REPORT
ON
DATA LINKING
WITH
MAIN GIS DATABASE

Socio-Economic & Other Related Surveys
(Package-4)

Report on Data Linking with Main GIS Database
Socio-Economic and Other Related Surveys
Preparation of Development Plan for Meherpur Zilla Project.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Urban Development Directorate (UDD)

Report on Data Linking with Main GIS Database

Socio-Economic and Other Related Surveys; Package-04 under Preparation of Development Plan for Meherpur Zilla Project.

Submitted to

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"Preparation of Development Plan for Meherpur Zilla Project."

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Chapter 1. Introduction

1.1 Overview of the Report

This survey report presents a comprehensive overview of the socio-economic conditions within the project area, serving as a critical input for the planning, implementation, and evaluation phases of the proposed development initiative. The report outlines the objectives, methodology, and key initial findings that will inform the creation of a strategic development plan tailored to local needs and opportunities.

The socio-economic survey was conducted to assess the community's demographic profile, socio-cultural composition, economic activities, and overall service levels. It captures the attitudes, needs, and aspirations of residents—essential factors for determining appropriate land use allocations and infrastructure requirements. Following the Terms of Reference (TOR), the survey focused on gathering household-level data on several core indicators: demographic characteristics (age, sex, household size), religious affiliation, educational attainment (primary, secondary, higher, and others), occupational patterns (government, private, business, farming, labor, etc.), and income levels (classified into lower, middle, and higher brackets).

The study relies on both primary and secondary data sources. Primary data was collected through structured questionnaires, interviews, and field visits, while secondary data was compiled from existing records, reports, and statistical databases. The findings of this report will guide evidence-based planning and decision-making, ensuring that the development strategy is inclusive, efficient, and responsive to community needs.

1.2 Objectives of the Study

The objectives of the work comprise the following:

a) Identify the socio-economic condition of the people of different strata and minority groups including tribes, and also identify people's aspirations, attitudes, and opinions towards the development of the area

b) Identification of needs and demands of the inhabitants for their development and the project area as a whole.

c) Prepare people-oriented, demand-driven planning and other relevant planning packages for the region.

d) Preparation of the physical quality of life index (PQLI) of the inhabitants of the project area.

e) Preparation of Socio-economic and other related survey reports containing spatial translation from the output of the survey findings.

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1.3 Scope of Work

The survey firm will conduct all necessary socio-economic and other surveys and studies for the project, prepare working papers on the relevant fields under study, and assist the UDD team members in preparing the final plan and all relevant reports till completion of the project.

At the same time, the firm would extend all necessary assistance, particularly in gathering and procuring all relevant socio-economic and cultural attribute data of each feature within the project area; GIS database operation and management, analysis, and preparation of all maps and reports till completion of the project. The firm shall also arrange workshops/seminars on collected data and information, findings, interpretation, and working papers, and conduct other ancillary activities relating to the project activities as directed by the PD, wherever necessary. UDD project team would conduct all PRA sessions and the survey firm would extend necessary assistance in communication with the mayor, ward councilors, Union Parishad Chairman, and other stakeholders as directed by PD for arranging the PRA sessions and collect all relevant data and information through a digital survey and upload the collected data to the website instantly through an online communication device; at the end of each month submit a report containing all information that has been uploaded to the website and ensure that all data and information are accessible to viewer.

The survey firm shall be responsible for the quality of data and information collected, data processing, cleaning and editing, and presentation into tabular form, including preparation of working papers as required by PD. The survey firm shall deliver all raw and processed data and working papers containing guidelines for preparing the planning package. It would emphasize the tourism development in and around Meherpur Upazila and the local people's livelihood needs and demands.

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Chapter 2. Location of the Project Area

2.1 Introduction

This chapter describes the basic information about the Meherpur District area. The information presented in this chapter has been collected directly from the field as well as from many other secondary sources, including the National Population Census Reports of BBS and other relevant documents.

2.2 The Project Location

The proposed project adopts a regional development approach that includes all three upazilas within Meherpur District—Meherpur Sadar, Mujibnagar, and Gangni—to ensure comprehensive and balanced growth. Situated in the southwestern region of Bangladesh, Meherpur District lies approximately between 23.60° to 23.90° North latitude and 88.50° to 88.75° East longitude, bordering India to the west. The district is recognized for its historical significance, fertile agricultural land, and strategic border location, which contribute to its socio-economic importance.

Figure 3.1 : Project Area Location

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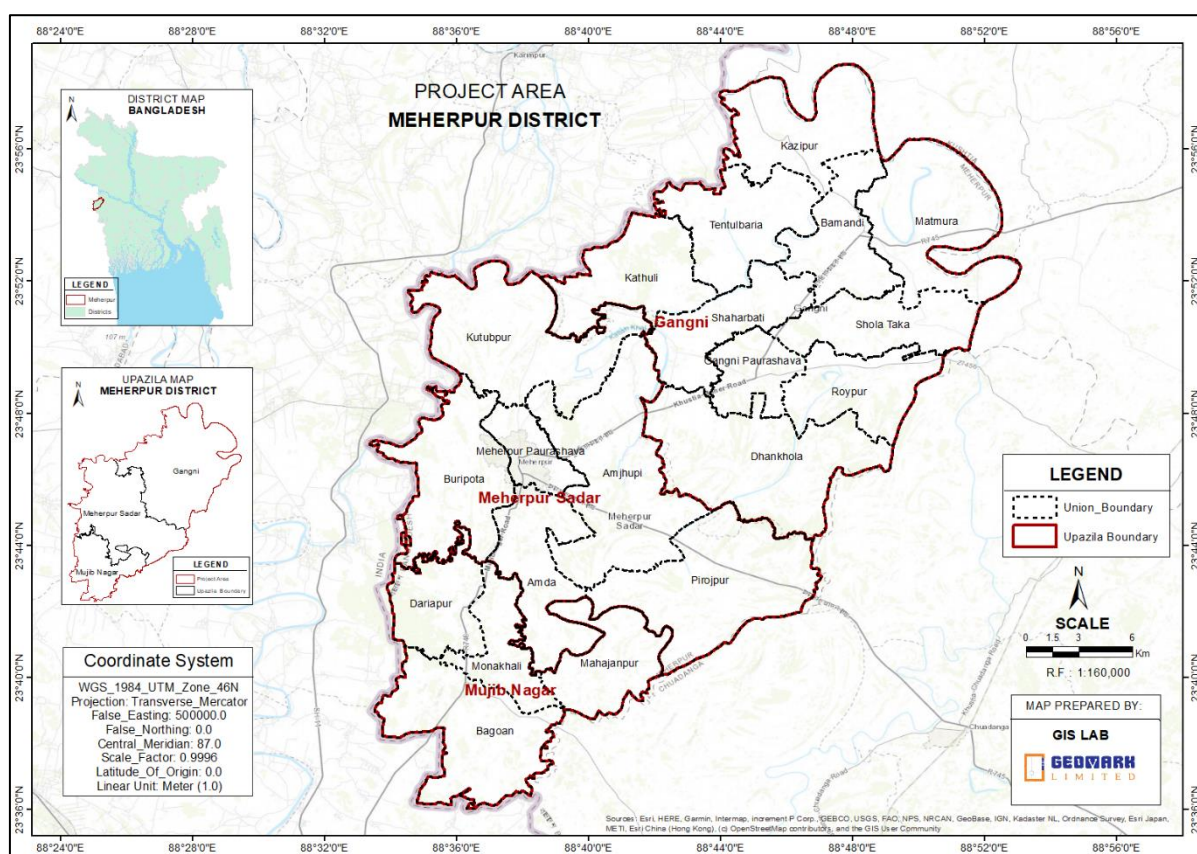
Meherpur Sadar Upazila, located around 23.7620°N, 88.6316°E, serves as the administrative and commercial hub of the district. It comprises one pourashava and seven unions, combining both urban and rural characteristics. The area is marked by expanding infrastructure, a growing economy, and increasing access to public services.

Mujibnagar Upazila, situated approximately at 23.7040°N, 88.5895°E, holds immense historical value as the site where the Provisional Government of Bangladesh was formed in 1971. Despite its rich cultural heritage, Mujibnagar continues to face developmental challenges, especially in terms of infrastructure, education, and healthcare facilities.

Gangni Upazila, the largest of the three in both area and population, is located around 23.8469°N, 88.7452°E. It includes one pourashava and nine unions, and is primarily an agricultural region with extensive crop production. The local economy is heavily dependent on farming, though the area also struggles with socio-economic disparities and environmental vulnerabilities, including periodic flooding.

By integrating all three upazilas into the project scope, the study aims to develop a regionally cohesive and inclusive planning framework. This will enable equitable allocation of resources, strengthen inter-upazila connectivity, and support sustainable development throughout Meherpur District.

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3. Approach and Methodology

3.1 Introduction

The approach methodology and work tasks to be performed to accomplish the stated objectives and activities are stated in the TOR and presented in this chapter. However, before presenting the methodologies, in light of the TOR, our understanding regarding the scope of work and the major steps of activities is discussed.

3.2 Mobilization

The Survey firm recognizes that one key requirement for the success of the work program will be the rapid and effective mobilization of the team members to start the required work without delay. This is generally true for all projects, but it's particularly true for the project's time-constrained survey work.

3.3 Discussion and Meeting with PD

Several meetings have been done with the project director and authorized person for socioeconomic and other survey components like questionnaire preparation, software integration, sample size delineation, etc., and developed questionnaires and software for socioeconomic and other surveys.

3.4 Questionnaire Preparation

Questionnaires are prepared based on the three theories. And they are

- Physical Quality of Life Index,
- Quality of Life and
- Cultural Capital Theory

For measuring the physical quality of life, three core indicators will be measured properly.

- Life Expectancy: Measures longevity.
- Infant Mortality Rate (IMR): Measures child survival.
- Literacy Rate: Measures education levels.

For measuring the quality-of-life index, 15 indicators influence the quality of life, where the indicators are divided into 37 sub-indicators. Develop the questionnaire based on a Likert scale (1 to 5),

- 1= Very Satisfied
- 2= Satisfied
- 3= Neither satisfied nor dissatisfied
- 4= Dissatisfied
- 5 = Strongly Dissatisfied

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Responses for each subcategory of the selected indicators from the sample population.

For measuring the cultural capital theory, develop the questionnaire based on a binary scale (yes and no)

- 1= Yes
- 2 = No

The final questionnaire has been attached in the annexure. The survey firm has also visited the related Pouroshava and the union office.

3.5 Collection of Documents

Basic data on population, Upazilla name, holding numbers in the project area will be needed etc. Most of this information will be collected from existing studies, plans, programs, government publications, public authorities, statistical digests, and documentation of external agencies.

3.6 Reconnaissance survey

The reconnaissance survey has already been completed, and the report has been submitted to the Urban Development Directorate. In conjunction with the data gathering, we will conduct a reconnaissance survey of the entire project area to evaluate, particularly the space zoning concerning layout, considering the overall service levels.

3.7 Survey Plan

This will be a highly qualified group of well-equipped and well-organized staff for its field survey.

3.7.1 Quality Control in the Field

- Use of online software based on advanced survey techniques,
- Maintain & monitor daily log sheets and level books in the field,
- Daily checking of the field equipment before starting the work,
- Routine check and calibration of the survey equipment,
- Frequent field visits by the joint team comprising the senior staff of consultants and project officials of UDD, and
- Interaction with project officials at the field level

3.7.2 Quality Control in the Office

- Daily review meeting with survey groups,
- Spatial and temporal Comparison of the survey data,
- Daily updating and processing of data and Maps, and

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- Frequent interaction and review meetings with project officials

In addition to those, progress as well as quality control of the survey and data processing work will be reviewed in the progress meeting by the project authority.

Major data gaps will be identified and will be collected through sector studies/surveys to be undertaken

3.8 Methodology of Database Preparation

Socioeconomic and other surveys like the formal and informal economy, archeology, Education, Religion, Sports, Recreation, Community and Socio-Cultural Services/Facilities, etc., will be done according to the ToR and discussed with the project director (PD).

3.8.1 Development of Database and GIS Analysis

One of the project aims is to develop a database for storing attribute data and linking it with spatial data for GIS analysis. A spatial database will be developed using all map features available in the physical features survey and land use survey map. The spatial database comprises the information captured during the digitization of the map using Arc/Info NT under the coordinate reference system.

Various attribute data will have to be linked with the spatial data for GIS development. A relational database management system will be developed using the DBase environment. The data collected from the secondary source and the primary source through socio-economic survey and inventory of existing infrastructure will be entered and stored in a database file. The structure of the database file will be designed in consultation with the Project Director, UDD. Checking and compilation of data will be carried out simultaneously for quality control.

3.8.2 Linking Attribute Data with Spatial Data

Integration of spatial data and attribute data is essential for GIS analysis. The attribute data database will be linked with the layers of themes to create various GIS analyses and queries using the view and table modules of the most popular ArcGIS software.

3.8.3 Data Delivery

Final data (socioeconomic and others) will be produced and delivered to the client for approval.

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4. Tasks and Activity Schedule

4.1 Data Collection

Socio-economic and Other related surveys (Urban and rural economy, social space studies, education, archeology, hotel/motel accommodation survey, etc. as specified in the ToR) collected through smart technology and manpower. And secondary data has been collected from different authentic sources.

4.2 Survey Equipment

Socioeconomic and other data were collected through an online communication device (tablet) compatible format (apps) Kobo Toolbox, which was developed in consultation with the UDD planner and project Director (PD).

4.3 Sample Size and Design

Meherpur District consists of three upazilas: Meherpur Sadar, Mujibnagar, and Gangni. These upazilas are further divided into two pourashavas and twenty unions. Two Paurashavas are recognized as urban areas, while twenty unions are classified as rural areas. According to ToR, the sample size will be 200 questionnaires for each urban area and 200 questionnaires for each rural area of each upazillas. A stratified random sampling technique is used to ensure the representation across different types of housing structures. The population was divided into three strata based on the type of housing

1. Pucca (permanent structures),
2. Semi-Pucca (semi-permanent structures), and
3. Kacha (temporary structures).

The division into these strata was based on predefined housing characteristics to ensure that all housing types were adequately represented in the sample. Within each stratum, households were selected randomly to avoid selection bias and provide each household with an equal chance of being included in the sample.

Based on the results of the statistical analysis,
Sample size Calculation:
$$n_h = (z^2)(r)(1-r)(f)(k)/(p)(\breve{n})(e^2)$$
n_h is the parameter to be calculated and is the sample size in terms of the number of households to be selected;
z is the statistic that defines the level of confidence desired;
r is an estimate of a key indicator to be measured by the survey;
f is the sample design effect, *deff*, assumed to be 1.2 to 2.0 (default value);

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k is a multiplier to account for the anticipated rate of non-response;

p is the proportion of the total population accounted for by the target population and upon which the parameter, r, is based;

$ň$ is the average household size (number of persons per household);

e is the margin of error to be attained.

Recommended values for some of the parameters are as follows:

The z-statistic to use should be 1.96 for the 95-percent level of confidence.

$r = 0.05, f=1.2, k=1.1, p=1, ň = 4.51, e = 0.12r=0.006$

Therefore,

n_h = (1.96^2) (0.05) (.95) (1.2) (1.1)/ (1) (4.51) (0.006^2)

n_h = 1484

So, the study will be significant if the minimum sample size is 1484

Now, the sample size is 216 for each pourashava in each upazila, which is considered as the urban area, and 60 for each union in each upazila, which is considered as the rural area, then the detailed distribution is given below.

Meherpur Sadar Upazilla

Number of the ward in Paurashava = 09

Number of Unions = 07

For Paurashava,

Per Ward= 24 households

Per Type = 8 as the strata based on the type of housing

So, 24*09= 216 households for Paurashava

For Union,

Per Union 60 households

Per Type = 20 as the strata based on the type of housing

So, 60*07= 420

Total, 216+420 636 households for Meherpur Sadar Upazila

Mujibnagar Upazila

Number of Unions = 04

For Union,

Per Union= 60 households

Per Type = 20 as the strata based on the type of housing

So, 60*04= 240 households for Mujibnagar Upazilla

Gangni Upazilla

Number of the ward in Paurashava = 09

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Number of Unions = 09

For Paurashava,

Per Ward= 24 households

Per Type = 8 as the strata based on the type of housing

So, 24*09= 216 households for Paurashava

For Union,

Per Union= 60 household

Per Type = 20 as the strata based on the type of housing

So, 60*09= 540

Total, 216+540= 756 households for Gangni Upazilla

For Meherpur District,

The sum of three Upazilla households = 636+240+756= 1632

So, a total of 1632 households have been selected for this study.

4.4 Data Processing and Analysis

The quality of the data and uploading the data to the computer at the end of the same day. The data contains the location of the household for the physical feature map and links the household survey data with that of the spatial database in ArcGIS. The attribute data of socio-economic and other surveys has been linked with that of the spatial database in ArcGIS.

Analysis Process of the Data

For Physical Quality of Life Index

- Life Expectancy
- Infant Mortality Rate
- Literacy Rate

$$\text{Literacy Rate} = \frac{\text{Number of Literate Individuals (15 years)}}{\text{The total number of Surveyed}} \times 100$$

$$\text{Life expectancy} = \frac{\text{Life Expectancy from BBS} - \text{Minimum value from question}}{\text{Maximum From Question} - \text{Minimum from Question}} \times 100$$

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$$\text{Infant Mortality Rate} = \frac{\text{Number of Infant Deaths}}{\text{Number of Live Births}} \times 100$$

$$\text{Physical Quality of Life Index} = \frac{\text{Literacy Rate + Infant Mortality Rate + Life Expectancy}}{3}$$

Quality of Life Index

- The sum of all the scores of the level of Satisfaction
- Normalize to 0–100 Scale = [Maximum Score= Indicators x 5 = 50]
- QLI {The sum of all the scores of the level of Satisfaction / 50} x 100

Cultural Capital Index

- The sum of all the scores of the level of Satisfaction
- Normalize to 0–100 Scale
- CCI = (Sum of scores /Number of questions) x 100

4.5 Preparation of Draft Final Report

After the interim report the draft final report will be prepared with the economic disparity among the Upazila within districts under study shall be figured out for drawing the future socio-economic development scenario.

4.6 Preparation of Final Report

After approval of the draft final report by the Project Implementation Committee, we will assist the UDD Planning team in a public hearing at the respective upazila.
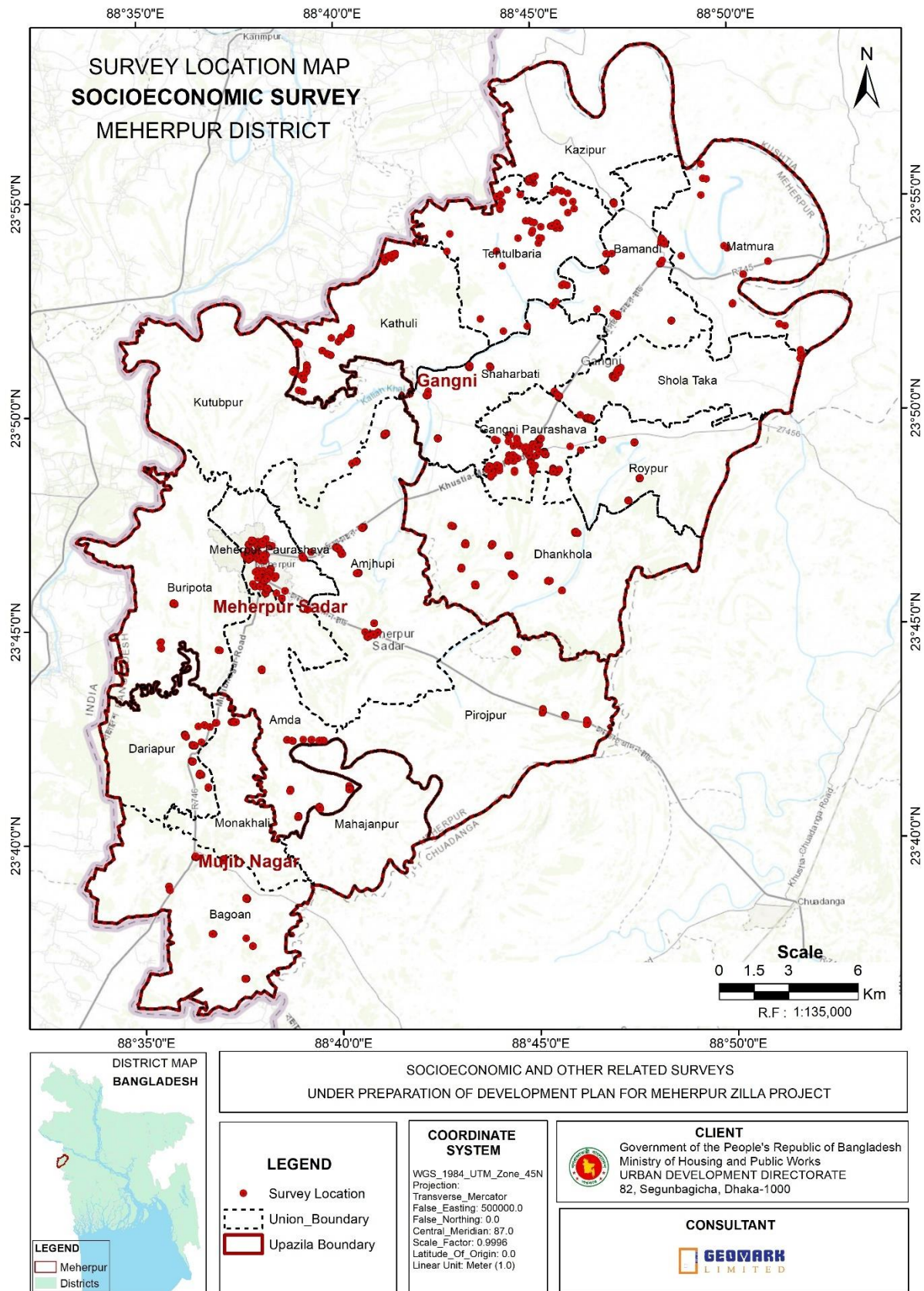
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Figure: Survey Location Map of Project Area

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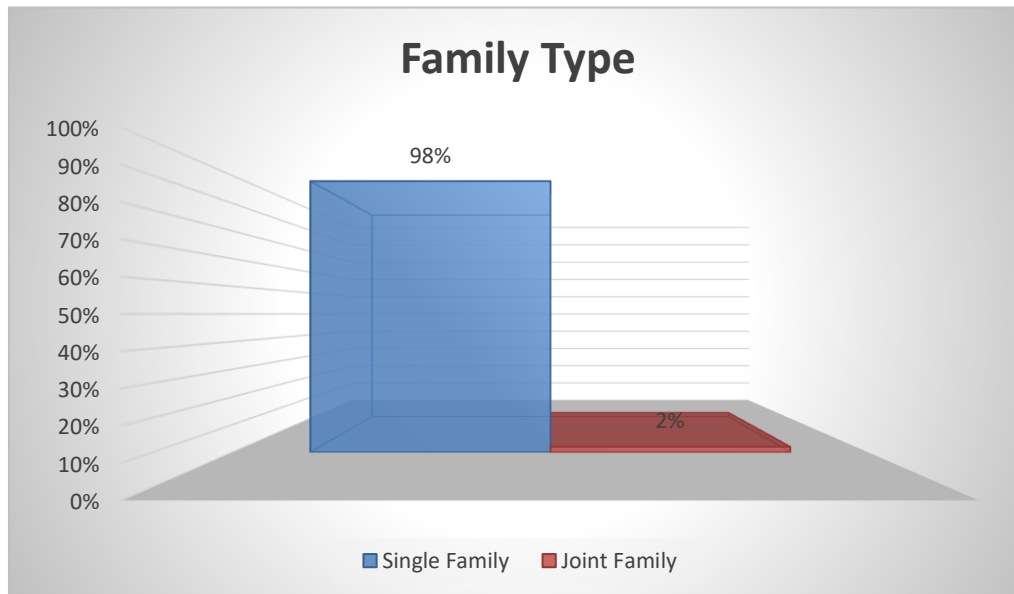**5. Socio-Economic Condition of Meherpur Paurashava**

5.1 Family Type of Meherpur Paurashava

Figure: Family Type of Meherpur Paurashava

Table: Family Type of Meherpur Paurashava

Catagories	Frequency	Percentage
Joint	202	98%
Single	4	2%

Source: Field Survey, 2025

The chart illustrates the distribution of family types, showing that an overwhelming majority, 98%, belong to single-family households, while only 2% are part of joint families. This indicates a strong dominance of nuclear family structures within the surveyed population. The data suggests a trend toward smaller household units, possibly reflecting modern societal shifts such as urbanization, individualism, or economic factors favoring nuclear families over traditional joint family setups.

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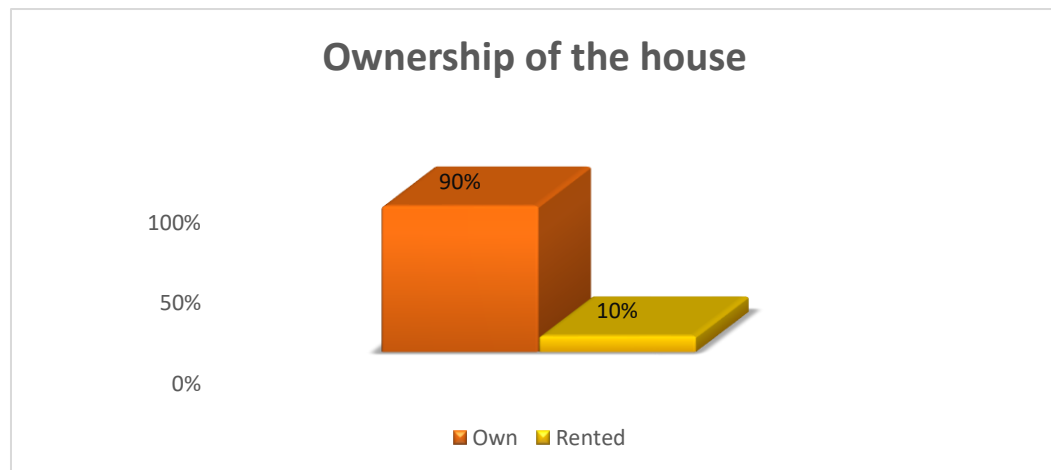Socio-Economic and Other Related Surveys
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5.2. Ownership of the Houses

Figure: Ownership of houses of Meherpur Paurashava

Table: Ownership of the House

Catagories	Frequency	Percentage
Own	186	90%
Rented	30	10%

Source: Field Survey 2025

The bar chart titled **"Ownership of the house"** illustrates the proportion of families based on whether they own or rent their homes. According to the data, a vast majority of families—**90%**—own their homes, while only **10%** live in rented accommodations. This significant disparity suggests a high rate of home ownership within the surveyed population, which may reflect economic stability, access to property, or cultural preferences for owning property rather than renting.
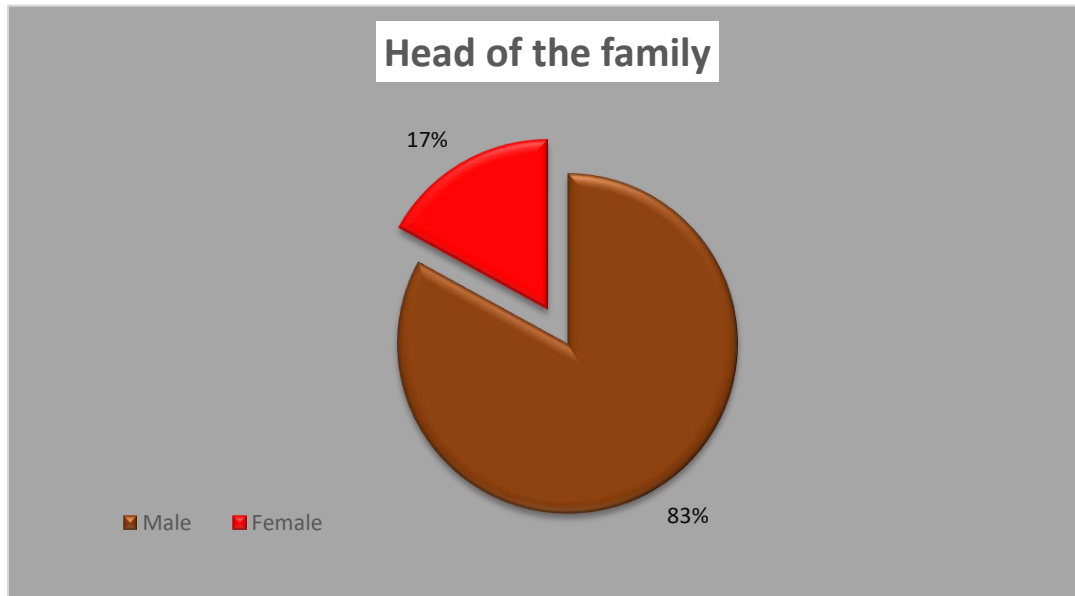
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5.3 Head of the Family Members

Figure: Head of the family of Meherpur Paurashava

Table: Head of the Family

Catagories	Frequency	Percentage
Male	172	83%
Female	34	17%

Source: Field Survey, 2025

This chart illustrates the gender distribution of family heads. According to the chart, **83%** of families are headed by **males**, while only **17%** are headed by **females**. This significant gender disparity indicates that the traditional role of males as primary decision-makers within households remains dominant. Although a smaller percentage, the presence of female-headed families highlights a shift toward gender diversity in household leadership, which may be influenced by factors such as widowhood, migration, employment, or changing social norms.

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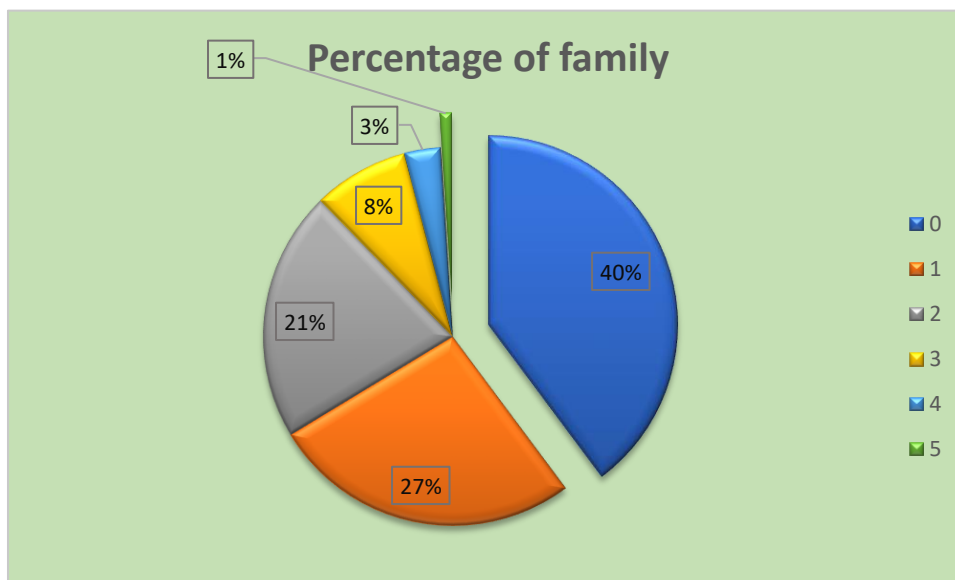
5.4 Number of Educated Family Members

Figure: Educated members in families of Meherpur Paurashava

Table: Number of educated Family Members

Catagories	Frequency	Percentage
0	86	40%
1	54	27%
2	45	21%
3	16	8%
4	7	3%
5	3	1%

Source: Field Survey, 2025

The pie chart titled **"Percentage of family"** shows the distribution of families based on the number of educated members within each household, ranging from zero to five. A significant portion of families, 40%, have no educated members, indicating a widespread lack of access to education or low literacy levels. Families with one educated member account for 27%, suggesting that in many households, only a single individual has received formal education. About 21% of families have two educated members, while smaller percentages are seen as the number of educated members increases—8% have three, 3% have four, and only 1% of families have five educated members. This data highlights a clear trend where the number of educated individuals per family decreases significantly as the count rises, pointing to a need for enhanced educational outreach and support across families.

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5.5 Income of The Household

The bar chart displays the distribution of families based on their monthly income levels. The largest portion of families, **48%**, falls within the income range of **10,000–20,000**, indicating that nearly half of the population earns a modest income. This is followed by **17%** of families earning between **21,000–30,000**, and **8%** each earning **less than 10,000** and **30,000–40,000**. Meanwhile, **7%** of families report having **no income at all**, and **6%** earn **more than 40,000**, the highest income bracket represented. The data reflects a concentration of families in the lower to mid-income ranges, highlighting potential economic challenges and a need for targeted support to improve income levels in the community

Table: Income of the Household

Catagories	Frequency	Percentage
No Income	16	7%
Less than 10000	19	8%
10000-20000	105	105%
21000-30000	37	37%
31000-40000	17	17%
More than 40000	12	12%

Source: Field Survey, 2025

Figure: Income of the family of Meherpur Paurashava

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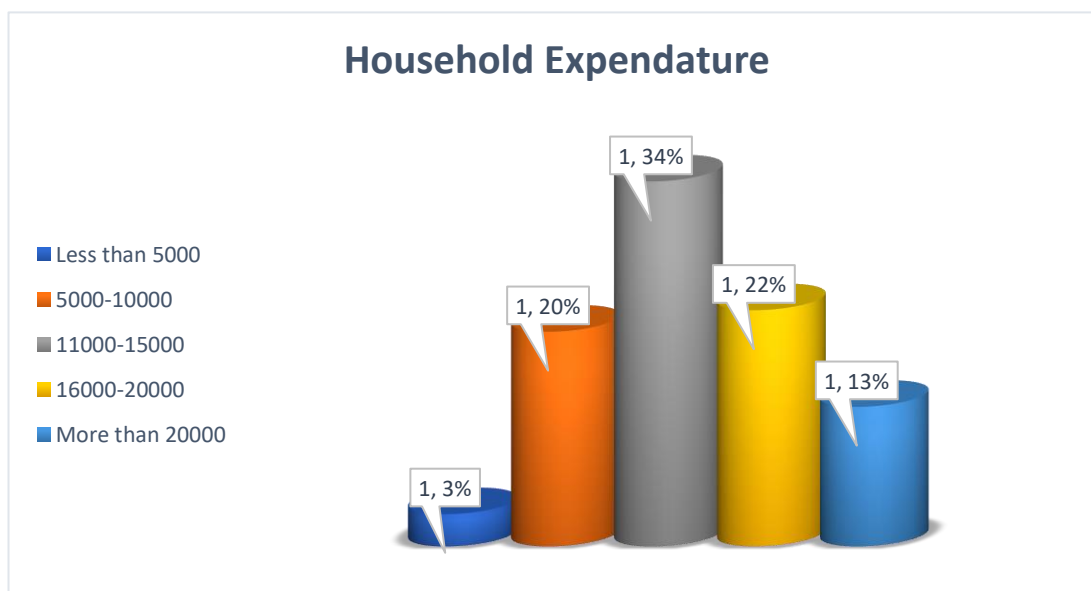Preparation of Development Plan for Meherpur Zilla Project.
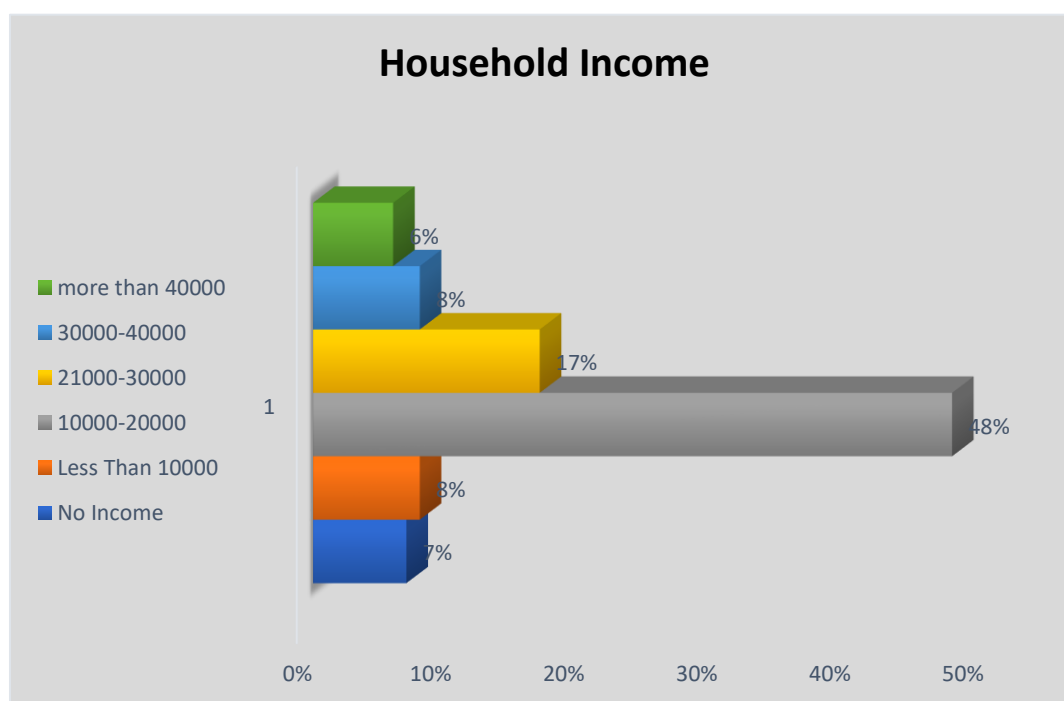
5.6 Expenditure of the Household

Figure: Expenditure of the family of Meherpur Paurashava

Table: Expenditure of the Family

Catagories	Frequency	Percentage
Less than 5000	8	3%
5000-10000	45	20%
11000-15000	75	34%
16000-20000	49	22%
More than 20000	29	13%

Source: Field Survey 2025

The bar chart titled **"Expenditure"** illustrates the distribution of families based on their monthly household spending. The largest group, comprising **34%** of families, spends between **11,000 and 15,000** units of currency per month. Following this, **22%** of families fall into the **16,000–20,000** expenditure range, and **20%** spend between **5,000 and 10,000**. A smaller share, **13%**, report spending **more than 20,000**, while only **3%** of families spend **less than 5,000** monthly. These figures suggest that most families have moderate monthly expenditures, reflecting an average lifestyle with limited spending at either extreme.

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5.7 Physical Quality of Life Index, Cultural Capital Index, and Quality of Infrastructural Index of Meherpur Paurashava
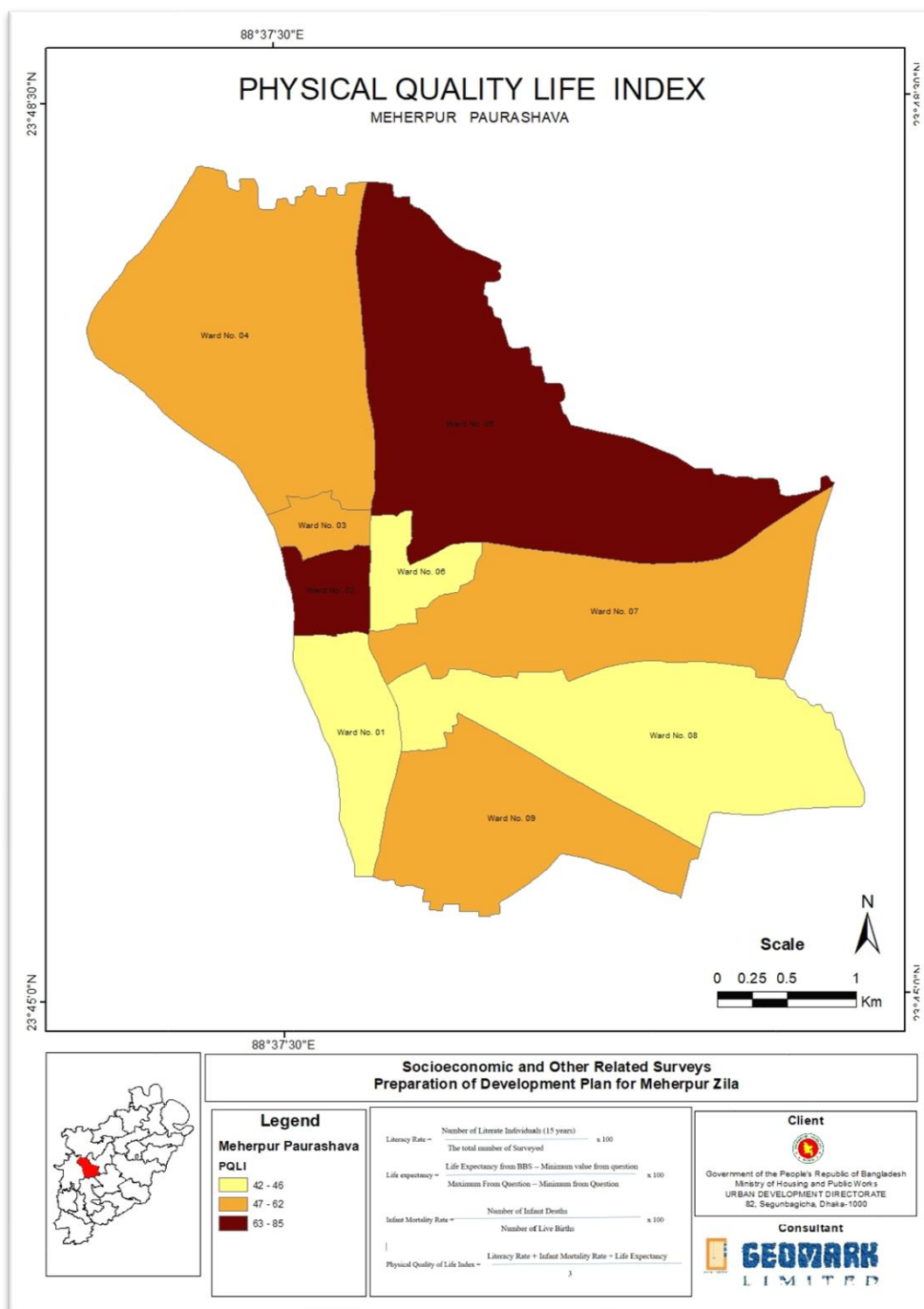
Physical Quality of Life Index:

Figure: Physical Quality of Life Index of Meherpur Paurashava

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This figure illustrates the Physical Quality of Life Index (PQLI) across the wards of Meherpur Pourashava, offering a spatial understanding of living standards within the municipality. PQLI is a composite indicator that reflects basic human needs, typically including literacy rate, infant mortality, and life expectancy. In this map, the wards are color-coded based on their respective PQLI scores, where darker shades represent higher index values, indicating better living conditions.

Notably, Ward No. 05 stands out with the highest PQLI value of 85, suggesting superior access to essential services and quality of life. In contrast, Ward No. 01 has the lowest PQLI score of 42, highlighting areas where developmental attention is most needed. The variation in PQLI across the wards underscores the disparities in socioeconomic conditions within Meherpur Pourashava. This visualization is a critical tool for guiding policy and resource allocation, helping planners identify priority areas for intervention to improve the overall quality of life for residents.

Cultural Capital Index of the Paurashava

The map titled **"Meherpur Pourashava"** provides a ward-level visualization of the **Cultural Capital Index (CCI)**, an important socio-spatial indicator used in the preparation of the Development Plan for Meherpur Zila. The CCI reflects the cultural vibrancy, heritage assets, social participation, educational opportunities, and access to cultural infrastructure across the municipal wards. Each ward is color-coded based on its CCI score, with the legend specifying numerical values and associated colors. Wards shaded in **green**, such as **Ward No. 04 (CCI 31)**, **Ward No. 05 (CCI 50)**, and **Ward No. 09 (CCI 59)**, represent areas with relatively high cultural capital, suggesting better access to educational institutions, libraries, community centers, and cultural practices.

In contrast, **Ward No. 03 (CCI 41)** and **Ward No. 08 (CCI 57)** are shaded **red**, indicating a lower cultural capital presence, possibly due to limited cultural infrastructure or community engagement. **Ward No. 02 (CCI 82)** and Ward No. 06 (CCI 74**)** score higher and are represented in **light green and yellow**, highlighting moderate to strong cultural presence. This spatial differentiation is vital for identifying culturally deprived areas and directing policy and development efforts towards promoting inclusive cultural growth and social development. By mapping CCI across Meherpur Pourashava, planners and decision-makers can better allocate resources to enhance cultural equity and foster community identity across all municipal wards

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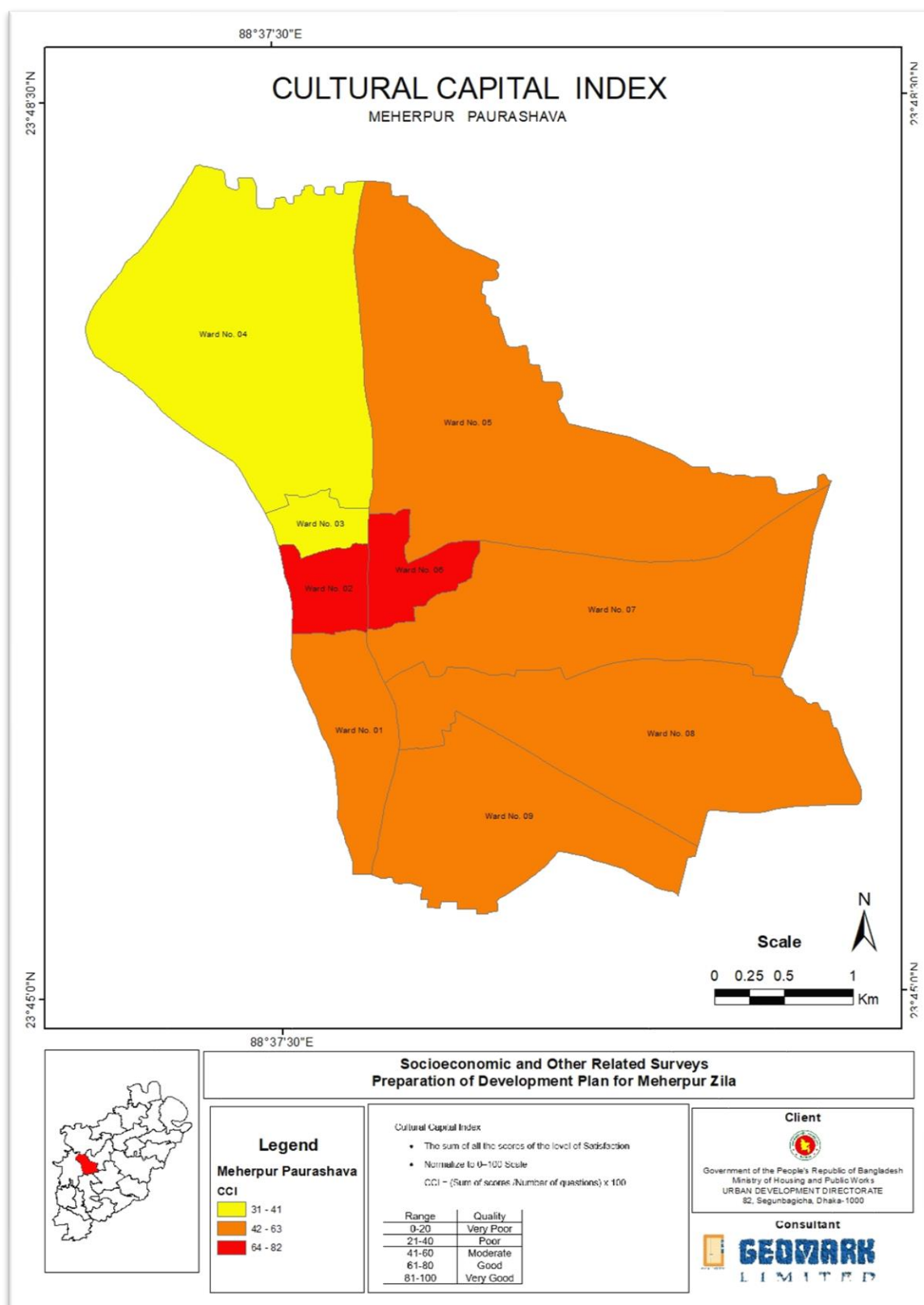
Figure: Cultural Capital Index of Meherpur Paurashava

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Quality of Infrastructural Index of Meherpur Paurashava

Figure: Quality of Life Index of Meherpur Paurashava

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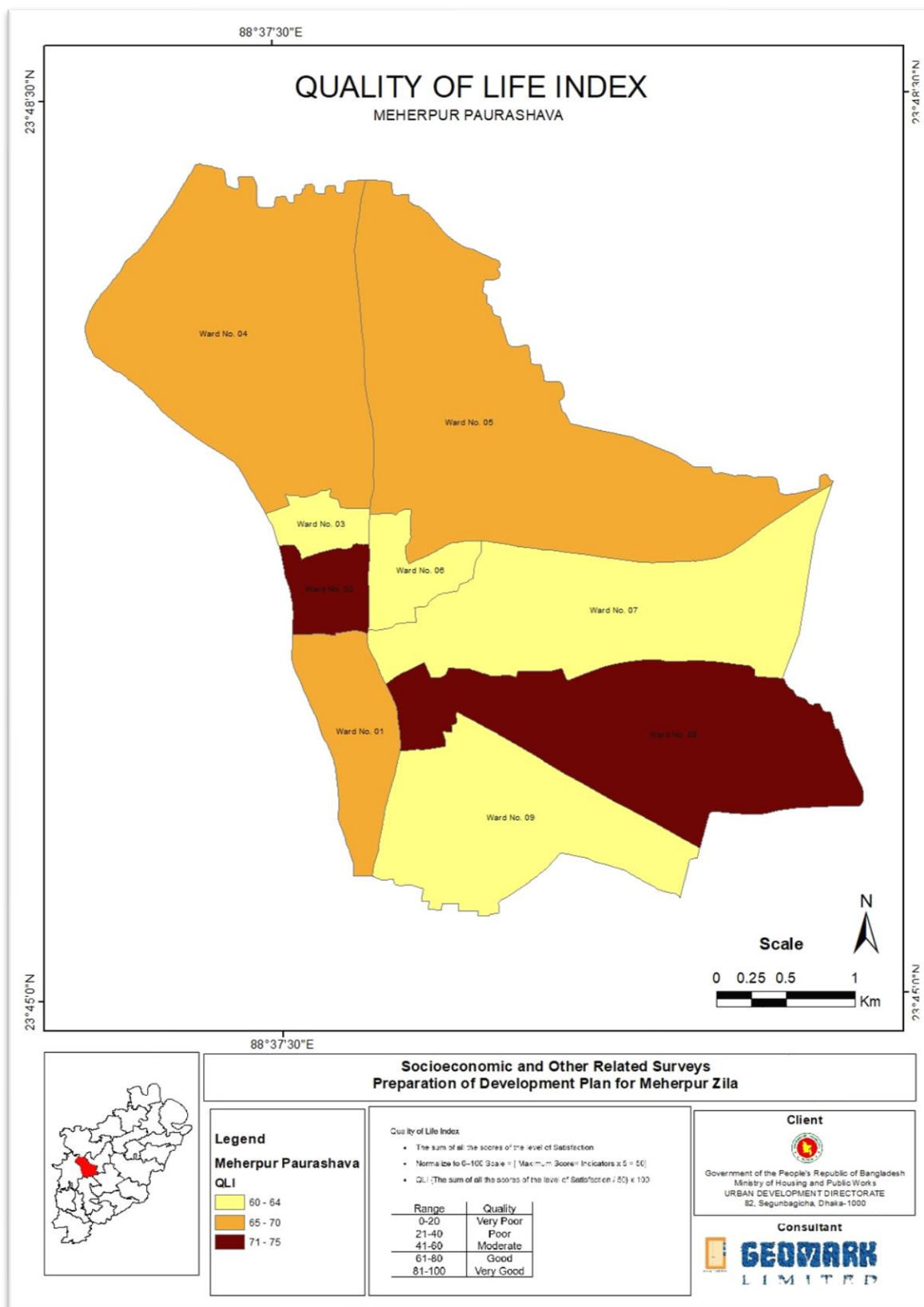
The map illustrates the Quality of Infrastructure Index (QLI) across different wards within Meherpur Pourashava, located in Meherpur Zila. The QLI values range from 60 to 85, indicating varying levels of infrastructural development in the area.

Each ward is represented with a unique color corresponding to its QLI score:

- Ward No. 07 (QLI 63) and Ward No. 08 (QLI 74) are located in the central and southern parts, showing moderately good infrastructure.
- Ward No. 01 (QLI 68) and Ward No. 05 (QLI 70) are in the western and southern-central regions, indicating slightly above-average infrastructure.
- Ward No. 02 (QLI 75) shows relatively strong infrastructural quality and lies in the central-western zone.
- Ward No. 03 (QLI 62) and Ward No. 09 (QLI 60) are among the lower-scoring areas, located in the east-central and northwestern sectors, respectively.
- Ward No. 04 (QLI 66) occupies a large area in the northeast with a moderately good QLI score.
- The highest-scoring area is Ward No. 06 (QLI 85), located centrally-north, indicating the best infrastructural facilities within the Pourashava.

This spatial distribution of QLI helps in understanding infrastructure disparities and can aid policymakers in planning targeted improvements for underperforming areas.

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6. Socio-Economic Condition of Gangni Paurashava

6.1 Family Type of Gangni Paurashava
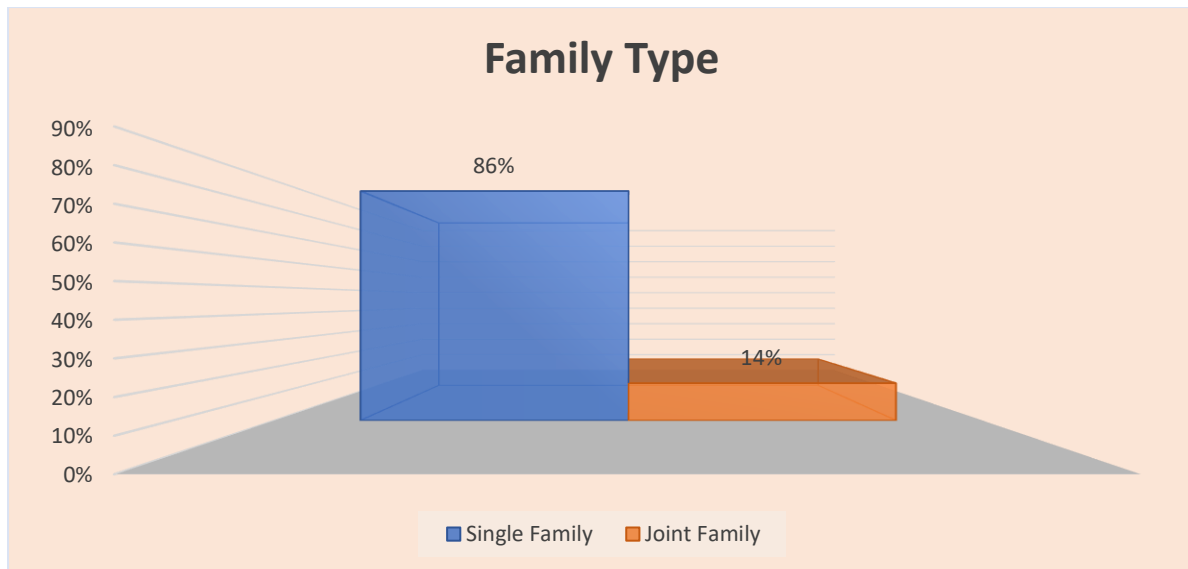
Figure: Family Type of Gangni Paurashava

Table: Family Type of Meherpur Paurashava

Catagories	Frequency	Percentage
Joint	188	86%
Single	30	14%

Source: Field Survey, 2025

The chart titled *"Family Type"* illustrates the distribution of two types of family structures: Single Family and Joint Family. According to the chart, single-family homes make up the majority, accounting for 86% of the total. This is visually represented by a tall blue bar. In contrast, Joint Families comprise only 14%, shown with a much shorter red bar. Overall, the chart highlights that single-family households are significantly more common than joint-family households in the surveyed population.

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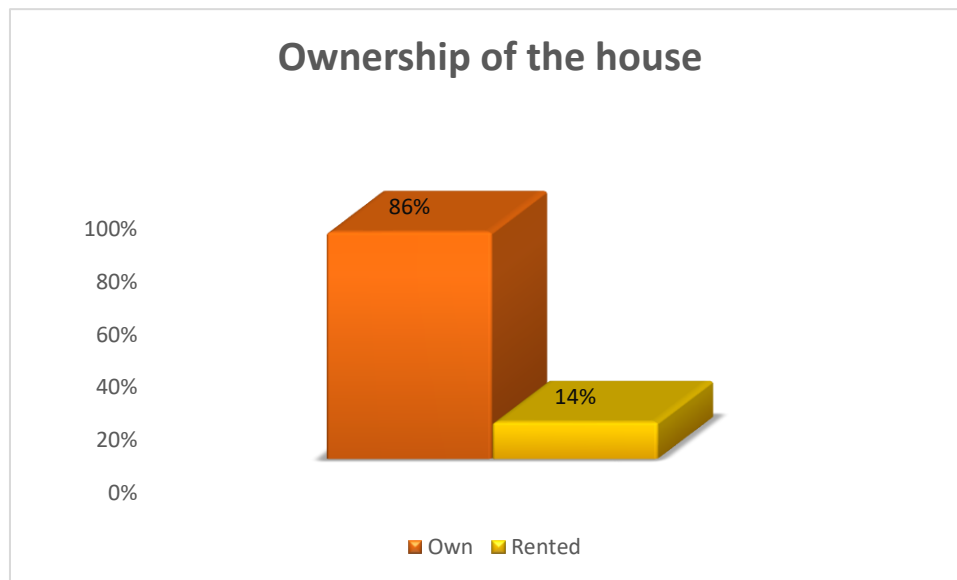Socio-Economic and Other Related Surveys
Preparation of Development Plan for Meherpur Zilla Project.

6.2. Ownership of the Houses

Figure: Ownership of houses of Gangni Paurashava

Table: Ownership of the House

Catagories	Frequency	Percentage
Own	188	86%
Rented	30	14%

Source: Field Survey, 2025

The bar chart titled **"Ownership of the house"** illustrates the proportion of families based on whether they own or rent their homes. According to the data, a vast majority of families—**86%**—own their homes, while only **14%** live in rented accommodations. This significant disparity suggests a high rate of home ownership within the surveyed population, which may reflect economic stability, access to property, or cultural preferences for owning property rather than renting.
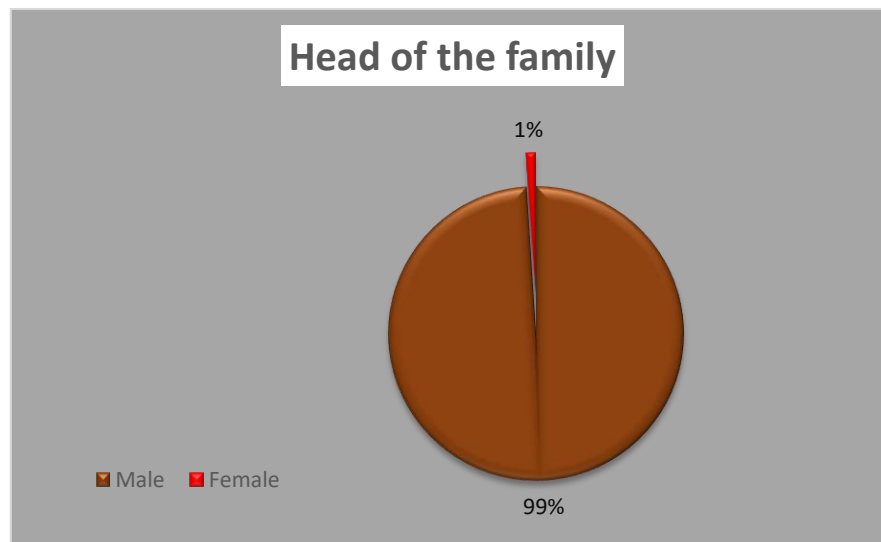
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6.3 Head of the Family Members

Figure: Head of the family of Gangni Paurashava

Table: Head of the Family

Catagories	Frequency	Percentage
Male	216	99%
Female	2	1%

Source: Field Survey, 2025

This chart illustrates the gender distribution of family heads. According to the chart, **99%** of families are headed by **males**, while only **1%** are headed by **females**. This significant gender disparity indicates that the traditional role of males as primary decision-makers within households remains dominant. Although a smaller percentage, the presence of female-headed families highlights a shift toward gender diversity in household leadership, which may be influenced by factors such as widowhood, migration, employment, or changing social norms.

6.4 Number of Educated Family Members

Table: Number of educated Family Members

Catagories	Frequency	Percentage
0	31	14%
1	43	20%
2	44	20%
3	21	10%
4	20	9%

Source: Field Survey, 2025

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The pie chart titled **"Percentage of family"** shows the distribution of families based on the number of educated members within each household, ranging from zero to five. A significant portion of families, 14%, have no educated members, indicating a widespread lack of access to education or low literacy levels. Families with one educated member account for 20%, suggesting that in many households, only a single individual has received formal education. About 20% of families have two educated members, while smaller percentages are seen as the number of educated members increases—10% have three, 9% have four. This data highlights a clear trend where the number of educated individuals per family decreases significantly as the count rises, pointing to a need for enhanced educational outreach and support across families.

6.5 Income of The Household

The bar chart displays the distribution of families based on their monthly income levels. The largest portion of families, **52%**, falls within the income range of **10,000–20,000**, indicating that nearly half of the population earns a modest income. This is followed by **12%** of families earning between **21,000–30,000**, and **7%** each earning **less than 10,000** and 10% of families earning is between **30,000–40,000**. The data reflects a concentration of families in the lower to mid-income ranges, highlighting potential economic challenges and a need for targeted support to improve income levels in the community

Table: Income of the Household

Catagories	Frequency	Percentage
No Income	0	0
Less than 10000	16	7%
10000-20000	114	52%
21000-30000	52	12%
31000-40000	21	10
More than 4000	0	0

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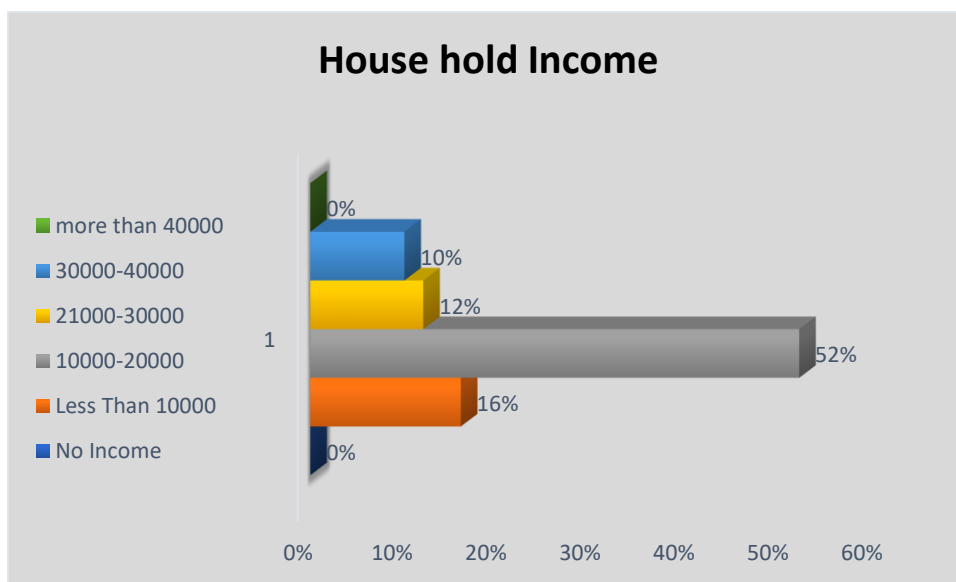Preparation of Development Plan for Meherpur Zilla Project.

Figure: Income of the family of Gangni Paurashava

6.6 Expenditure of the Household
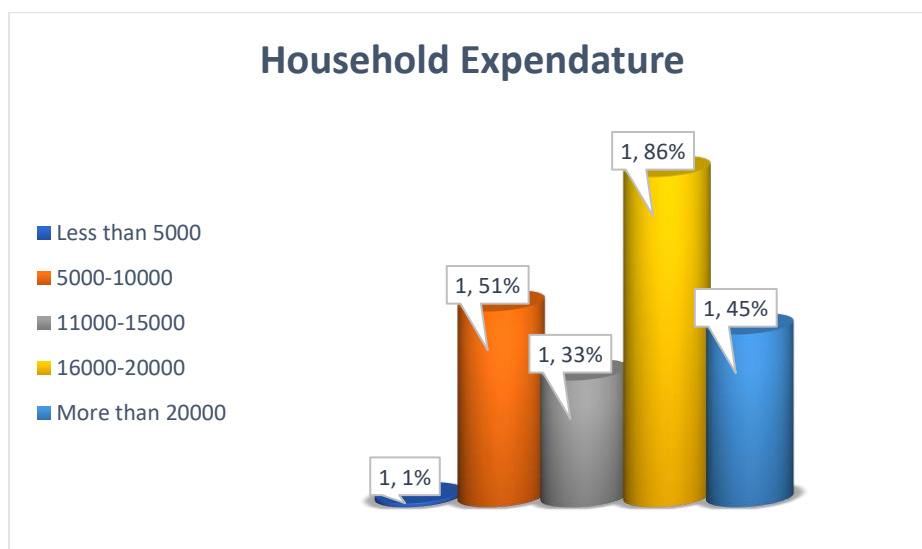

Figure: Expenditure of the family of Gangni Paurashava

Table: Expenditure of the Family

Catagories	Frequency	Percentage
Less than 5000	3	1%
5000-10000	51	23%
11000-15000	33	15%
16000-20000	86	39%
More than 20000	45	20%

Source: Field Survey,2025

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The bar chart titled **"Expenditure"** illustrates the distribution of families based on their monthly household spending. The largest group, comprising **33%** of families, spends between **11,000 and 15,000** units of currency per month. Following this, **29%** of families fall into the **16,000–20,000** expenditure range, and **23%** spend between **5,000 and 10,000**. A smaller share, **20%**, report spending **more than 20,000**, while only **1%** of families spend **less than 5,000** monthly. These figures suggest that most families have moderate monthly expenditures, reflecting an average lifestyle with limited spending at either extreme.

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6.7 Physical Quality of Life Index, Cultural Capital Index, and Quality of Infrastructural Index of Gangni Paurashava
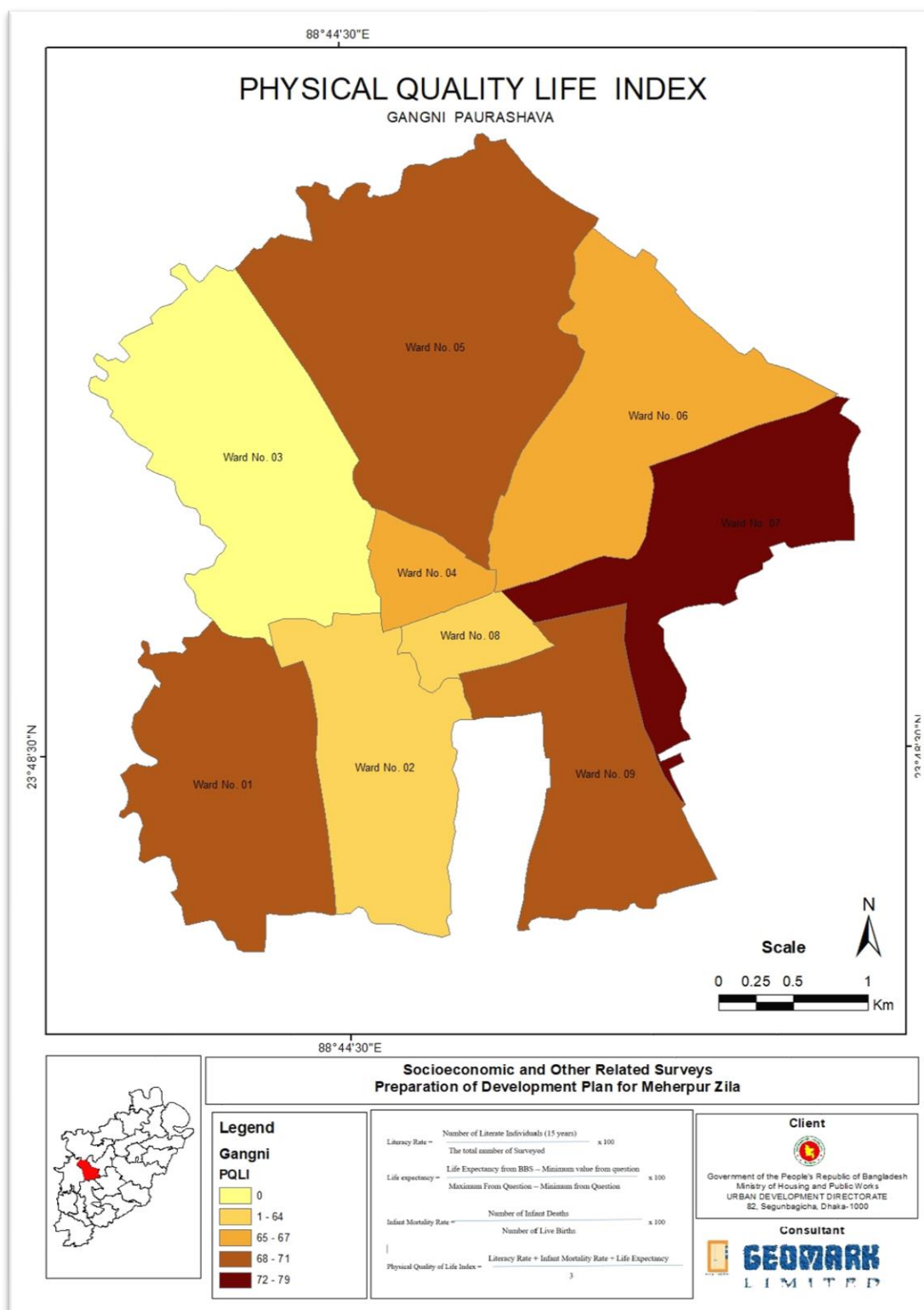
Physical Quality of Life Index

Figure: Physical Quality of Life Index of Gangni Paurashava

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The map displays the Physical Quality of Life Index (PQLI) for various wards within Gangni Pourashava, part of Meherpur District, Bangladesh. The PQLI values on the map range from 63 to 79, reflecting differences in living standards and essential services across the area.

Each ward is color-coded according to its respective PQLI score:

- Ward No. 07 (PQLI 79), located in the northeastern region, has the highest quality of life, indicating better access to basic needs such as healthcare, education, and sanitation.

- Ward No. 01 and Ward No. 05 (PQLI 71) also show high PQLI values and are situated in the northwestern and southwestern parts of Gangni, respectively.

- Ward No. 06 (PQLI 67) and Ward No. 04 (PQLI 66) represent moderately developed zones in the east-central and central areas.

- Ward No. 09 (PQLI 70) lies in the southeast and also reflects a fairly good physical quality of life.

- Ward No. 08 (PQLI 63) in the center shows the lowest score, possibly indicating underperformance in key life quality indicators.

- Ward No. 02 (PQLI 64) in the south-central area also reflects below-average conditions.

- Ward No. 03 appears unscored (value marked as 0), which may suggest a lack of available data or that it was not assessed.

Quality of Infrastructural Index of Gangni Paurashava

The map illustrates the Quality of Infrastructure Index (QLI) for Gangni Pourashava in Meherpur District, Bangladesh. The QLI scores, represented through various shades of blue, indicate the relative infrastructural development of each ward, ranging from 58 to 78.

- Ward No. 07 (QLI 78), located in the eastern part of the Pourashava, has the highest infrastructure quality, suggesting well-developed roads, utilities, sanitation, and public facilities.

- Ward No. 09 (QLI 72) also scores highly, indicating strong infrastructure in the southeastern region.

- Ward No. 04 (QLI 68) and Ward No. 05 (QLI 70), in the central-northern area, show above-average infrastructure conditions.

- Ward No. 02 (QLI 60) and Ward No. 10 (QLI 58) register the lowest scores, pointing to potential infrastructural deficiencies in the central and southwestern parts of Gangni

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- Ward Nos. 01 and 06 (both QLI 65) and Ward No. 08 (QLI 65) reflect moderate infrastructural development, with room for improvement.
- Ward No. 03 is marked with a score of 0, indicating a lack of data or exclusion from the assessment.
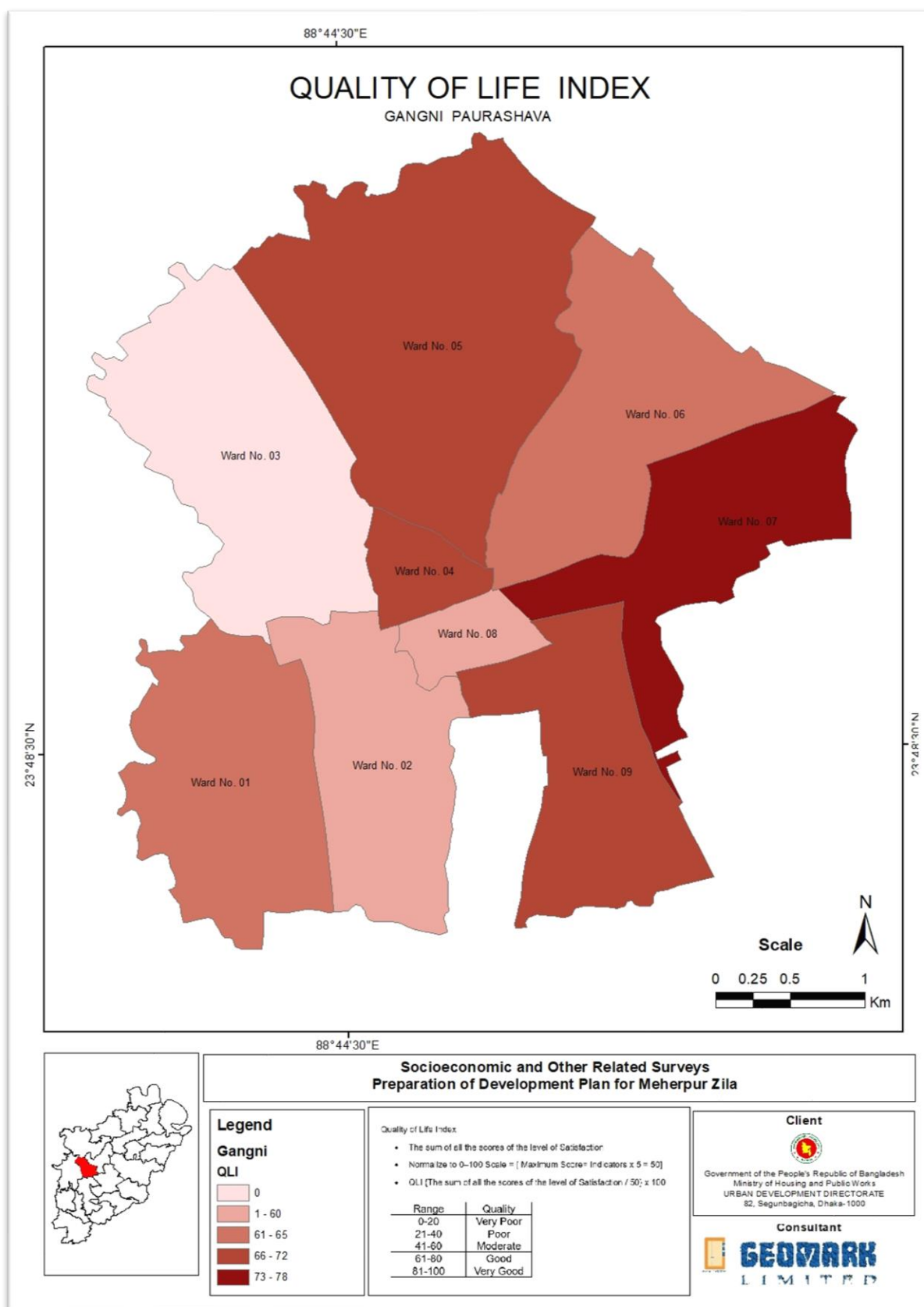
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Figure: Quality of Life Index of Gangni Paurashava

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Cultural Capital Index of Gangni Paurashava

The map shows the Cultural Capital Index (CCI) of Gangni Pourashava, providing a ward-wise depiction of cultural development within the municipality, based on indicators like access to cultural institutions, participation in cultural activities, and preservation of heritage.

Key Observations:

- Ward No. 07 (CCI 72) ranks highest, indicating strong cultural engagement, likely due to access to cultural centers, educational institutions, or preserved heritage.

- Ward No. 03, marked with CCI 0, reflects a lack of available data or negligible cultural infrastructure.

- Ward Nos. 02 and 06 (CCI 74 and 69 respectively) show high scores, suggesting good cultural resources and community participation.

- Wards 01 and 09 (CCI 40 and 69 respectively) present lower CCI values, implying a need for focused cultural investment and programming.

- Ward No. 08 (CCI 59) and Ward No. 04 (CCI 70) score moderately, indicating average cultural infrastructure and activities.

- Ward No. 05 (CCI 71) is also among the top performers, showing a strong cultural profile.

This CCI distribution highlights significant inter-ward disparity in cultural development, suggesting that while some areas have rich cultural infrastructure and engagement, others—especially Ward No. 03 and parts of central Gangni—require focused attention to boost cultural inclusion and accessibility.
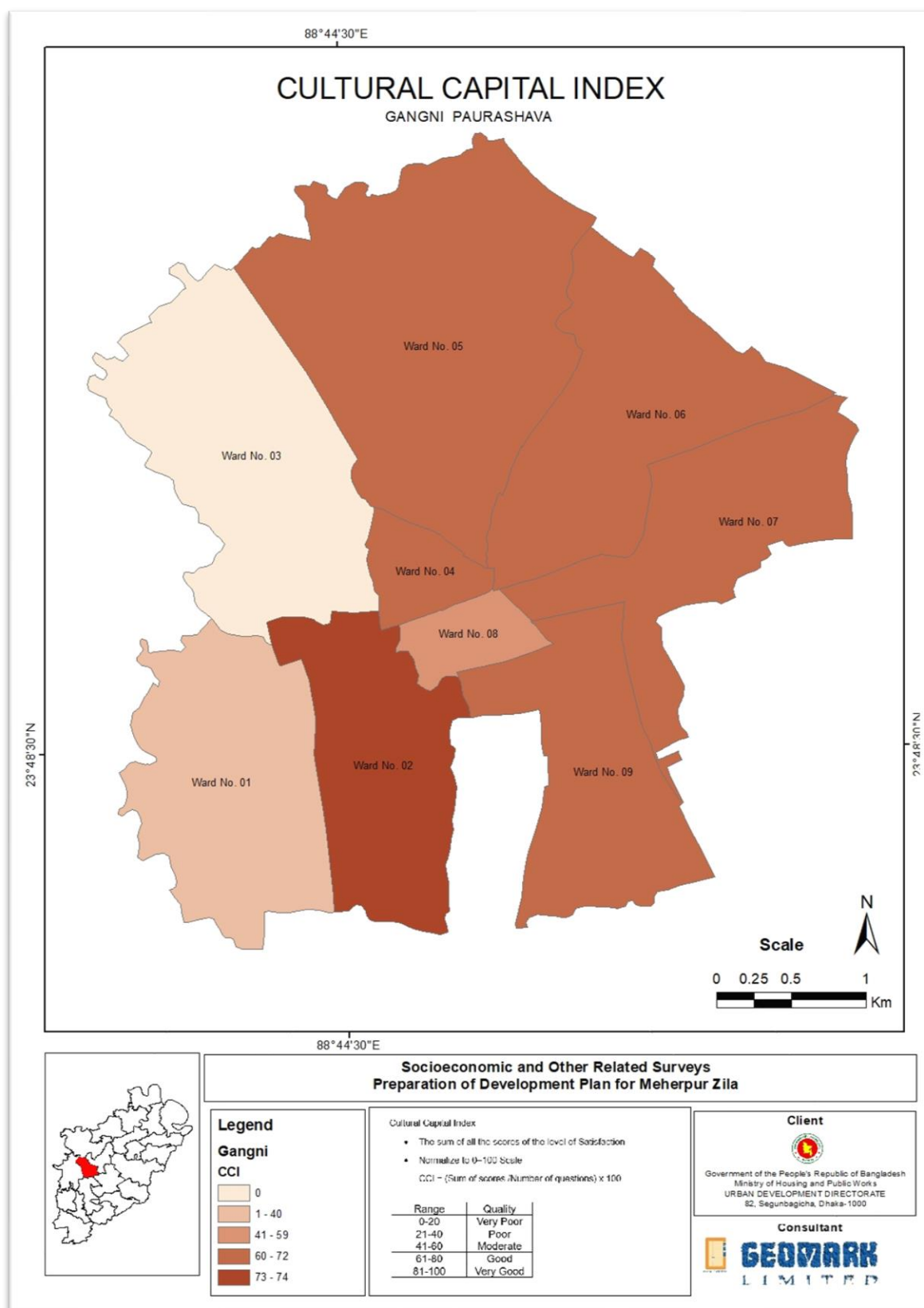
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Figure: Cultural Capital Index of Gangni Paurashava

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7. Socio-Economic Condition of Rural Area
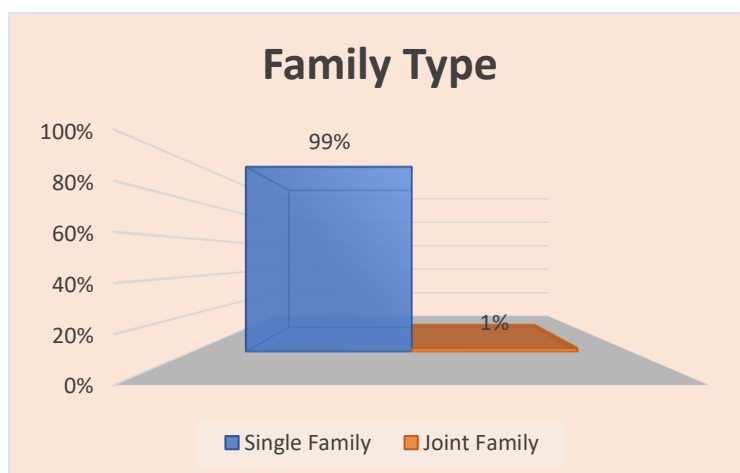**7.1 Family Type of Rural Area**

Figure: Family Type of the Rural Area

The chart titled **"Family Type"** presents the distribution of family structures within a population, showing a significant predominance of single-family households. According to the chart, **99%** of the families are single, while only **1%** are joint families. This highlights a strong preference or trend toward nuclear family living arrangements in the surveyed population. The data is displayed using a 3D bar chart with distinct colors—blue for single families and red for joint families—making the comparison visually clear.

Table: Family Type of Rural Area

Family Type	Number	Percentage
Single Family	213	99%
Joint Family	2	1%

Source: Field Survey 2025

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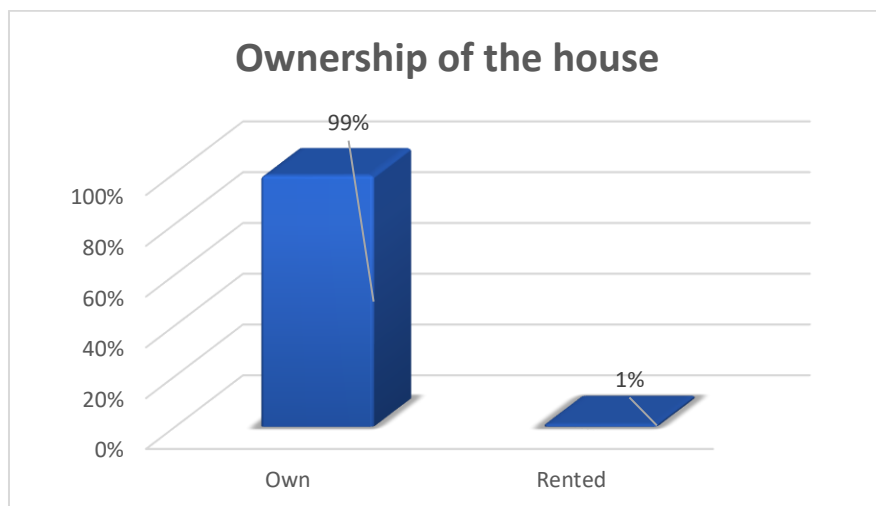
7.2 Ownership of the Houses

Figure: Ownership of the House

The chart titled **"Ownership of the house"** illustrates the distribution between house ownership and rental status within a population. The data shows that an overwhelming majority, **99%**, of households own their homes, while only **1%** live in rented accommodations. This suggests a high rate of homeownership in the surveyed area, indicating economic stability or cultural preferences for owning property. The chart uses a 3D bar format to visually distinguish between the two categories, with both percentages labeled clearly for easy interpretation.

Table: Ownership of the Houses

Ownership of the house	Number	Percentage
Own	210	99%
Rented	2	1%

Source: Field Survey 2025

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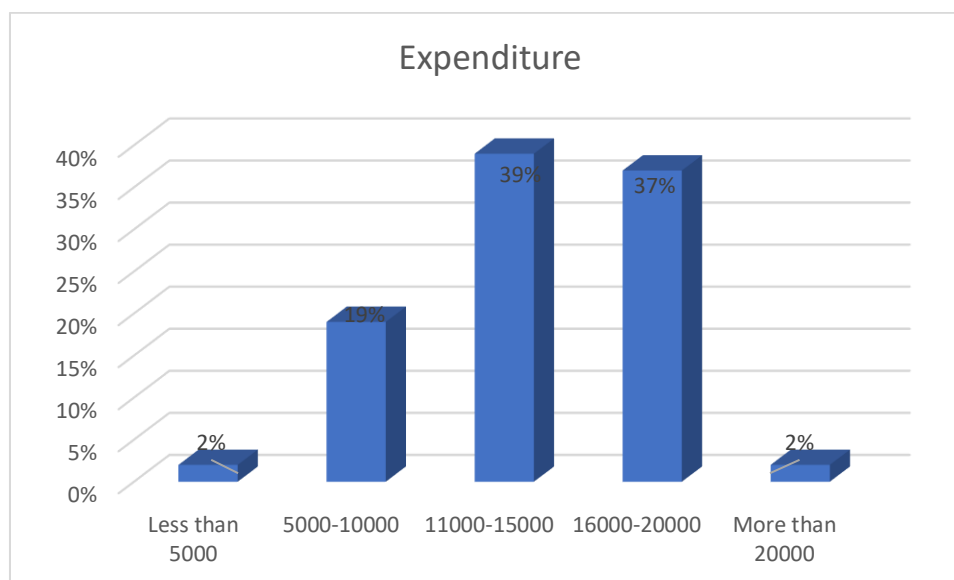
7.3 Expenditure of the Household

Figure: Expenditure of the household

The chart is the graph titled **"Expenditure"** that presents the percentage distribution of expenditures across various ranges. The x-axis is divided into different expenditure ranges: Less than 5000, 5000-10000, 11000-15000, 16000-20000, and More than 20000, while the y-axis displays the percentage values from 0% to 40%. Notably, the chart shows that the most frequent expenditure falls in the range of 11000-15000 at 39%, closely followed by 16000-20000 at 37%, with the ranges of Less than 5000 and More than 20000 significantly lower at only 2% each. This visualization offers a concise insight into spending trends, highlighting the middle expenditure ranges as the most typical among the data.

Expenditure	Number	Percentage
Less than 5000	5	2%
5000-10000	40	19%
11000-15000	83	39%
16000-20000	80	37%
More than 20000	4	2%

Source: Field Survey 2025

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7.4 Savings of the Household

Figure: Savings of the Household

The bar chart titled **"Savings"** illustrates the percentage distribution of savings across four different categories. The highest percentage, **46%**, falls within the **500 - 1000** range, while **41%** of individuals save less than **500**. A smaller portion, **9%**, accumulates savings between **1100 - 1500**, and only **3%** save more than **1500**. The data highlights a concentration of savings in the lower ranges, with significantly fewer individuals saving larger amounts.

Savings	Number	Percentage
Less than 500	88	41%
500-1000	101	46%
1100-1500	19	39%
More than 1500	5	3%

Source: Field Survey 2025

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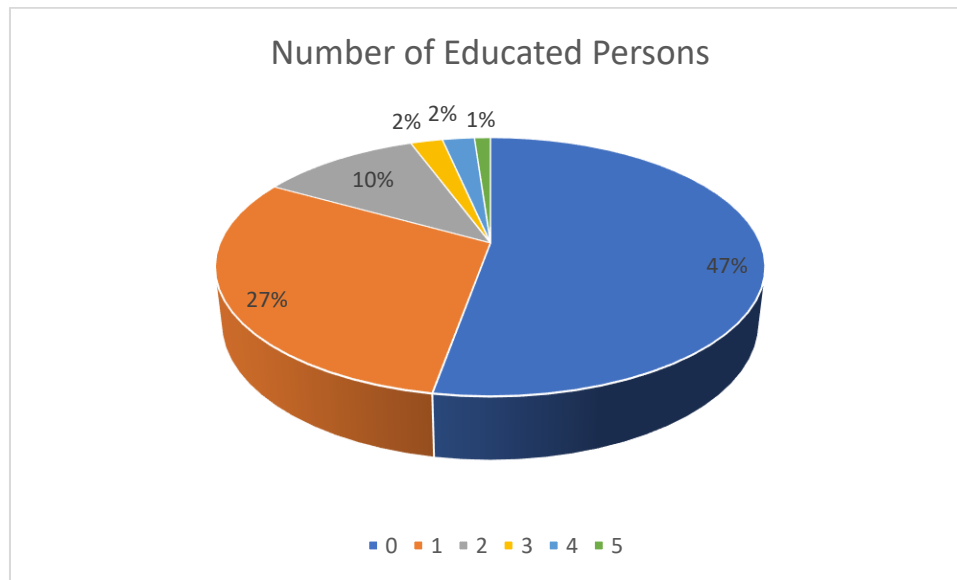
7.5 Number of Educated Person

Figure: Number of Educated Person

The pie chart titled "Number of Educated Persons" visually represents the distribution of educated individuals across different counts. It is divided into six distinct color-coded segments, each labeled with percentages. The largest portion, 47%, corresponds to individuals with a count of 0, while the next largest, 27%, represents those with a count of 1. The remaining categories include smaller groups: 10% with a count of 2, and 2% each for counts of 3 and 4, with the smallest category at 1% for a count of 5. This chart effectively illustrates the concentration of educated persons, highlighting disparities in educational levels within the given dataset.

Number of Educated Persons	Number	Percentage
0	102	47%
1	56	27%
2	22	10%
3	4	2%
4	3	2%
5	2	1%

Source: Field Survey 2025

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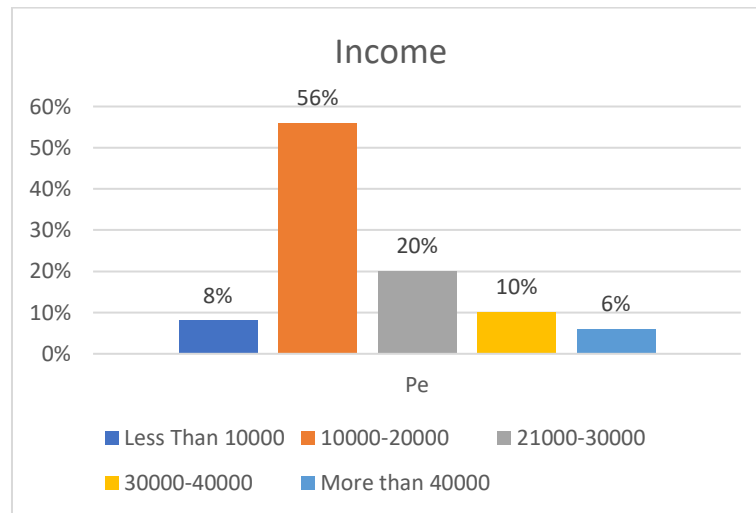## 7.6 Income of the Household

Figure: Household Income

The bar chart titled "Income" illustrates the distribution of people across various income ranges. It highlights that the majority—56%—earn between 10,000 and 20,000, making this the most common income category. Following this, 20% fall within the 21,000-30,000 range, while smaller proportions earn between 30,000-40,000 (10%) and less than 10,000 (8%). The smallest group, 6%, earns more than 40,000. This visual representation provides a clear perspective on income disparities, emphasizing the concentration of individuals within lower to mid-level income brackets.

Incomes	Number	Percentage
Less than 1000	18	8%
1000-20000	122	66%
21000-30000	39	20%
31000 - 40000	20	10%
More than 40000	12	6%

Source: Field Survey 2025

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8. Mental Map Preparation of the Study Area

The chapter has described the mental map of the respondent in the project area, which represents the accessibility of the respondent of the project area. We will include their place in space, which will be incorporated into the physical plan
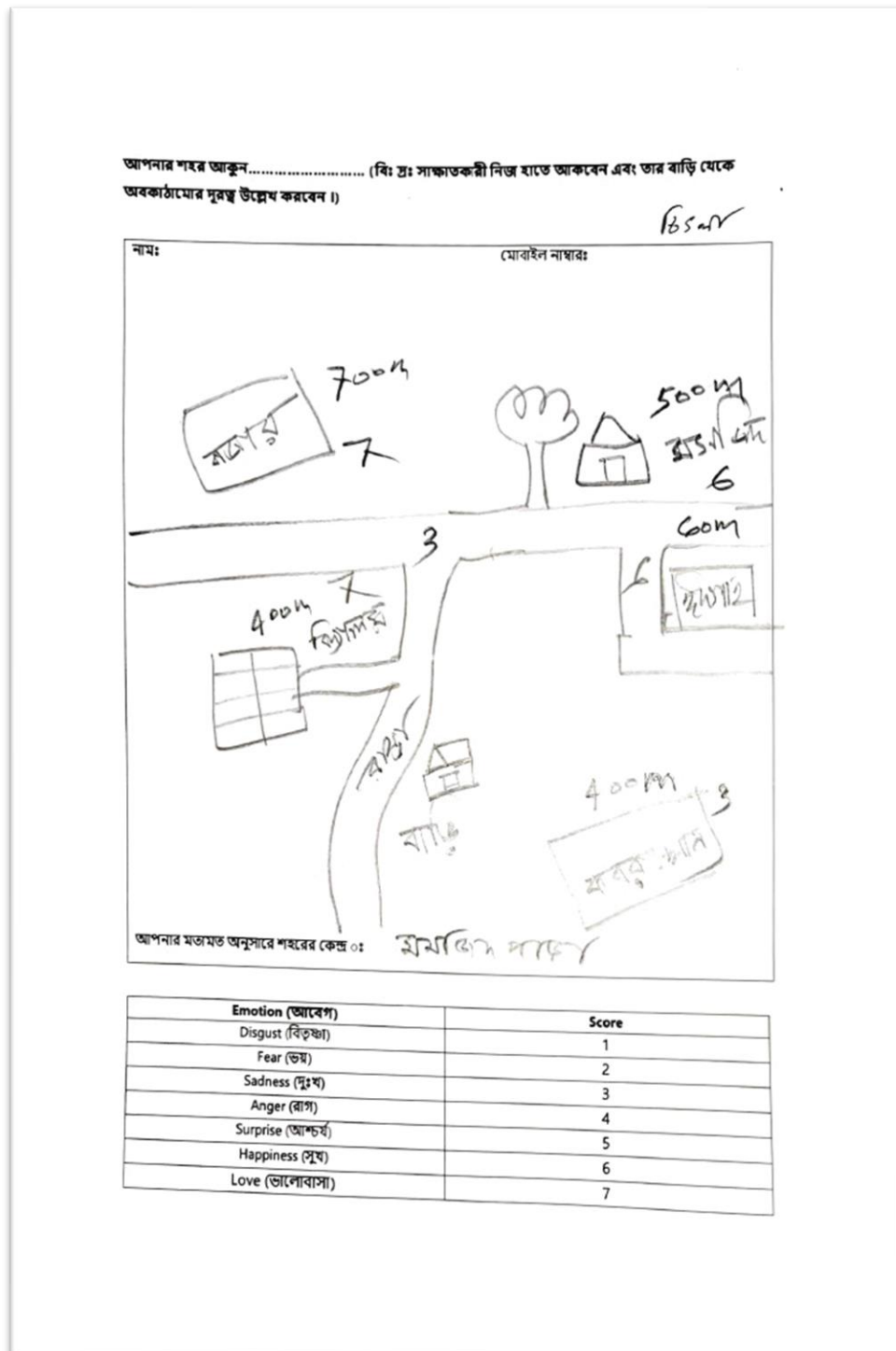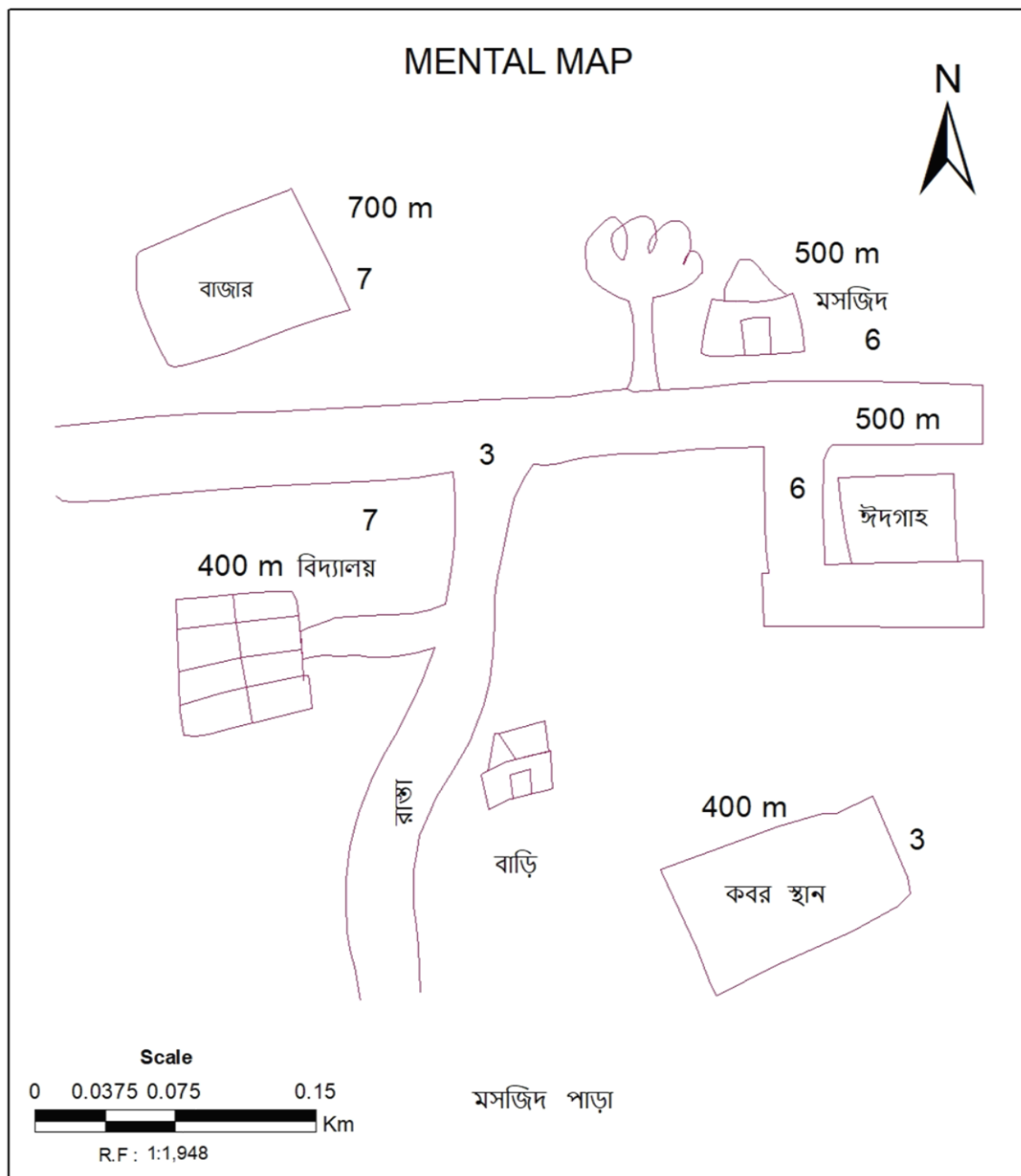

Figure: Mental Map

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Figure: Digitize Mental Map

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9. Linkage with Physical Feature Survey Data

While collecting the socioeconomic data, the same Grid ID and Structure ID have been assigned to identify which structure the socioeconomic data belongs to. Later, using the Grid ID and Structure ID as attributes, a unique ID has been created to link the socioeconomic database with its physical feature counterpart. Using that unique ID, we managed to link both databases together. Figure 9.1 shows the red-marked structures from which socioeconomic data were collected.

Figure 9.1: Location of Households that were surveyed for Socioeconomic data

Both the physical features and socioeconomic attributes were embedded within the physical feature shapefile. The socioeconomic survey has been completed, but because the physical feature survey is still ongoing, not all physical feature data have been collected yet. Once the physical feature survey is completed, the entire physical feature database linked with socioeconomic data will be provided. For the time being, a sample has been provided in
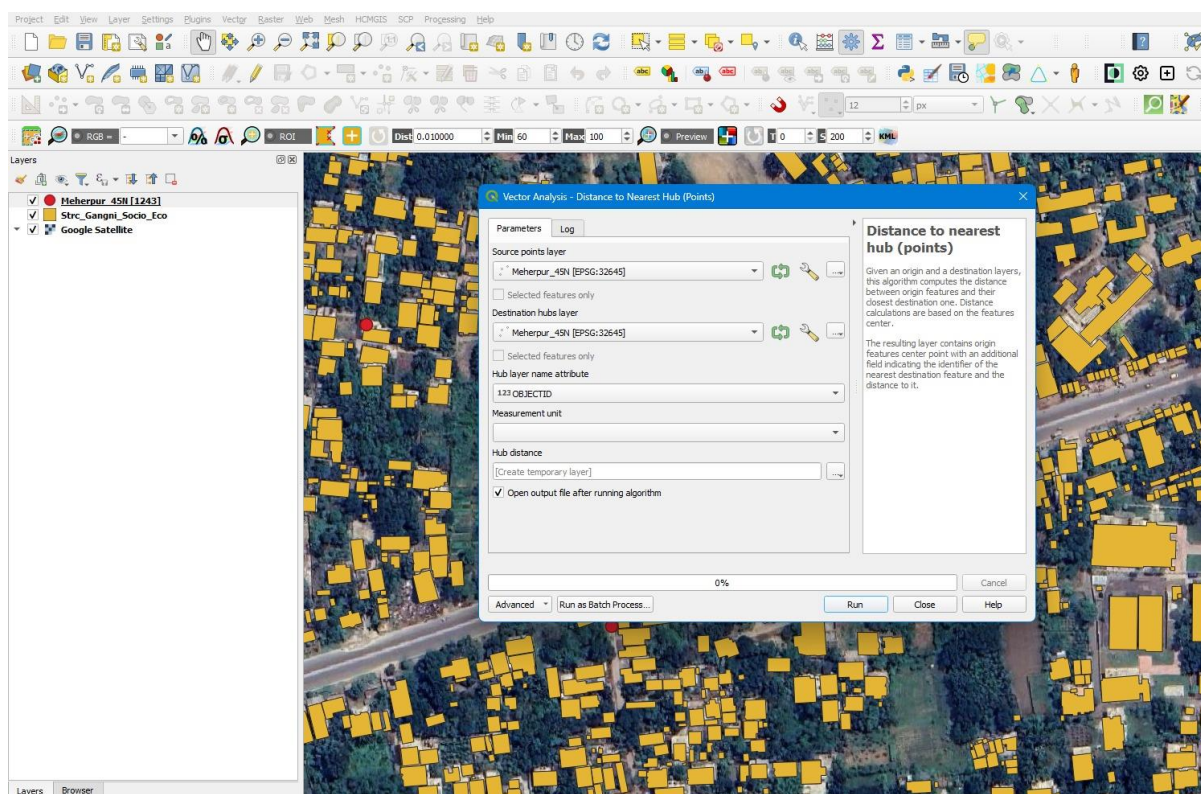
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Figure 9.2: Socio economic data within Physical feature shapefile's attribute

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10. CONCLUSION

The survey phase of the socio-economic study in Meherpur District has laid a robust foundation for achieving the project's strategic objectives. Through careful planning, effective resource deployment, and early stakeholder engagement, this phase has enabled a comprehensive understanding of the district's socio-economic dynamics.

Key achievements during this phase include the successful recruitment and training of a competent field team, along with the deployment of digital data collection tools such as KoBoToolbox, which ensured efficient and accurate data gathering. The implementation of reconnaissance surveys provided essential preliminary insights, helping to identify key socio-economic and infrastructural issues across the district.

Notable findings from the reconnaissance activities highlight critical disparities in infrastructure, limited access to essential services, and unequal economic opportunities. These insights have been instrumental in shaping the design and scope of the detailed household and community-level surveys.

Moreover, the early interaction with community members and stakeholders has played a vital role in building trust and facilitating cooperation, factors that are essential for the continued success of the study. This engagement has also enhanced local awareness of the project's goals and reinforced its participatory approach.

As the project now moves into the detailed data collection phase, emphasis will be placed on methodological rigor, inclusivity, and transparency. The tools, systems, and relationships established during the survey phase have positioned the project to deliver high-quality data that will inform strategic development planning for Meherpur District.

This survey phase report serves as a thorough record of the groundwork laid and will guide the next stages of implementation, ensuring that the project continues to deliver actionable insights and measurable benefits for the people of Meherpur.