as the water collection problem. There are some other unspecified problems in water collection.



Source: Socio-economic Survey, 2018

**Figure 4. 95: Water collection related problems in Patharghata Upazila**

#### 4.10.8.4 Water Source for Drinking in Flood Time

Diversity has been found for flood time water source in the project area. More than 40% of people of paurashava area collect water from a tube well at the time of the flood. Without tube well 26.54% people use rainwater as the source of water at flood time, 29.76% people use river or pond water after rectifying it by phitkiri and only 2.14% people use water after treatment the water by purifying tablet. In rural area the household of Kakchira, Nachna Para union use tube well as the main water source at flood time but for other union the rain water is the main source of water during flood time.

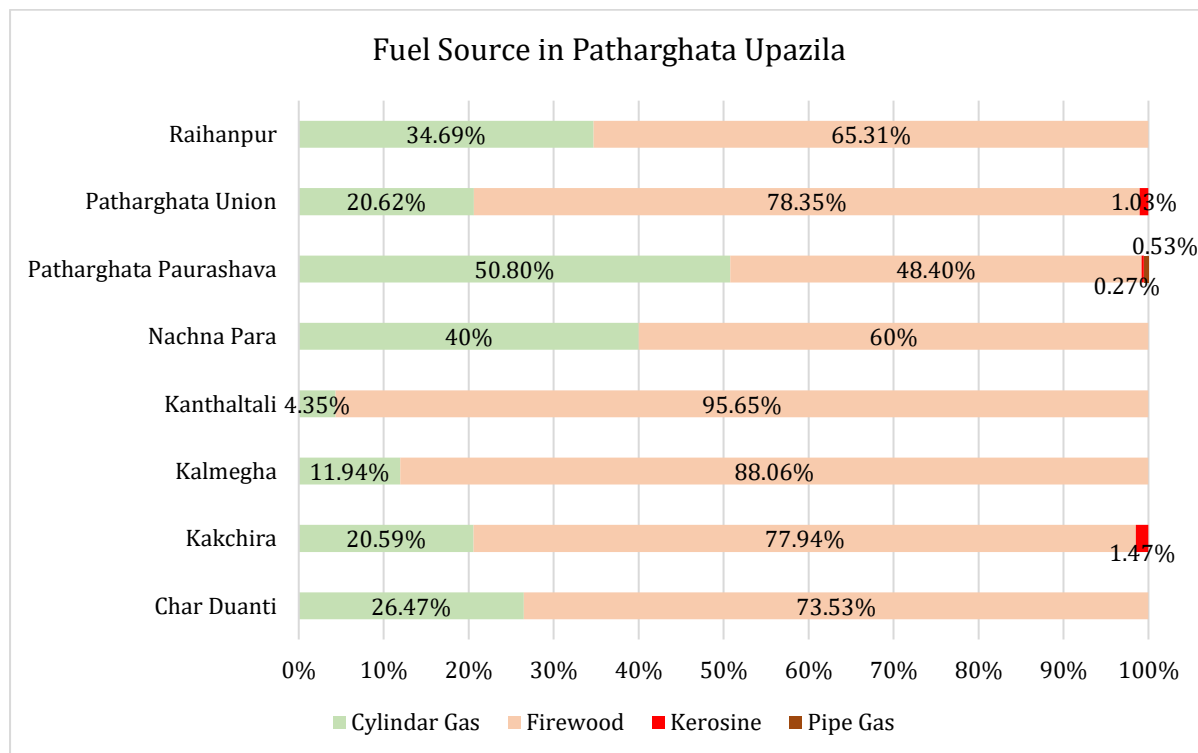
**Table 4. 26: Source of drinking water during flood time in Patharghata Upazila**

Union/Paurashava	Fitkiri	Purification tablet	Rain Water	Tube Well
Char Duanti	2.94%	0.00%	97.06%	0.00%
Kakchira	0.00%	0.00%	20.59%	79.41%
Kalmegha	0.00%	0.00%	100.00%	0.00%
Kanthaltali	4.44%	0.00%	95.56%	0.00%
Nachna Para	3.33%	0.00%	40.00%	56.67%
Patharghata Paurashava	29.76%	2.14%	26.54%	41.55%
Patharghata Union	6.19%	0.00%	90.72%	3.09%
Raihanpur	0.00%	0.00%	95.83%	4.17%
<b>Total</b>	<b>15.46%</b>	<b>1.01%</b>	<b>54.25%</b>	<b>29.28%</b>

Source: Socio-economic Survey, 2018

#### 4.10.9 Fuel Source

The scenario of fuel source in Patharghata Upazila is dominated by the use of firewood. About 64% of household use firewood as their main fuel source. In recent time, the use of cylinder gas is increasing in this area and has occupied a mentionable share (35.3%) as the source of fuel. In paurashava area, more than half (50.80%) of the household use cylinder gas as their main source of fuel.

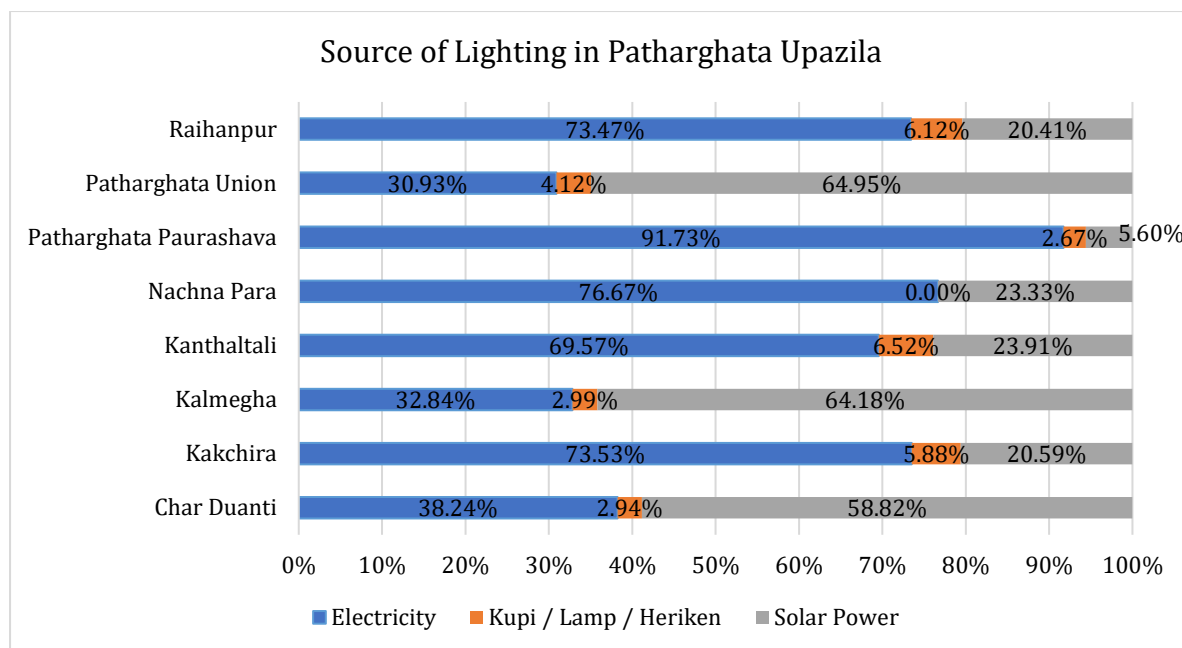


Source: Socio-economic Survey, 2018

**Figure 4. 96: Source of fuel in Patharghata Upazila**

#### 4.10.10 Source of Lighting

The main source of lighting for the people of Patharghata Upazila is electricity. But the availability of electricity is not same for all union of this Upazila. In Patharghata paurashava 91.73% household use electricity, 2.67% household use kupa/lamp/hariken and 5.60% household use solar power as the source of lighting. In rural area the Raihanpur union, Nachna Para union and Kakchira union more than 70% household use electricity as their source of lighting but the Patharghata union, Kalmegha union and Char Duanti union more than 60% household use solar power as the source of lighting.

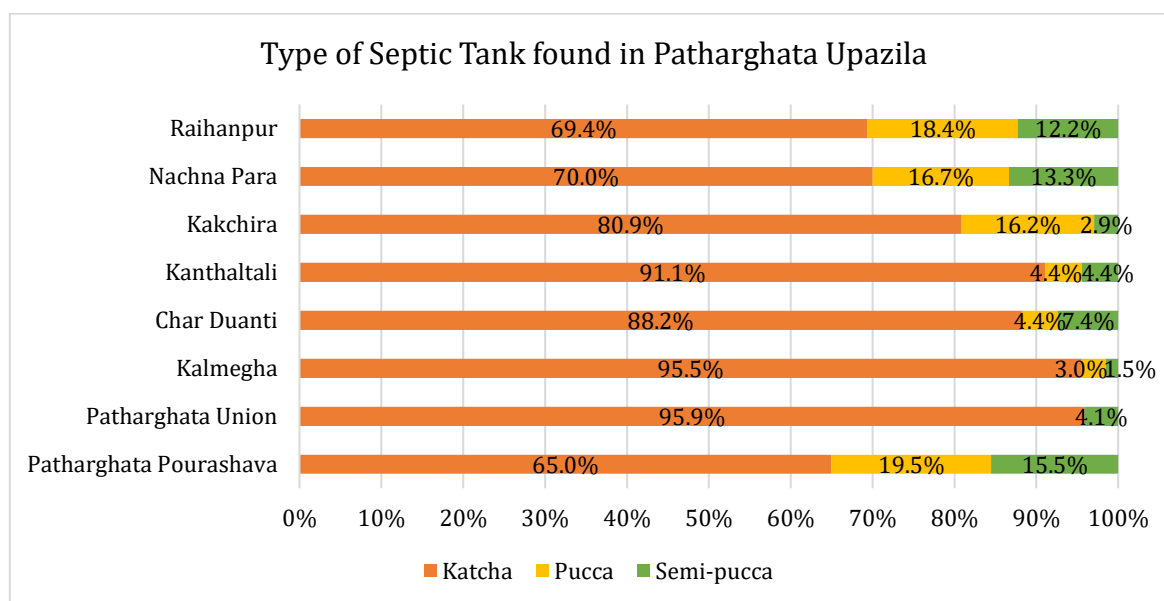


Source: Socio-economic Survey, 2018

**Figure 4. 97: Source of lighting in Patharghata Upazila**

#### 4.10.11 Type of Septic Tank

Most of the septic tank of Patharghata Upazila are katcha in type. The scenario of a septic tank in Patharghata paurashava indicates 65% septic tanks are katcha, 19.5% septic tanks are pucca and another 15.5% septic tanks are semi-pucca. In rural area, the Raihanpur and Nachna Para union have highest number of pucca and semi-pucca septic tank which occupy 30.6% and 30% respectively.



Source: Socio-economic Survey, 2018

**Figure 4. 98: Types of septic tank in Patharghata Upazila**



#### 4.10.12 Quality of Different Services

Five types of services have been analyzed to identify the quality of services of Patharghata Upazila. The quality of services of these five types is different in urban and Rural area within this Upazila. In the paurashava area market condition has been perceived moderate (50%) to good (49.25), shopping center condition has been perceived moderate (40.3%) to good (58.6%) and condition of post office, fire service, and hospital have been also perceived moderate to good though only 0.8-2.20 percent people mention poor quality of these services. Like urban area in rural area most of the people consider the condition of these services are moderate to good but in Nachna para union 13.3% people consider the poor condition of shopping center service, in Kanthaltali union 13% people consider the poor condition of hospital service and also in Nachna Para union 16.7% people consider the poor condition of hospital service.

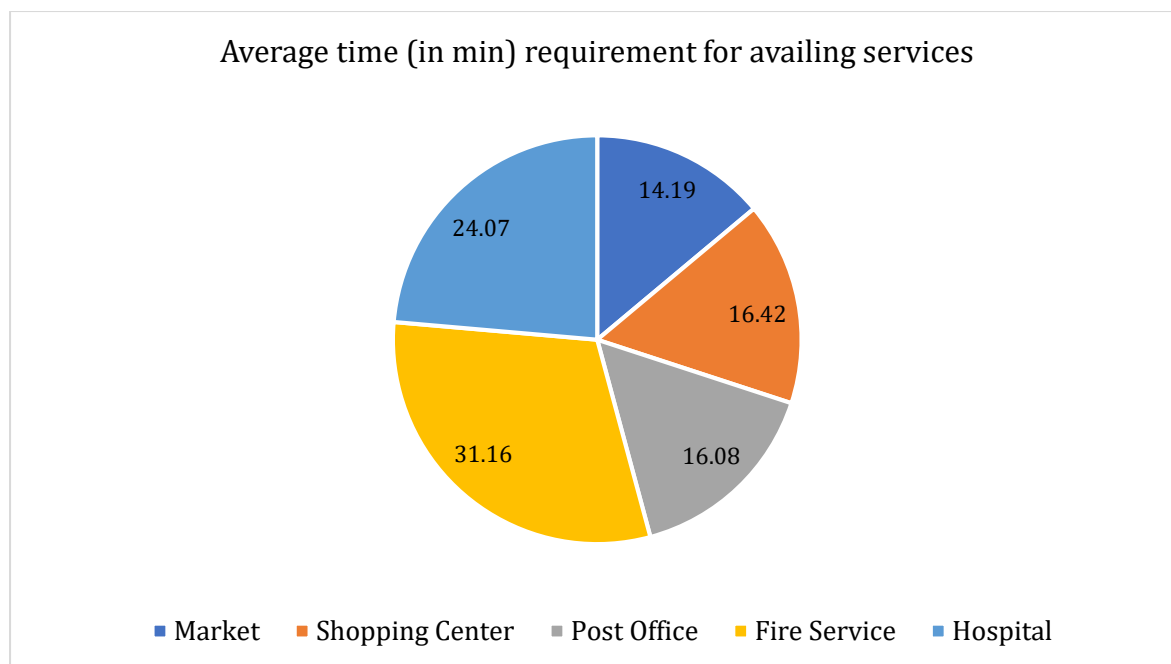
**Table 4. 27: Quality of services in Patharghata Upazila**

Name of Union/Paurashava	Quality of Services (in percentage)														
	Market			Shopping center			Post office			Fire service			Hospital		
	Good	Moderate	Poor	Good	Moderate	Poor	Good	Moderate	Poor	Good	Moderate	Poor	Good	Moderate	Poor
Patharghata Paurashava	49.2	50.0	.8	58.6	40.3	1.10	58.1	40.2	1.7	55.7	42.2	2.2	41.8	56.9	1.3
Patharghata Union	74.0	26.0	0.0	82.5	17.5	0.0	73.1	25.6	1.3	69.8	30.2	0.0	71.1	26.8	2.1
Kalmegha	16.4	83.6	0.0	26.9	73.1	0.0	73.0	27.0	0.0	91.9	8.1	0.0	40.3	59.7	0.0
Char Duanti	16.2	76.5	7.4	33.8	60.3	5.9	8.8	86.8	4.4	20.6	76.5	2.9	13.2	80.9	5.9
Kanthaltali	10.9	80.4	8.7	6.5	84.8	8.70	37.0	54.3	8.70	34.8	52.2	13	10.9	76.1	13.0
Kakchira	71.6	25.4	3.0	76.5	20.6	0.0	74.2	22.6	3.2	89.5	10.5	0.0	77.9	19.1	2.9
Nachna Para	56.7	30.0	13.3	56.7	30.0	13.3	63.3	26.7	10.0	79.3	3.4	17.2	63.3	20.0	16.7
Raihanpur	4.1	95.9	0.0	4.1	95.9	0.0	4.1	95.9	0.0	61.2	36.7	2.0	10.2	89.8	0.0

Source: Socio-economic Survey, 2018

#### 4.10.13 Time Requirement for Availing Services

Average time to get access to different services for the people of Patharghata Upazila varies from one service to another service. The easiest accessibility in terms of time has been observed in the case of the market facility. People need an average of 14.19 minutes to get access to a market. The second easiest accessibility has been observed for the post office which needs average 16.08 minutes to get the service. The people require average 16.42 minutes to go to shopping center. The hospital which is the utmost requirement when a person became sick, need average 24.07 minutes to get the service. People need the highest time (31.16 min) for getting fire service facility among the facilities they have access.



Source: Socio-economic Survey, 2018

**Figure 4. 99: Average time need to go to service center in Patharghata Upazila**

#### 4.10.14 Mode Choice for Availing Different Services

Transportation demand is demand driven demand because people need to generate a trip to full fill their other demand. To get access to different services and facilities people of Patharghata Upazila are generating trips by using different transport modes. Mode choice also depends on some variables. There are variations in mode choice among the people of Patharghata Upazila. The people of Patharghata Upazila choice walking as their main mode of transport to get all services and then they prefer rickshaw as the mode of transport for different services. More than 4% people chose motor cycle as their mode of transport. A little portion of population use bicycle and van as their mode of transport in Patharghata Upazila.

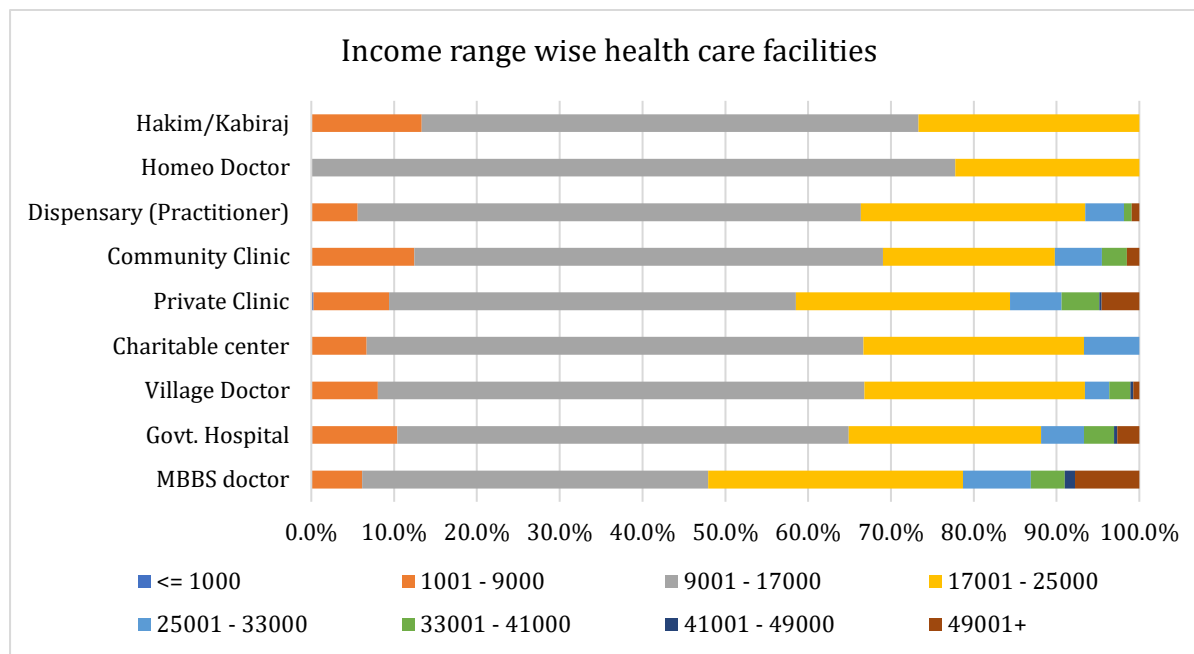
**Table 4. 28: Mode choice for services in Patharghata Upazila**

Transport Mode	Name of Services				
	Market	Shopping Center	Post Office	Fair Service	Hospital
Bicycle	0.37%	0.37%	0.16%	0.18%	0.37%
Motor Cycle	4.49%	4.49%	4.45%	3.90%	4.49%
Rickshaw	38.33%	38.33%	39.11%	34.93%	38.33%
Van	0.12%	0.12%	0.16%	0.18%	0.12%
Walking	56.68%	56.68%	56.12%	60.82%	56.68%
<b>Total</b>	<b>100.0%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

Source: Socio-economic Survey, 2018

#### 4.10.15 Health Care Services for Different Income Group

In Patharghata Upazila the household who have family income more than BDT 1000 and up to BDT 25000 use to go for treatment when they become sick to MBBS doctor, government hospital, village doctor, charitable center, private clinic, community clinic, dispensary, homeo doctor and also hakim or kobiraj.



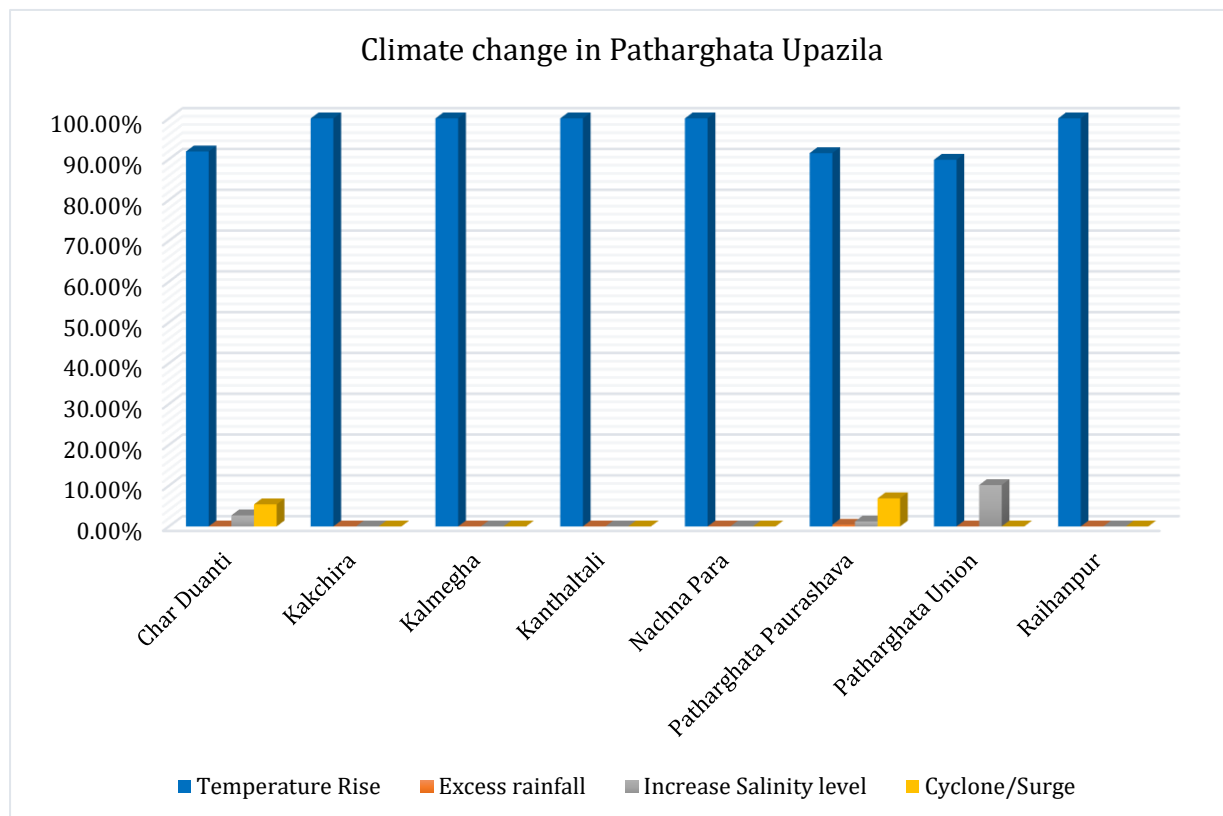
Source: Socio-economic Survey, 2018

**Figure 4. 100: Existing health care facilities available in Patharghata Upazila**

#### 4.11 Climate Change Related Issues

##### 4.11.1 Climate Change

Climate change is one of the most important issues in recent years. People of Patharghata Upazila have faced temperature raising problem in recent years. Most of the people mention the temperature rise as the main climate change problem. Only a few percent of people mention the cyclone as the effect of climate change. In paurashava area 91.50% people think temperature rise as the effect of climate change, 6.88% think cyclone and 1.21% think salinity as the effect of climate change. In the rural area of this Upazila except Char Duanti and Patharghata union the people of all other union think temperature rise is only the effect of climate change.

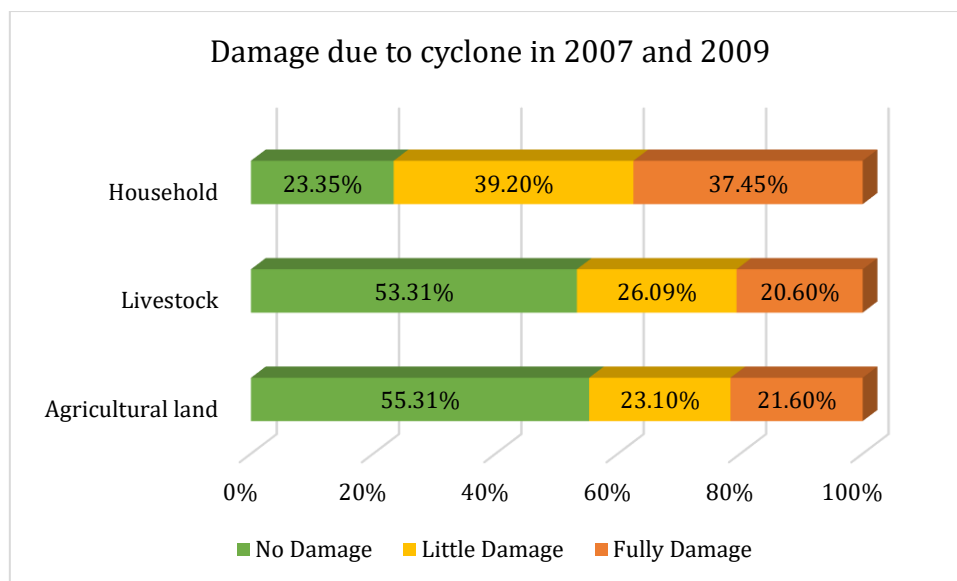


Source: Socio-economic Survey, 2018

**Figure 4. 101: Climate change effects in Patharghata Upazila**

#### 4.11.2 Damage of Assets due to Cyclone in 2007 and 2009

The people of Patharghata Upazila due to cyclone sidar in 2007 and Ayla in 2009 lost their assets including house, livestock and agriculture. These two cyclones caused little damage of house for 39.20% people, livestock for 26.09% people and agricultural land for 23.10% people. In addition, these cyclones caused full damage of house for 37.45% people, livestock for 20.60% people and agricultural land damage for 21.60% people in Patharghata Upazila

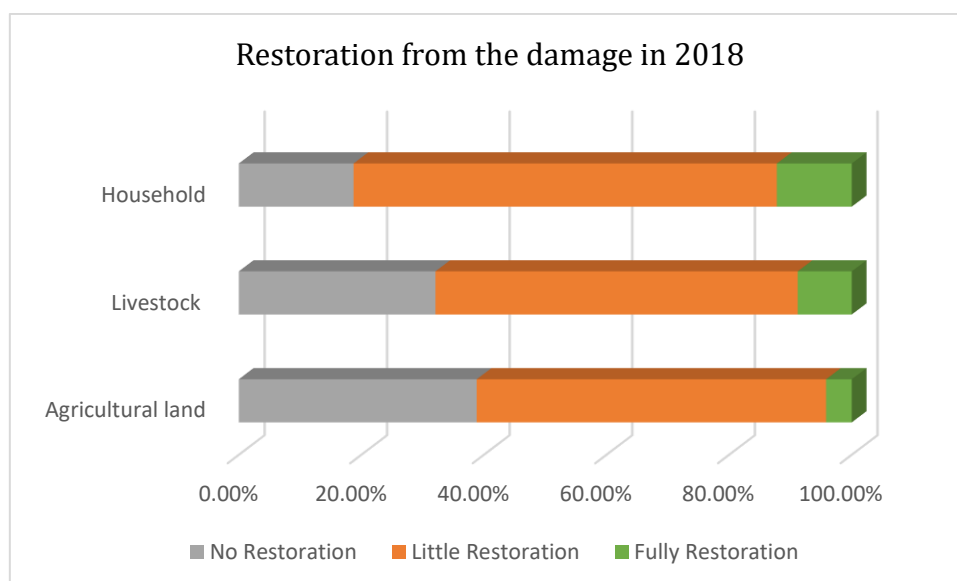


Source: Socio-economic Survey, 2018

**Figure 4. 102: Damage due to cyclone in 2007 and 2009 in Patharghata**

#### 4.11.3 Restoration from Damage of Cyclone

The assets that were damaged due to cyclone has been depicted in the previous subsection, an analysis on restoration from the damaged assets has been performed to show the level of restoration. Most of the people have restored a small portion of their damaged property. Some of them have not able to restore anything. A good percentage of people cannot renovate from their agricultural damage and also from livestock damage. Maximum restoration has been found from house damage with compare to livestock and agricultural land.

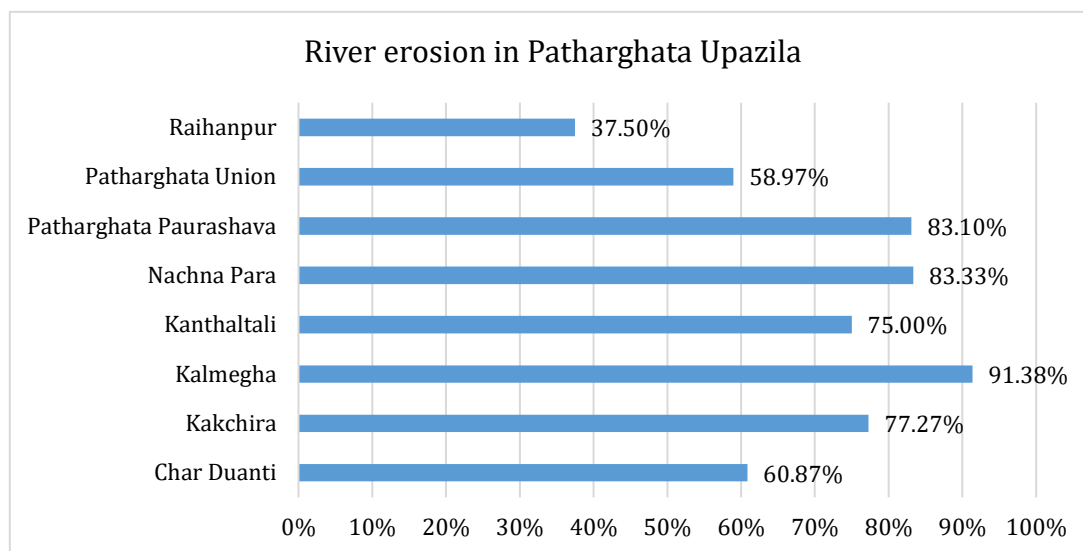


Source: Socio-economic Survey, 2018

**Figure 4. 103: Restoration from damage of cyclone in Patharghata Upazila**

#### 4.11.4 River Erosion

The river erosion has been found in all the unions of Patharghata Upazila but the level of erosion is not same for all the unions. Maximum river erosion (91.38%) has been mentioned by the people of Kalmegha union and minimum scenario of river erosion has been mentioned for Raihanpur union. In Patharghata paurashava area a remarkable percent (83.10%) of people recognized the scenario of river erosion.

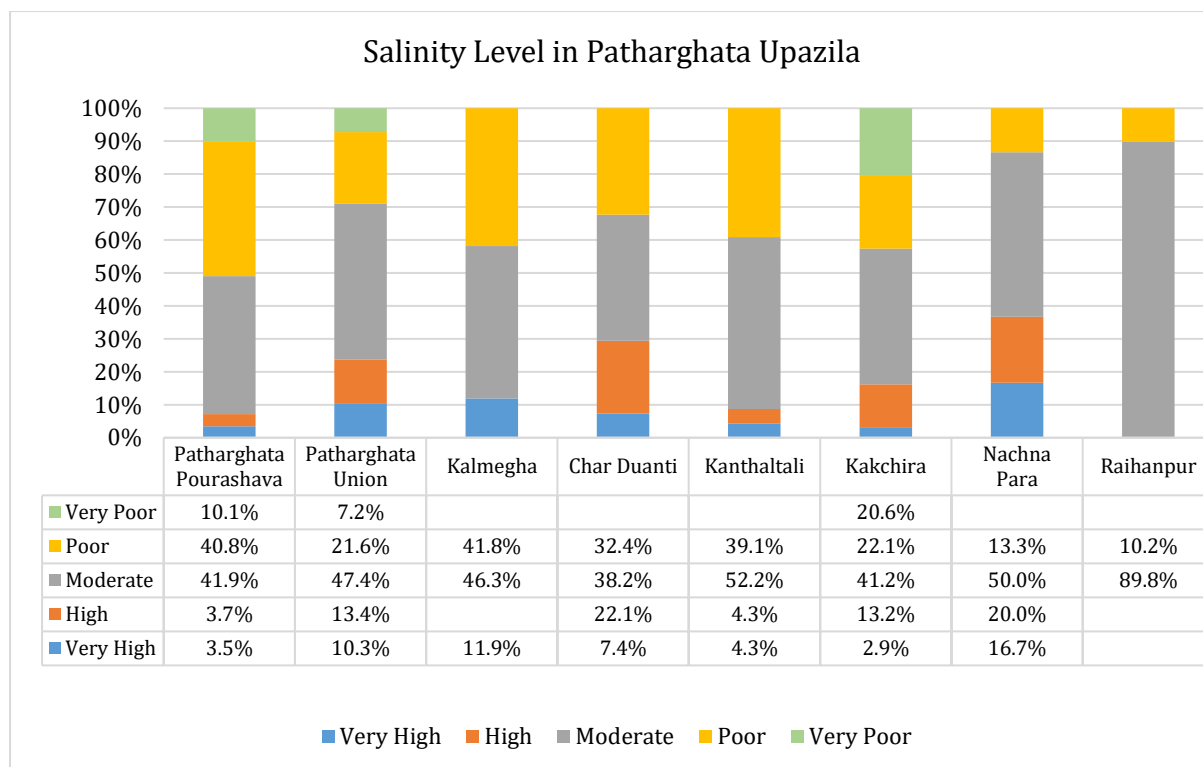


Source: Socio-economic Survey, 2018

**Figure 4. 104: Scenario of river erosion in Patharghata Upazila**

#### 4.11.5 Salinity Level

Different level of salinity has been mentioned by the people of Patharghata Upazila. In all union salinity level fall into the moderate category which occupies the percentage 46.4. The second level of salinity exist in Patharghata Upazila is poor which occupies the percentage 33.3. Without Raihanpur union, there are high (7.4%) to very high (5.6%) level of salinity in other areas of this Upazila.

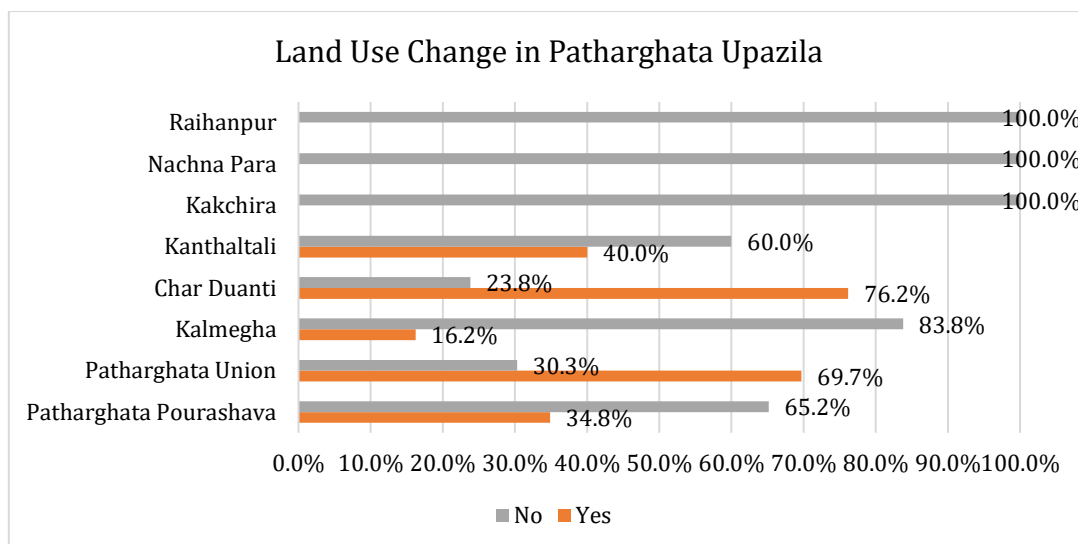


Source: Socio-economic Survey, 2018

**Figure 4. 105: Salinity level in Patharghata Upazila**

#### 4.11.6 Land Use Change

The scenario of land use change varies within the unions of Patharghata Upazila. According to the opinion of the people there is no change in land use in Raihanpur union, Nachna Para union and kakchira union. In kanthaltali union, 40% of people mention the land use change scenario, in Char Duanti union 76.2% people mention the scenario of land use change (Figure 4.106). The land use change scenario has been mentioned in the Patharghata paurashava and Patharghata union but people of Patharghata union think more land use change than the Patharghata paurashava.

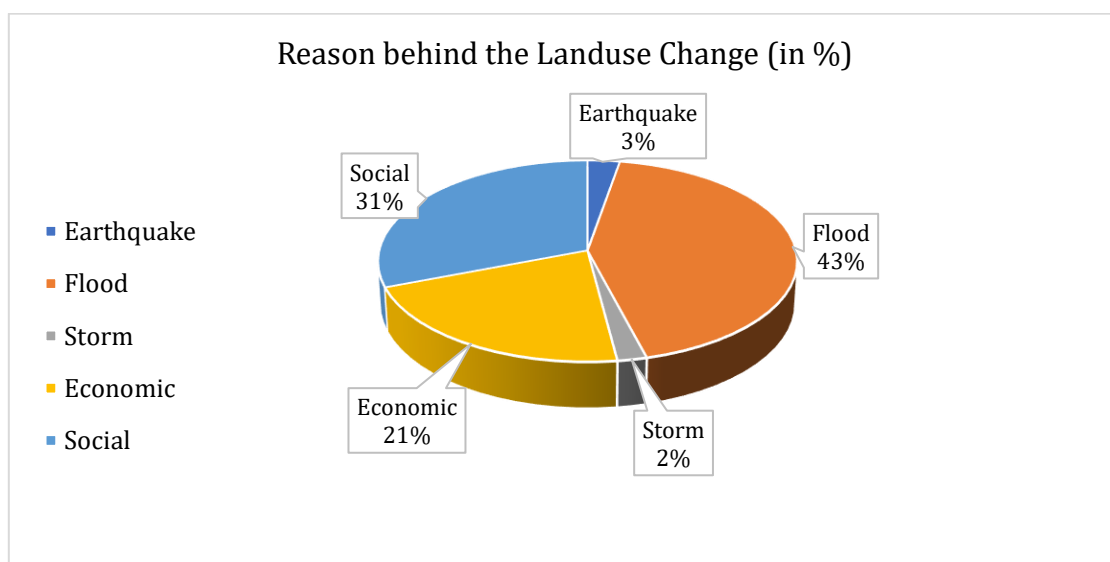


Source: Socio-economic Survey, 2018

**Figure 4. 106: Scenario of land use change in Patharghata Upazila**

#### 4.11.7 Causes of Land Use Change

The land is the podium of all activities of a human being. Land provides land and resources to a human being and the human being change the use of land by their activities. The people who perceive land use change in Patharghata Upazila among them 43% people figure out flood as a primary cause of land use change. Also, change in social condition and economic factor are also getting high in percentage (31% and 21% respectively) as the cause of land use change. Earthquake and storm in this area also have some minor impact on changing the land use of this area.



Source: Socio-economic Survey, 2018

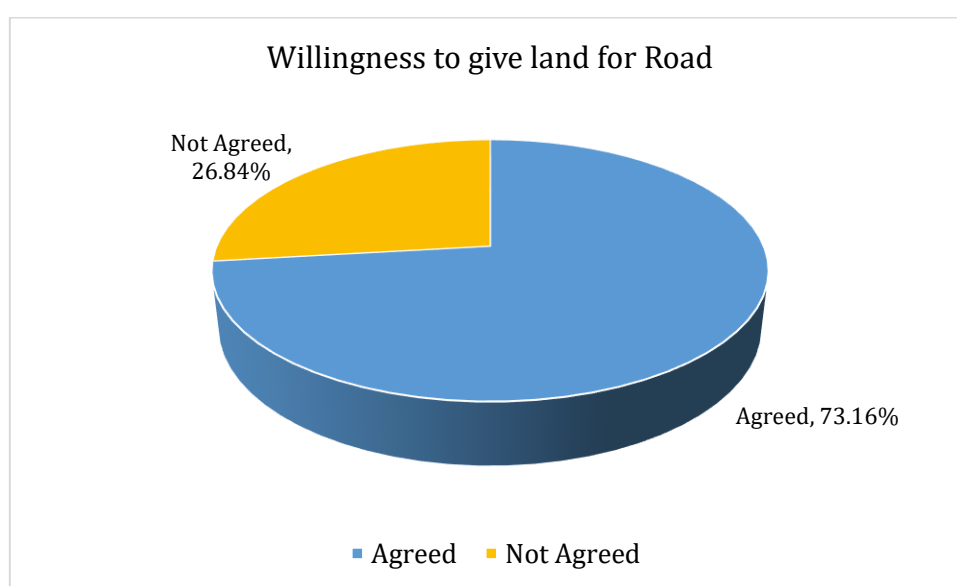
**Figure 4. 107: Causes of land use change in Patharghata Upazila**



## 4.12 Stakeholders participation for Planning and Development Control

### 4.12.1 People Willingness to Give Land for Road

One of the major problems in Patharghata Upazila is based on the road. In many areas of this Upazila, road width is not enough as well as bad or damaged road network. So, it is must to improve the present road network for sustainable development. For this, it is important to have people’s willingness for sacrificing their land for improving the present road network. About 73.16% of people agreed to give land for improving the road network where 26.84% of people are no agreed to sacrifice their land property for enhancing the present road network.



Source: Socio-economic Survey, 2018

**Figure 4. 108: Percentage of people willingness to giving land for road**

The people of Patharghata Upazila want to give land from 1 ft. to 6 ft. for improvement of road network. Most of the people (64.33%) want to sacrifice 2 ft. land for this purpose.

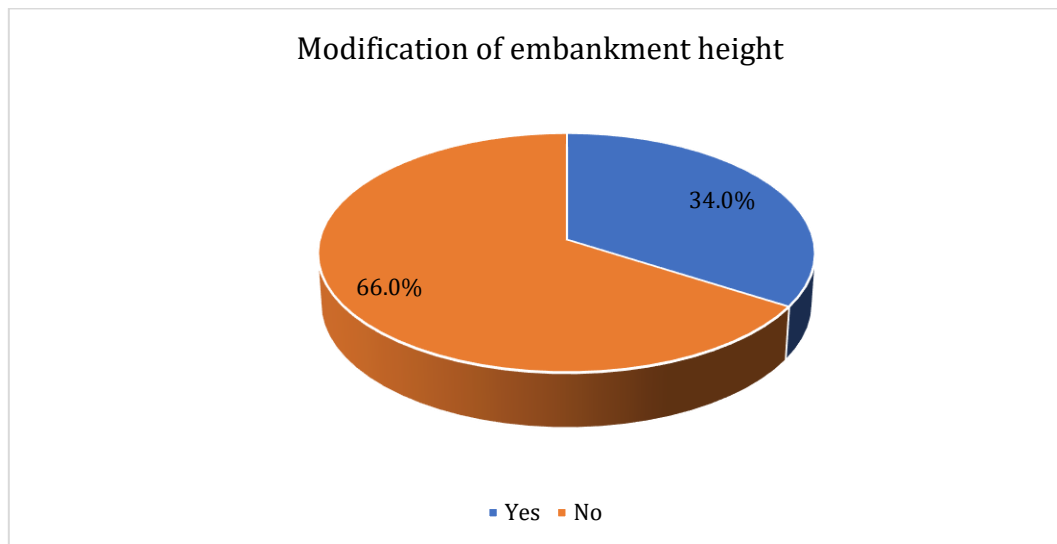
**Table 4. 29: Percentage of giving land for road**

Land for Road (ft)	Percentage
1	12.97%
2	64.33%
3	14.85%
4	4.78%
5	2.90%
6	0.17%
<b>Total</b>	<b>100%</b>

Source: Socio-economic Survey, 2018

#### 4.12.2 Modification of Embankment

Regarding modification of embankment, people have a different opinion. Most of the people (66%) mention the need for embankment modification but another 34% of people think no need for modification of the embankment.

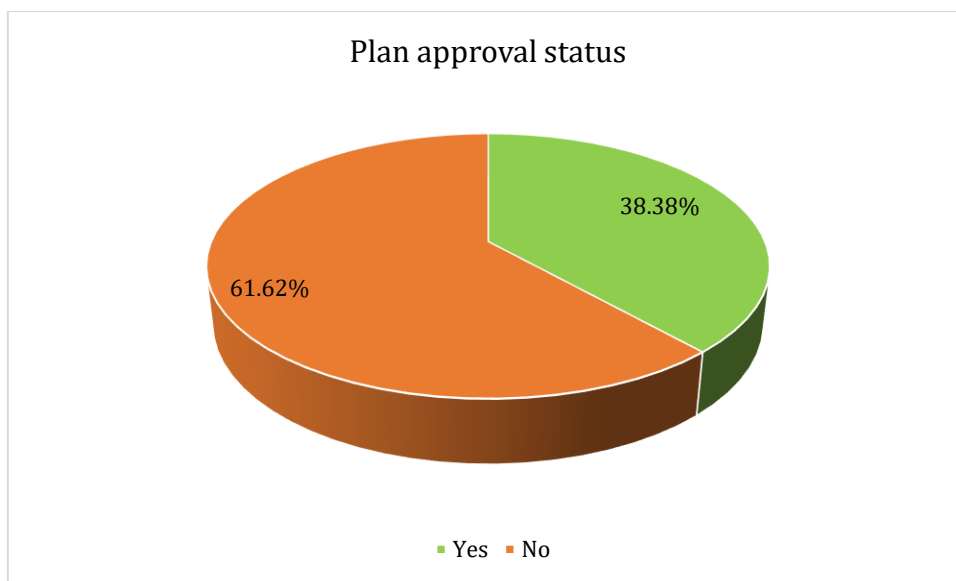


Source: Socio-economic Survey, 2018

**Figure 4. 109: People's perception on modification of embankment height**

#### 4.12.3 Plan Approval Status

In spite of having building construction rules for the urban and rural area of Bangladesh, taking approval from the prescribed authority has been practiced for the urban area. In Patharghata paurashava which is the urban area within this Upazila 38.38% people take approval from the paurashava authority and another 61.62% people don't take approval from the paurashava authority.

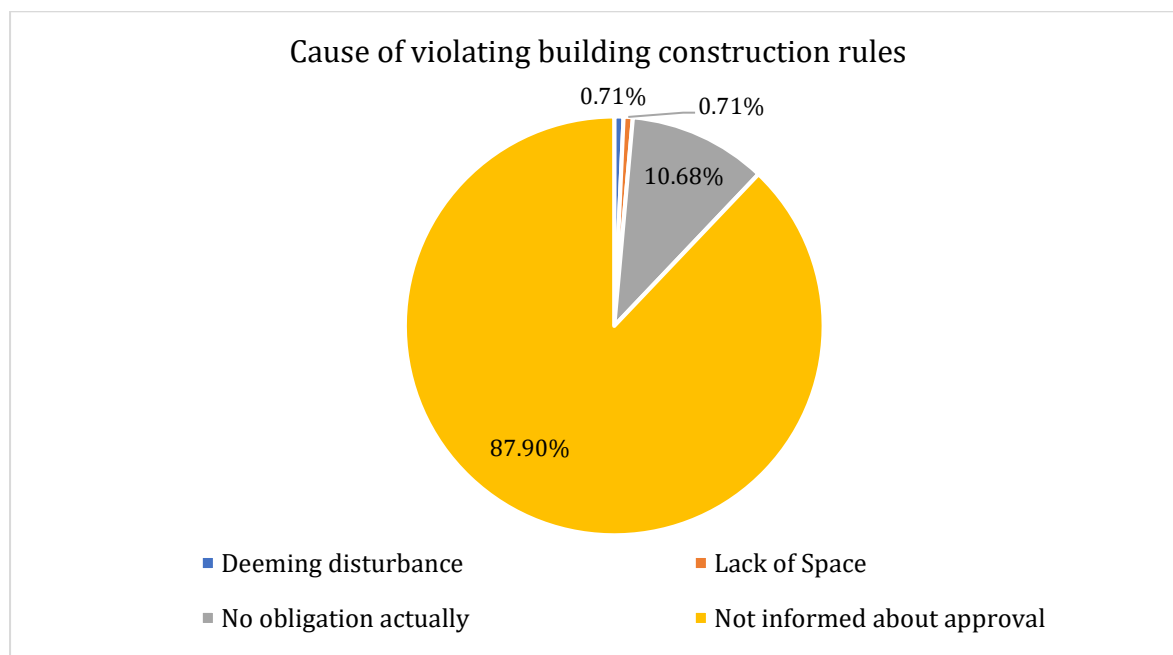


Source: Socio-economic Survey, 2018

**Figure 4. 110: Plan approval status in Patharghata Upazila**

#### 4.12.4 Causes of Violating Building Construction Rule

Most of the people (87.90%) of Patharghata Upazila violating building construction rules because they are not informed about the rules and approval. There are 10% people who know the rules but there is no actual obligation for following the building construction rules so it is not followed. A few people violating the rules for lack of space and deeming disturbance.



Source: Socio-economic Survey, 2018

**Figure 4. 111: Causes of violating the building construction rules**

### 4.13 SWOT Analysis of Patharghata Upazila

Assessment of strengths, weaknesses, opportunities, and threats of an area forms the basis for preparation of a relevant comprehensive plan. An Upazila level SWOT analysis has been done in this section based on an assessment of the status of the socio-economic condition of Patharghata Upazila. The objective of this exercise is to build on strengths, which act as drivers of growth, and address weakness by establishing a long-term vision for growth and development, and establishing clear development strategies, so as to take advantage of opportunities in diverse economic sectors, social development and inward investment and also, to mitigate potential risks and threats which the city is likely to face in future. Moreover, SWOT analysis is intended to maximize strengths and opportunities, minimize external threats, transform weaknesses into strengths and to take advantage of opportunities along with minimizing both internal weaknesses and external threats.

**Table 4. 30 SWOT analysis of Patharghata Upazila based on socio-economic survey findings**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• The topographic profile with surrounding river provides a natural water collection setup in this Upazila</li> <li>• Availability of electricity in the urban area</li> <li>• The agricultural economic base especially fisheries agriculture of this area opens the face of agro economic development of this Upazila</li> <li>• Availability of open space in the urban and rural area of Patharghata Upazila</li> </ul>	<p><b>Weakness</b></p> <ul style="list-style-type: none"> <li>• Lack of the formal drainage system and safe septic tank in paurashava area</li> <li>• Embankment height is not sufficient as per requirement</li> <li>• Water collection problem for the people of some union</li> <li>• The inadequacy of the transport network</li> <li>• Poor infrastructural facilities for waste disposal</li> <li>• Water logging during the rainy season</li> <li>• Lack of drinking water, transport mode, good educational institution</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• People are willing to give unbind land for road widening purpose</li> <li>• Improving road network connectivity within and outside the Upazila.</li> <li>• Prioritizing sewerage and sanitation system which would improve the living environmental quality of this Upazila.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• The frequent occurrence of a climatic disaster like cyclone which can change the socio-economic and natural setting of this area</li> <li>• Climate change effect especially temperature rising can degrade the living environmental quality of Patharghata Upazila</li> </ul>

<ul style="list-style-type: none"> <li>• Agro-based economic development can improve the lives of rural people.</li> <li>• The dominance of Katcha structure indicates future options of planned development of this area.</li> </ul>	<ul style="list-style-type: none"> <li>• Filling up of canals or other water bodies for the purpose of development can disrupt the natural drainage system in the urban and rural area</li> </ul>
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#### 4.14 Conclusion and Recommendations

This section encompasses with a summary of findings of the socio-economic survey and recommendations. It puts forward some recommendations for planning interventions in the project area.

##### 4.14.1 Summary of Findings

The project area is predominantly agricultural in character. It has been analyzed that most of the people of Barguna Sadar and Patharghata Upazila are highly dependent on agriculture. About 86.5 percent of people depend on agricultural product and marketing in Barguna Sadar Upazila and 62.5% people depend on agricultural product and marketing in Patharghata Upazila. It indicates that most of the people work in the agricultural field and fisheries related agricultural sector. As there is no major industrial hub in this area the dependency on industrial product and marketing is very low: 3.6% in Barguna Sadar Upazila and 1.2% in Patharghata Upazila. The socio-economic condition of urban and rural households of Barguna Sadar Upazila and Patharghata Upazila varies with education, occupation, income, living condition, access to services and facilities, etc. single type households are found mostly in Barguna Sadar Upazila and Patharghata Upazila. Most of the people are involved in agricultural activity. Students are found in comparatively large quantity. Income and expenditure are higher in urban than that of rural. A number of dependent age people are found higher and thus there is an opportunity to involve this population in development activity maximizing utilization of resources. Most of the households are found the permanent residence of Barguna Sadar Upazila and Patharghata Upazila. Basic services are present in almost every area but not at a satisfactory level. There are a few options for recreation for the dwellers. Rickshaw and walking are the main transport mode for generating trips for a different purpose in these both Upazila. Water logging is the most frequent disaster occurred in Barguna Sadar Upazila and Patharghata Upazila and situation of water logging exist 1 to 3 hours in most of the cases. A major problem in these two Upazila is lack of adequate transport infrastructure and transport mode which should be the planning intervention in the project area. However, 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.

#### **4.14.2 Recommendations on Planning Considering Social Justice**

This section provides some recommendations based on the findings of the socio-economic survey in Barguna and Patharghata Upazila. The recommendations are provided to give the answer to the question, which issues will be encountered when preparing comprehensive development planning proposals for these two Upazila.

The SWOT analysis that has been performed for these two Upazila helps to determine appropriate planning interventions. Following that, strategic alternatives are selected in the light of the strengths, weaknesses, threats, and opportunities as determined through internal and external environment. Moreover, SWOT analysis is intended to maximize strengths and opportunities, minimize external threats, transform weaknesses into strengths and to take advantage of opportunities along with minimizing both internal weaknesses and external threats.

##### **4.14.2.1 Recommendations for Barguna Sadar Upazila**

The recommendations are provided here for strategic and land use planning interventions in Barguna Sadar Upazila.

- ℞ Ensure proper utilization of natural resources to conserve existing ecological setup in Barguna Sadar Upazila
- ℞ Provides modern facilities for agricultural development as well as provides physical infrastructures
- ℞ Utilize each plot of land according to its highest potentials that means land should be used for a specific purpose based on its suitability
- ℞ Improve sewerage and sanitation related services for ensuring living environmental quality of this area
- ℞ Ensure safe embankment to provide protection from climatic disasters like Sidar, Ayla, etc.
- ℞ Provide sufficient source of drinking water in the urban and rural area in normal time as well as during flood time
- ℞ Improve transport network to ensure strong connectivity between urban and rural area as well as with surrounding area
- ℞ Prepare land use plan considering disaster risk reduction measures
- ℞ Conserve the existing natural drainage system and provide adequate formal drainage in an urban area to reduce the incident of water logging
- ℞ Upgrade the quality of the existing educational institution and provide more educational institutions in this area

#### **4.14.2.2 Recommendations for Patharghata Upazila**

The recommendations are provided here for strategic and land use planning interventions in Patharghata Upazila.

- ℞ Conserve existing ecological setup by ensuring proper utilization of natural resources in Patharghata Upazila
- ℞ Provide physical infrastructures and modern facilities for agricultural development in crop agriculture, fisheries agriculture, and poultry agriculture
- ℞ Improve sewerage and sanitation related services for ensuring living environmental quality of this area
- ℞ Ensure safe embankment to provide protection from climatic disasters like Sidar, Ayla, etc.
- ℞ Provide sufficient source of drinking water in the urban and rural area in normal time as well as during flood time
- ℞ Upgrade the quality of the existing educational institution and provide more educational institutions in this area
- ℞ Improve transport network to ensure strong connectivity between urban and rural area as well as with surrounding area
- ℞ Prepare land use plan considering disaster risk reduction measures
- ℞ Conserve the existing natural drainage system and provide adequate formal drainage in an urban area to reduce the incident of water logging

## CHAPTER 5: KEY LEARNINGS FROM SOCIO-ECONOMIC SURVEY

### 5.1 Key Learnings

Purpose of this chapter is to identify the shortcoming of this survey.

- ⊙ There are no data about how many families shifted from this area to other areas. In the questionnaire, there should be a question about it.
- ⊙ It should be identified that which specific reason/s is responsible for increased and decreased migration rate in a specific range of the year. From this, it can be understood that such kinds of reasons may cause future migration.
- ⊙ Weather migrated peoples living standard is increased or decreased should be addressed. This analysis will identify that migrated people living in the area are satisfied they may influence their relatives to migrate in the study area.
- ⊙ Should be an analysis of the role of migrated people in regional economics. These analysis findings will be which employment attracted them.
- ⊙ There should a question in the questionnaire, when did your house drown/ affected by natural disaster and which year? From this question, it can be understood that plinth height needs to be increased according to the severity of the disaster.
- ⊙ In the questionnaire, there should be another question about during rainy season water level reached in plinth height. This data will understand safe plinth height of houses.
- ⊙ The question that is asked for building approval should not be the same for the rural and urban area because urban people know about is it and rural people don't know about it.
- ⊙ For analysis, considered only 'Barguna Paurashava' other unions are not considered because rural people aren't aware of building approval like urban people.
- ⊙ In the questionnaire, there should be a question about the tax payment of houses, consequently, it would be clear that the house listed or not in the book of authority.
- ⊙ Causes of not considering building approval are not appropriate for the rural area because the physical structure of rural area not the same as an urban area, in the questionnaire, should be different based on urban and rural area.
- ⊙ Should be taken an FGD (Focus Group Discussion) analysis to find other reasons of taken not approval of building construction rule.
- ⊙ The main reason for not taking building approval is 'don't know' so need to inform them among urban and rural area people.
- ⊙ In the rural area of Barguna Upazila, there is no drain for waste management. Because of overpopulation, some areas are developing the same as an urban area, that area should be established drainage system for waste management.
- ⊙ In the study area, water quality is good but taking a long time for collecting water is a problem. So, it is necessary to establish a source of water within the shortest distance from their houses.



- ⊙ Statistics showed that 68% of people use rainwater at the time of the flood. In the area, it is necessary to establish system installment for collecting safe rainwater and preserving water in the study area so that people can use rainwater at flood time.
- ⊙ Paurashava under Barguna Upazila and Patharghata Upazila large share of people using electricity service but most of the rural area electricity is not reached at all. In the Upazila, most of the people should be under the electricity service.
- ⊙ In the study area, most of the people use mode rickshaw and motorcycle as a traveling mode. They found walking to move here and there (Short distance). The rate of bicycle using is not so high, it is necessary to establish bicycle-friendly features in the area to increase bicycle users.
- ⊙ Every union and parurashava of Barguna Upazila facing a serious problem of river erosion, land protection step should be taken otherwise built environment may be destroyed.
- ⊙ In Barguna Upazila and Patharghata Upazila most of the people depend on agriculture, a different source of income should be produced otherwise repeated use of agricultural land may be decreased its fertility.
- ⊙ In Barguna Upazila water logging last mostly within one to three hours, to minimize this problem need to proper drain management and establish embankment at the selective area. The water catchment area has to contain 6 hours of rainwater. The scenario is almost the same for the Patharghata Upazila.
- ⊙ The main cause of water logging in these two Upazila is low geographical elevation but most of the area in the Upazila there is no drainage system. If, proper drainage system include in urban area and embankment in a rural area can be possible to minimize this problem.
- ⊙ In the study area 43% of its land use changed, the flood is mainly responsible for this change. Flood management techniques and disaster recovery strategy should be taken in the area.
- ⊙ For specific members, the information that will have to be needed to collect should be incorporated into the apps fixed after the consultation with PD. For example, we collect a few questions for the family members that's why many important findings can't be explored. Suppose, loan status. As for every member we get the employment status. Besides, if we get the loan status as well then it will be possible to explore loan status against every occupational group under each geographical location.
- ⊙ Rather than asking questions to the respondents about land use changes, it would be fruitful if analysis of google earth images or satellite images would be performed. Because people's speech is totally vague and can't be measurable as well. If it is asked to the people about reasons behind the change of land uses after analyzing images then it will be authentic.

## Annexure 1: Questionnaire

পায়রা বন্দর নগরী ও কুয়াকাটা উপকূলীয় অঞ্চলের পরিবেশ-পর্যটনভিত্তিক সমন্বিত পরিকল্পনা প্রণয়ন

নগর উন্নয়ন অধিদপ্তর

৮২, সেগুনবাগিচা, ঢাকা-১০০০, বাংলাদেশ

নমুনা নম্বর..... ফিজিক্যাল ফিচার আই ডি .....

জরিপের তারিখ.....

### ১. জরিপ তালিকা :

১.১ গ্রাম / মহল্লার নাম :

১.২ মৌজার নাম/ওয়ার্ড.....

১.৩ সাক্ষাতকার প্রদানকারীর নাম & :

### ২. পরিবার পরিচিতি (Household Info.)

২.১ পরিবার প্রধানের নাম :

২.২ পরিবারের মোট সদস্য :.....

২.৩ পরিবারের ধরণ : ১. একক

২. যৌথ

২.৪ ধর্ম

: ১. মুসলিম

২. হিন্দু

৩. বৌদ্ধ

৪. খ্রীষ্টান

৫. অন্যান্য

২.৫ বর্তমান ঠিকানা : বাড়ীর নম্বর/দাগ নম্বর :

ল্যান্ড মার্কঃ

রাস্তার নাম/নম্বর :

### ৩. খানার জনসংখ্যা ও আর্থ সামাজিক বৈশিষ্ট্য ( HH Pop & Socio - Economic Condition)

খানা প্রধানের সাথে সম্পর্ক	বয়স	লিঙ্গ ১= পুরুষ, ২= মহিলা	বৈবাহিক অবস্থা ২. কোড	শিক্ষা (বয়স ৫+) ৩. কোড	পেশা ৪. কোড

কোড :

১-খানা প্রধানের সাথে সম্পর্ক	১. খানা প্রধান	২. স্ত্রী/স্বামী	৩. পুত্র/কন্যা	৪. পিতা/ মাতা	৫. ভাই/বোন	৬. চাচা/চাচি
	৭. ভাতিজা/ভাতিজি	৮. মামা/মামি	৯. ভাগ্নে/ভাগ্নি	১০. নাতি/নাত্নি	১১. পুত্রবধু/জামাতা	১২. অন্যান্য (উ.ক.)
২- বৈবাহিক অবস্থা	১. অবিবাহিত	২. বিবাহিত	৩. বিধবা/বিপত্নিক	৪. তালাক প্রাপ্ত	৫. পৃথক	
৩- শিক্ষা	১. নিরক্ষর	২. প্রাথমিক	৩. নিম্ন মাধ্যমিক	৪. মাধ্যমিক	৫. এস.এস.সি/ দাখিল	৬. এইস.এস.সি/ আলিম
	৭. ডিগ্রি/অনার্স/ফাযিল	৮. ডাঃ/প্রকৌঃ/এ্যাডঃ	৯. মাস্টার্স ও উর্ধে	১০. টেকনিক্যাল ডিগ্রী	১১. অন্যান্য	
৪- পেশা	১. সরকারী	২. স্বায়ত্তশাসিত	৩. বেসরকারী	৪. স্বনিয়োজিত (উ.ক.)	৫. ব্যবসা (ক্ষুদ্র / মাঝারি)	৬. কৃষি
	৭. দক্ষ শ্রমিক	৮. অদক্ষ শ্রমিক	৯. শিল্প কারখানায়	১০. নির্মাণ কাজ	১১. পরিবহন কাজ	১২. গৃহস্থালী কর্মি
	১৩. দিন মজুর	১৪. মুদি দোকান	১৫. ছাত্র	১৬. অন্যান্য (উ.ক.)		

### ৪. পরিবারের মাসিক আয় (Income)

৪.২ বিদেশ থেকে প্রাপ্ত আয় কত?

৪.৩ পরিবারের মোট আয়

৫. পরিবারিক মাসিক ব্যয় (টাকায়)

বাড়ী ভাড়া বাবদ	খাদ্য	যাতায়াত	স্বাস্থ্য	পোষাক	শিক্ষা	বিদ্যুৎ, জ্বালানী, টেলিফোন ইত্যাদী

৬. আপনার মাসিক সঞ্চয় কত?.....

৬.১ কোথায় সঞ্চয় করেন? ১। ব্যাংক ২। সমিতি ৩। এন জি ও ৪। নিজের কাছে

### ৭. ঋন (Savings)

৭.১ আপনার ঋন আছে কিনা? ১. হ্যাঁ ২. না

৭.২ ঋন কোথা থেকে নিয়েছেন?

৭.৩ আপনার মাসিক কিস্তির পরিমাণ কত?

### ৮. অভিগমন তথ্য (Migration)

৮.১ খানা প্রধানের জন্মস্থান কি এই এলাকায়? ১. হ্যাঁ ২. না

উত্তর না হলে খানা প্রধানের আন্তঃগমন (অন্য জেলা থেকে) সম্পর্কিত তথ্য দিন :

৮.২ খানা প্রধান কোন এলাকা থেকে এসেছেন? .....

৮.৩ কত সালে এসেছেন? .....

৮.৪ কার সাথে এসেছেন? .....

৮.৫ খানা প্রধানের আন্তঃ গমনের কারণ (টিক চিহ্ন দিন)

১. কর্মস্থল	২. রাজনৈতিক	৩. বৈবাহিক	৪. ব্যবসায়িক	৫. উন্নত শিক্ষা
৬. নদী ভাঙ্গন	৭. আর্থিক স্বচ্ছলতা	৮. ঘূর্ণিঝড়	৯. বন্যা	১০. অন্যান্য

৮.৬ পরিবারের কোন সদস্য নিজ এলাকার বাহিরে থাকেন কি না ( টিক চিহ্ন দিন) ১. না ২. দেশে(স্থায়ী/অস্থায়ী) ৩. বিদেশে(স্থায়ী/অস্থায়ী)

৮.৭ নিজ এলাকার বাহিরে থাকার কারণ কি ( টিক চিহ্ন দিন)

১. চাকুরী/ কর্মস্থল	২. বৈবাহিক কারণ	৩. পরিবেশগত কারণে	৪. উন্নত শিক্ষা	৫. দারিদ্র
৬. সামাজিক অস্থিরতা	৭. ব্যবসায়িক	৮. অন্যান্য (উ.ক.)		

৮.৮ কতদিন পর পর নিজ এলাকায় ফিরে আসেন (টিক চিহ্ন দিন) ১. ১-৭ দিন ২. ৭-১৫ দিন ৩. ১৫-৩০ দিন ৪. ৩০+ দিন

### ৯. জমি ও গৃহ (Land and Housing)

৯.১ খানা প্রধান বসবাসের বাড়ি / জমির / ফ্ল্যাটের মালিক কি না? ১. হ্যাঁ ২. না (৯.৪ থেকে ৯.১৩ পর্যন্ত বাদ দিন)

৯.২ বাড়ীর কাঠামোর ধরণ (টিক চিহ্ন দিন) ১. পাকা ইমারত (তলা.....) ২. সেমি পাকা ৩. কাঁচা ৪. ঝুপড়ি

৯.৩ আপনার বাড়ির উঠানসহ ১) আয়তন (বর্গফুট).....২) ঘরের সংখ্যাঃ.....৩) অন্যান্যঃ .....

৯.৪ বাড়িটির নির্মাণ কাজ কাল ?.....

৯.৫ বাড়ির ভিটর/ পিড়ার উচ্চতা (Plinth Height) কত?.....

৯.৬ বাড়ীর পান পৌরসভা কর্তৃক অনুমোদিত কি না (টিক চিহ্ন দিন) ১. হ্যাঁ ২. না

৯.৭ বাড়ী নির্মাণে আইন মেনে না থাকলে কারণ কি?

১. এ ব্যাপারে অবগত নন	২. তেমন বাধ্যবাধকতা নেই	৩. ঝামেলা মনে করে	৪. জায়গা কম তাই	৫. অন্যান্য(উ.ক.)
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### ১০. অবকাঠামোগত সুবিধাদি (Infrastructural Facilities)

১০.১ প্রধান রাস্তার সমস্যা (টিক চিহ্ন দিন)ঃ ১.যানজট ২.অপ্রশস্ত ৩.বর্জ্য ও হকার দ্বারা রাস্তা দখল ৪.অন্যান্য(উ.ক.)

১০.২ বেড়ীবাঁধের উচ্চতা কত?..... বাড়িতে হবে কি না? ১. হ্যাঁ ২.না

১০.৩ ড্রেন (টিক চিহ্ন দিন): ১.পাকা ২.কাচা ৩.নাই

১০.৪ পানির উৎস (টিক চিহ্ন দিন): ১.পাইপ লাইন ২.টিউবয়েল ৩.কমন টিউবয়েল ৪.খাল/নদী ৫.পুকুর ৬.অন্যান্য (উ.ক.)

১০.৫ বন্যাকালীন খাবার পানির ব্যবস্থা কি? .....

১০.৬ পানির সরবরাহ পর্যাপ্ত কি-না (টিক চিহ্ন দিন): ১. হ্যাঁ ২.না

১০.৭ পানি মান (টিক চিহ্ন দিন): ১.পানযোগ্য ২.পানযোগ্য নয় ৩.আর্সেনিক যুক্ত ৪.গন্ধ যুক্ত ৫.অন্যান্য(উ.ক.)

১০.৮ পানি সংগ্রহের সমস্যা (টিক চিহ্ন দিন): ১.সংগ্রহে দীর্ঘ সময় লাগে ২. উৎস দূরে ৩. অনিয়মিত সরবরাহ ৪. অন্যান্য

১০.৯ বৃষ্টির পানি সংগ্রহের কোন ব্যবস্থা আছে কি না? ১. হ্যাঁ ২.না

১০.১০ জালানী উৎস (টিক চিহ্ন দিন): ১.সিলিন্ডার গ্যাস ২.পাইপ গ্যাস ৩.কেরোসিন ৪.লাকড়ি ৫. বৈদ্যুতিক হিটার ৬. বায়োগ্যাস ৭.অন্যান্য

১০.১১ আলোর উৎস (টিক চিহ্ন দিন): ১.বিদ্যুৎ ২.কুপি/বাতি/হেরিকেন ৩ মোমবাতি ৪ সৌর বিদ্যুৎ ৫.অন্যান্য (উ.ক.)

১০.১২ পয়ঃনিষ্কাশনের ধরন (টিক চিহ্ন দিন): ১.কাচা ২ সেমি পাকা ৩.পাকা ৪.অন্যান্য

১০.১৩ পয়ঃনিষ্কাশন ব্যবস্থা স্বাস্থ্যসম্মত কি-না (টিক চিহ্ন দিন): ১. হ্যাঁ ২.না

১০.১৪ আবর্জনা ফেলার স্থান (টিক চিহ্ন দিন): ১.খাল/নদীতে ২.বাড়ীর বাইরে ৩.ডাষ্টবিন ৪.বাড়ী থেকে সংগ্রহ কও নেওয়া হয় ৫.মাটির গর্তে ৬. অন্যান্য

১১. সামাজিক সুবিধাদির অবস্থা : স্বাস্থ্য, শিক্ষা, চিকিৎসাবিনোদনের সুবিধাদির অভাব

১১.১ গত এক বছরে আপনার পরিবার কি কি রোগে আক্রান্ত হয়েছিল? (টিক চিহ্ন দিন) ১. হ্যাঁ ২. না

পানিবাহিত : ১. আমাশয় ২. ডায়রিয়া ৩. চর্ম ৪. জন্ডিস ৫. অন্যান্য

বায়ু বাহিত : ১. সর্দি কাশি ২. যক্ষ্মা ৩. অন্যান্য

অন্যান্য রোগ : ১. হার্ট এ্যাটাক ২. ডায়বেটিকস ৩. কিডনি ৪. মশাবাহিত ৫. অন্যান্য (উ.ক.)

১১.২ চিকিৎসার জন্য কোথায় যান (টিক চিহ্ন দিন):

১. ডিগ্রিধারী ডাক্তার ২. সরকারী হাসপাতাল ৩. গ্রাম্য চিকিৎসক ৪. দাতব্য চিকিৎসালয় ৫. প্রাইভেট ক্লিনিক  
৬. কমিউনিটি ক্লিনিক ৭. ঔষাধলয় (প্রাকটিশনার) ৮. হোমিও ডাক্তার ৯ হেকিম / কবিরাজ ১০. অন্যান্য (উ.ক.)

১১.৩ আপনার সন্তান বিদ্যালয়ে যায় কি না (টিক দিন) ১. হ্যাঁ ২. না (হলে ১১.৮ প্রশ্ন হবে)

১১.৪ আপনার সন্তান শিক্ষা প্রতিষ্ঠানে না যাওয়ার কারন : (টিক চিহ্ন দিন) ১. আর্থিক অস্বচ্ছলতা ২. শিশু শ্রমিক ৩. শিক্ষায় পরিবারের অনিচ্ছা ৪. পিতামাতার অনগ্রহ ৫. অন্যান্য (উ.ক.)

১১.৫ চিত্র বিনোদনের জন্য কোথায় যাওয়া হয় (টিক চিহ্ন দিন)

১. খেলার মাঠ	২. প্রাকৃতিক সৌন্দর্যমন্ডিত স্থান	৩. শপিং মল	৪. পার্ক	৫. ক্লাব
৬. পর্যটন স্থান	৭. মেলা	৮. জিমনেসিয়াম	৯. সিনেমা দেখা	১০. নদীর পাড়ে
১১. সমুদ্র সৈকতে				

১১.৬ চিত্র বিনোদনের ধরণ (টিক চিহ্ন দিন) : ১. নিয়মিত ২. অনিয়মিত

১১.৭ বাসস্থান থেকে চিত্র বিনোদনের স্থানের দূরত্ব : ..... মি.

১১.৮ আপনার অবসর সময় কিভাবে কাটান (টিক চিহ্ন দিন) : ১. টেলিভিশন দেখে ২. বই পড়ে ৩. আত্মীয়ের বাসায় বেড়ানো  
৪. গৃহস্থালীর কাজ করে ৫. অন্যান্য (উ.ক.)

১১.৯ সার্ভিস :

সার্ভিস	বাহন	সময়	সেবার মান
বাজার			
বিপণী কেন্দ্র			
পোস্ট অফিস			
ফায়ার সার্ভিস			
হাসপাতাল			
অ্যাম্বুলেন্স			
কমিউনিটি সেন্টার / মিলনায়তন			

বাহন : ১. হেটে ২. রিকসা ৩. ভ্যান ৪. সাইকেল ৫. মোটর সাইকেল ৬. গাড়ী ৭. বাস ৮. মাইক্রোবাস ৯. অন্যান্য (উ.ক.)

সেবার মান : ১. ভাল ২. মোটামুটি ৩. খারাপ

১১.১০ ফায়ার সার্ভিসে যোগাযোগের মাধ্যম (টিক চিহ্ন দিন) : ১. হেটে ২. রিকসা ৩. ভ্যান ৪. সাইকেল ৫. মোটর সাইকেল ৬. গাড়ী  
৭. বাস ৮. মোবাইল / টেলিফোন

১২. প্রাকৃতিক ও অন্যান্য দুর্যোগ (Natural and others Disaster)

১২.১ আপনার এলাকার জলাবদ্ধতা আছে কি না? (টিক চিহ্ন দিন) ১. হ্যাঁ ২. না

১২.২ জলাবদ্ধতা থাকলে তার কারণ (টিক চিহ্ন দিন) : ১. নিচু এলাকা ২. পানি নিষ্কাশনের ব্যবস্থা নেই ৩. পানি নিষ্কাশন ব্যবস্থা বন্ধ ৪. অন্যান্য (উ.ক.)

১২.৩ জলাবদ্ধতা কত সময় পর্যন্ত স্থায়ী হয় (টিক চিহ্ন দিন) ১. ০-১ ঘন্টা ২. ১-৩ ঘন্টা ৩. ৩-৫ ঘন্টা ৪. ৫ ঘন্টার উর্ধে

১২.৪ স্লুইস গেটগুলো কার্যক্ষম আছে কি না? ১) হ্যাঁ ২) না

১২.৫ ২০০৭ এবং ২০০৯ এ যে ক্ষতি হয়েছে তার মাত্রা এবং বর্তমানে তার পুনরুদ্ধারের মাত্রাঃ

খাতসমূহ	সময়কাল					
	২০০৭ ও ২০০৯			২০১৮		
	সামান্য ক্ষতি	ক্ষতি হয়নি	সম্পূর্ণ ক্ষতি	সামান্য পুনরুদ্ধার	পুনরুদ্ধার সম্ভব হয়নি	সম্পূর্ণ পুনরুদ্ধার
ঘর-বাড়ি						
গৃহপালিত পশু						
কৃষি জমি ও শস্য						

১২.৬ আপনার এলাকায় ঘূর্ণিঝড় হলে, ১) সাল..... ২) ক্ষতির পরিমাণ (টাকা)..... ৩) প্রযোজ্য নয়

১২.৭ আপনার এলাকায় আগুন লাগলে, ১) সাল..... ২) ক্ষতির পরিমাণ (টাকা)..... ৩) প্রযোজ্য নয়

১২.৮ এলাকার খালগুলো ভরাট হয়ে গেছে কি না? ১) হ্যাঁ ২) না

১২.৯ জলোচ্ছাস হলে, ১) সাল..... ২) ক্ষতির পরিমাণ (টাকা)..... ৩) প্রযোজ্য নয়

১২.১০ দূর্যোগ মোকাবেলায় সবচেয়ে জরুরী কি কি বা কোন কোন পদক্ষেপ গ্রহণ করা উচিত বলে মনে করেন? ১.....  
২..... ৩..... ৪.....

১২.১১ লবনাক্ততার পরিমাণঃ ১. অনেক বেশি ২. বেশি ৩. মোটামুটি ৪. কম ৫. অনেক কম

১২.১২ এলাকায় নদীভাঙন আছে কিনা?

১২.১৩ আপনার এলাকাতে কোন ধরনের জলবায়ু পরিবর্তন লক্ষ্য করছেন? (টিক চিহ্ন দিন) ১) হ্যাঁ ২) না

### ১৩. এলাকার অন্যান্য সমস্যা (Other Problem)

১৩.১ এলাকার সর্বাপেক্ষা গুরুত্বপূর্ণ সমস্যা কোনটি (প্রথম হলে ১. দ্বিতীয় হলে ২. তৃতীয় হলে ৩. চতুর্থ হলে ৪. পঞ্চম হলে ৫. হিসেবে চিহ্নিত করুন) ?

লোডশেডিং যানজট	জানবাহন নেই	রাষ্ট্রঘাট নেই বা খারাপ	বর্জ নিষ্কাশনের জায়গার অভাব
বিদ্যুৎ সমস্যা	জলাবদ্ধতা	পয়ঃনিষ্কাশন	ভাল শিক্ষা প্রতিষ্ঠানের অভাব আইন শৃঙ্খলার অবনতি
খাবার পানির অভাব	বাজার দূরে	লবনাক্ততা	অন্যান্য (উ.ক.)

১৩.২ আপনার এলাকার অর্থনৈতিক ভিত্তি কি (টিক চিহ্ন দিন) ১) কৃষি পণ্য উৎপাদন ও বিপণন ২) শিল্প পণ্য উৎপাদন ও বিপণন ৩) সেবা খাত ৪) মৎস্য ৫) অন্যান্য (উ.ক.)

১৩.৩ আপনার এলাকা তে কনও ভূমি (খধহফ-ংব) ব্যবহার এর পরিবর্তন হয়েছে? ( টিক চিহ্ন দিন) ১) হ্যাঁ ২) না

১৩.৪ কেন ভূমি (খধহফ-ংব) ব্যবহার এর পরিবর্তন হয়েছে : ১. ভূমিকম্প ২. বন্যা ৩. বাড় ৪. অর্থনৈতিক ৫. সামাজিক ৬. অন্যান্য  
(উ.ক.)

১৩.৫ আপনার বাড়ির সামনের রাস্তা প্রশস্ত করনে জমি ছাড়তে ইচ্ছুক কি না ( টিক চিহ্ন দিন) ১) হ্যাঁ ২) না

১৩.৬ উত্তর হ্যাঁ হলে জমির পরিমাণ .....



## Annexure 2: Photographs

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**Photograph-01:** Meeting with Mayor of Barguna Sadar Pourashava (Right) and Patharghata Pourashava (Left)



**Photograph-02:** Meeting with Chairmen of Barguna Sadar Upazila (Right) and Patharghata Upazila (Left)



**Photograph-03:** Meeting with local people at tea stall in Barguna Sadar and Patharghata Upazila







**Photograph-04:** Training session for the socio-economic surveyors in Barguna Sadar Upazila



**Photograph-05:** Training on digital socio-economic survey using KoBo Toolbox and KoBo Collect app.



**Photograph-06:** Socio-economic survey in digital way using KoBo Toolbox and KoBo Collect app

Sl. No.	Latitude	Longitude	Photographs
1.	22.030188383333332	89.96419288333333	
2.	22.17969695	90.1647176	
3.	22.155408949999998	90.11325446666666	
4.	22.151353333333336	90.12741400000002	
5.	22.110557266666667	90.06786861666666	