



Government of the people's Republic of Bangladesh

Ministry of Housing and Public Works

Urban Development Directorate

82 Segunbagicha, Dhaka-1000

PREPARATION OF DEVELOPMENT PLAN FOR MEHERPUR ZILLA

REPORT ON ASSIGNMENT-10

**A Report of analysis on scope and extent of planning packages such as Action
Area Plan of Meherpur Pourashava**

July 2025

Rakibul Hasan
Junior Urban Planner

Introduction

Overview

Ward 8 is strategically located in the southern belt of Meherpur town, acting as a major entry and transit point for both locals and inter-district travelers. Bounded by the Kushtia–Chuadanga highway and adjacent to the central bus terminal, this ward is a vital zone for transportation, public recreation, and small-scale commerce.

The ward includes important neighborhoods such as Bus Stand Para, College Para, Hotel Bazar Para, Markaz Para, Mollick Para, Notun Sheikh Para and Stadium Para. These areas are densely populated, with an estimated 4405 residents as of 2022. The population consists of a mix of permanent residents, transport workers, small shop owners, and daily wage earners. A significant portion of the youth and working population is engaged in the transport sector, retail trade, and informal services.

Socio-economically, Ward 8 reflects a lower-middle to middle-income character, with growing commercial vibrancy driven by the constant movement of people through the bus terminal. The Zila stadium, located in this ward, serves as a center for youth sports, public events, and community gatherings. Alongside this, the public library adds cultural and educational value, though both facilities are underutilized due to lack of modern infrastructure and regular maintenance.

The ward also faces several urban challenges. Traffic congestion, disorganized parking, and encroachment around the bus terminal are common problems. Many areas lack adequate drainage and Waste Bin, leading to difficulties during the rainy season. Despite these issues, Ward 8 holds significant potential for improvement through focused urban planning.

Purpose

The purpose of the Ward 8 Action Plan is to address key urban challenges and improve the overall living conditions of residents in this important transport and recreation hub of Meherpur Municipality. As a gateway area with high footfall and economic activity, Ward 8 requires targeted interventions to ensure better infrastructure, hygiene, and mobility.

Key issues to be addressed:

- **Road Construction & Upgrades:** Many internal roads are narrow, damaged, or unpaved, causing inconvenience to both vehicles and pedestrians. Road re-construction and rehabilitation will improve connectivity and reduce traffic congestion near the bus stand and stadium areas.
- **Drainage & Waterlogging:** Inadequate and clogged drains lead to frequent waterlogging, especially during monsoon, affecting homes, businesses, and public spaces. The action plan will include improved drainage systems to ensure faster water discharge and flood prevention.
- **Lack of Waste Bins & Poor Waste Management:** The absence of sufficient dustbins results in scattered waste along streets and near markets. Installing community waste bins and

regular waste collection services will help promote a cleaner environment and better public health.

Overall, the Ward 8 Action Plan aims to enhance urban resilience, ensure clean and safe public spaces, and promote a more functional and inclusive neighborhood for all residents.

Demography

Population Projection

Ward 8 of Meherpur Municipality is experiencing steady population growth, reflecting its increasing importance as a transport and recreational hub. Based on available projections. In 2022, the population was 4,405, with a density of 6.72 persons per acre. This upward trend continues with projected populations of 5,587 in 2042 and 5,900 in 2047, resulting in a projected density of 9.09 persons per acre.

Given the total land area of 648.72 acres, the gradual increase in density indicates a moderate but consistent urban expansion. This growth pattern suggests rising demand for housing, infrastructure, and basic services such as roads, drainage, and waste management. Given below in tabular form.

Total Population	Male	Female
4405	2286	2119

Source: BBS 2022

Population Projection

Year	Population	Density (Pop per Acre)
2022	4405	6.72
2027	4648	7.16
2032	4961	7.64
2037	5274	8.13
2042	5587	8.61
2047	5900	9.09

Source: BBS 2022

Environment

Earthquake

Liquefaction Risk and Building Suitability – Ward 8 (Meherpur Municipality)

Ward 8 of Meherpur Municipality primarily consists of D-type (stiff) soil, which is generally considered moderately strong and capable of supporting low- to mid-rise structures. While D-type soils can sometimes be susceptible to liquefaction under strong seismic shaking especially when saturated—the actual risk depends on the Liquefaction Potential Index (LPI).

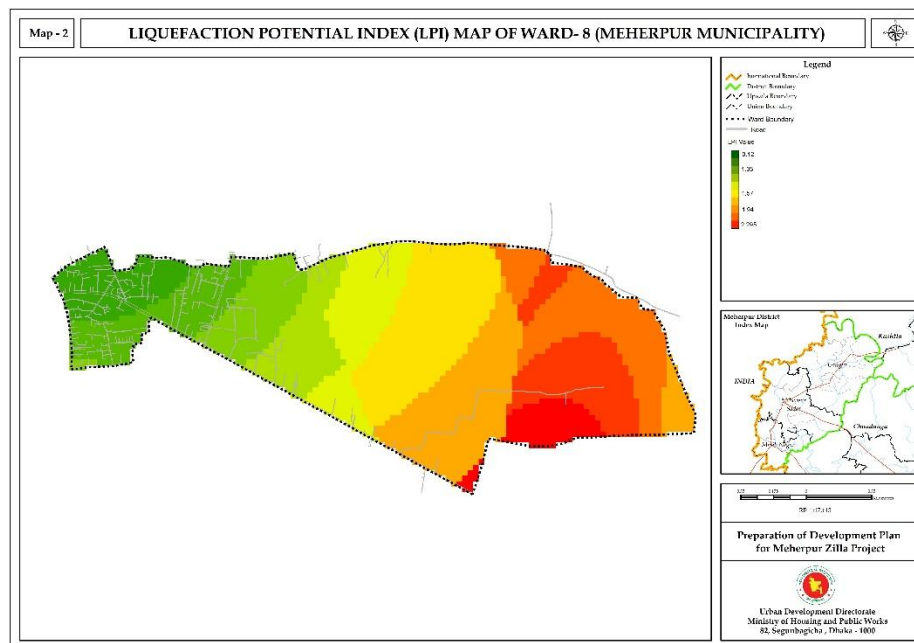
In Ward 8, the LPI ranges from 0.126 to 2.295, which is well below the critical threshold of 5, indicating a low potential for liquefaction. Even in the more densely populated neighborhoods,

where structural load is higher, LPI values remain between 0.12 and 1.35, reinforcing the conclusion that the subsoil is geotechnically stable under current and projected use.

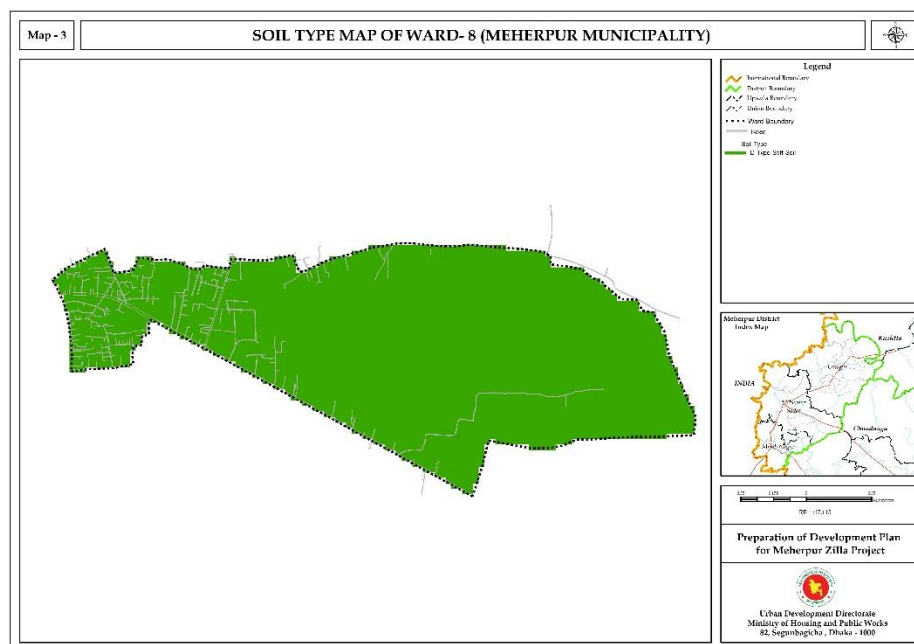
Summary of Soil Conditions and Building Suitability

Parameter	Value / Description	Interpretation
Soil Type	D-type (Stiff Soil)	Moderately strong; potentially liquefiable only under high shaking
LPI Range (Ward-wide)	0.126 – 2.295	Low liquefaction risk
LPI in dense settlement zones	0.12 – 1.35	Very low risk; safe for current residential use
Total Area of Ward	648.72 acres	Mix of dense and low-density development zones
Population (2022–2047)	4,405 → 5,900	Gradual increase; density rising to 9.09 persons/acre

Although Ward 8 is built on D-type stiff soil, the low LPI values confirm that liquefaction risk is minimal, making the area suitable for both existing and future urban development. Structural safety can be ensured by adhering to BNBC 2020 guidelines and implementing foundation designs tailored to the soil profile. Therefore, Ward 8 holds strong potential for planned vertical growth, especially in low-density areas, while maintaining structural resilience.



Map: LPI Map of Ward-8 (Meherpur Municipality)



Map: Soil Type Map of Ward-8 (Meherpur Municipality)

Education

Ward 8 of Meherpur Municipality hosts three key educational institutions that contribute significantly to the literacy and skill development of the local population. These are:

- Meherpur Government Girls' High School
- Meherpur Government Technical School
- Meherpur Government College

These institutions serve a diverse age group and provide access to both general and technical education. The presence of a government college ensures opportunities for higher education within the ward boundary.

According to recent demographic data, literacy rates in Ward 8 reflect strong educational progress, especially among the male population. The literacy percentage across various age groups is as follows:

Age Group	Literacy Percentage (%)		
	Total	Male	Female
5 Years Above	89.55	92.12	86.74
7 Years Above	90.22	92.90	87.29
15 Years Above	88.82	91.94	85.65

Source: BBS 2022

This data indicates a relatively high literacy rate, though a slight gender gap remains, with male literacy consistently higher across all age brackets. The presence of dedicated girls' schools, however, is helping to bridge this gap gradually.

Inclusion of vocational education through the technical school is particularly important for employment-focused skill development, aligning with the socio-economic context of the ward.

In Ward-8, there are a total of 952 individuals currently identified as students within the 5–29 age group, comprising 501 males and 451 females.

Age Group	Total	Male	Female
Currently Student (5-29 Years)	952	501	451
5-9 Years	252	133	119
10-14 Years	305	157	148
15-19 Years	250	133	117
20-24 Years	116	61	55
25-29 Years	29	17	12

Source: BBS 2022

Based on age distribution:

- The highest number of students is found in the 10–14 years group (305 individuals), making up nearly one-third of the total student population.
- This is followed by the 5–9 years group (252 students) and the 15–19 years group (250 students).
- A sharp decline is observed in older age groups — 116 students in the 20–24 years group and only 29 students in the 25–29 years group — indicating a significant drop in educational participation after adolescence.

This data highlights that educational engagement is strong during childhood and teenage years, but declines notably in early adulthood. This trend suggests a need for improved access to higher and technical education and interventions to reduce dropout rates in the older age groups.

Employment and Occupational Structure in Ward 8 (Based on BBS Data – 5 Years and Above)

According to the Bangladesh Bureau of Statistics (BBS), Ward 8 of Meherpur Municipality shows a diverse employment profile among individuals aged 5 years and above, based on a total population of 4,405. The data highlights a clear gender disparity in workforce participation and occupational roles.

Workforce Participation Status

Type	% of Total Population	Male (%)	Female (%)	Remarks
Employed	30.83%	88.66%	11.34%	Majority male-dominated
Household Work	27.55%	0.33%	99.67%	Almost entirely female
Looking for Work	0.89%	79.50%	20.50%	Unemployment present, mainly among males
Do Not Work	34.12%	60.35%	39.65%	Includes elderly, students, disabled, etc.

Source: BBS 2022

This data indicates that while only 30.83% of the total population is officially employed, a large portion of females (27.55%) are involved in unpaid household work. The unemployment rate (0.89%) is low, though the majority seeking jobs are men.

Occupational Distribution of the Employed

Sector	% of Total Population	Male (%)	Female (%)	Remarks
Agriculture	1.23%	100.0%	0.0%	Entirely male-dominated
Industry	2.88%	96.1%	3.9%	Minor female involvement
Service Sector	26.70%	87.33%	12.67%	Highest share of employment

Source: BBS 2022

The service sector dominates the occupational field in Ward 8, with 26.7% of the total population engaged in government, private, or informal service-related jobs. Agricultural involvement is surprisingly low and exclusively male, while the industrial sector holds a small share with very limited female participation.

The employment scenario in Ward 8 reveals a male-dominated workforce with limited participation of women in formal employment, who are mostly involved in unpaid household work. The dominance of the service sector suggests a transition toward urban-based economic activity, which should be considered in future urban and economic planning for the ward.

Physical Feature

Building Structure and Vertical Development in Ward 8, Meherpur

The built environment of Ward 8, Meherpur Municipality, reflects a mix of traditional and modern construction patterns. Based on recent structural surveys, the ward exhibits a predominance of Pucca and Semi-Pucca structures, alongside a significant number of Tin Shade houses. The data

also highlights the ward's limited vertical development, with the majority of buildings being single-story.

Types of Building Structures

Type	Number
Katcha	58
Pucca	1046
Semi Pucca	1079
Tin Shade	829

Source: Physical Feature Survey 2025

- Semi-Pucca (38%) and Pucca (37%) structures dominate the landscape, indicating gradual urban consolidation.
- Katcha structures (2%) are minimal, reflecting an overall improvement in housing conditions.
- Tin Shade houses (29%) still exist in large numbers, pointing to economic constraints among certain populations.

Building Floor Distribution

- Approximately 84% of all buildings are single-storied, showing a horizontally expanding neighborhood.
- Multi-storied buildings (2 to 5 floors) are growing in small numbers, especially along accessible roads or commercial nodes.
- Only 2 structures exceed 6 stories, indicating very limited high-rise construction in the area.

Floor	Number
1	2607
2	263
3	115
4	20
5	19
7	2

Source: Physical Feature Survey 2025

Road

The road network in Ward 8 exhibits a blend of both paved and unpaved infrastructure, reflecting a semi-urban development character. Based on available data, the total road length in the ward is approximately 22.716 kilometers, comprising different construction types that vary in quality, accessibility, and durability.

Type	Length (km)
BTR	9.464

Earthen	8.27
HBB	0.762
RCC	4.22

Source: Physical Feature Survey 2025

Drain

The drainage system of Ward 8 shows initial improvements but remains partially inadequate in terms of full coverage and sustainability. Proper drainage is crucial in this area to tackle issues like seasonal waterlogging, especially in low-lying and densely populated zones.

Type	Length (km)
Coverd	7.53
Uncovered	0.76

Source: Physical Feature Survey 2025

- The majority of drains (approximately 90.8%) are covered, which helps in maintaining hygiene, preventing mosquito breeding, and protecting infrastructure.
- Only 0.76 km (around 9.2%) of the drains are uncovered, mostly found in older or less developed parts of the ward, posing health and environmental risks.

Utility

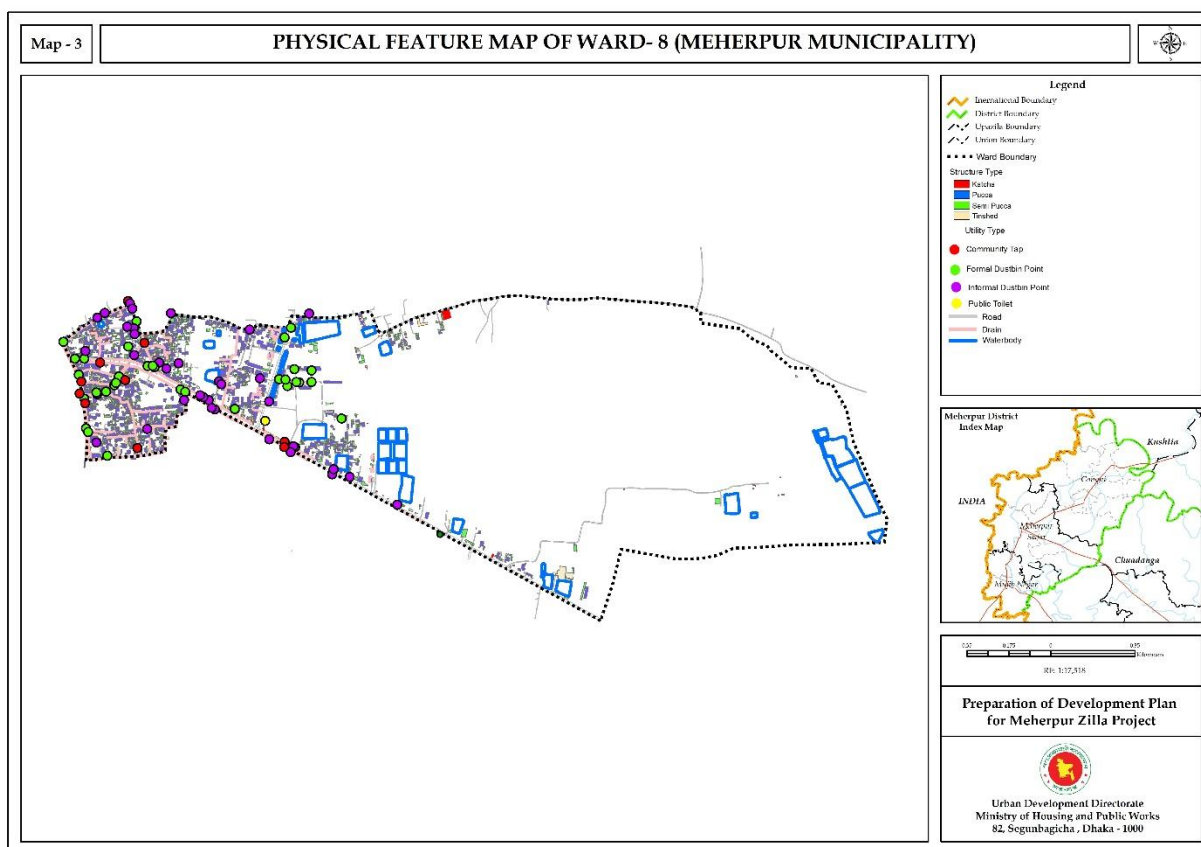
Ward 8 provides some basic public utility services, yet it faces challenges in terms of adequacy, accessibility, and maintenance. The current status of utilities reveals a mixed pattern of both formal and informal services catering to water supply, sanitation, and solid waste management.

Existing Utility Infrastructure

Type	Number
Community Tap	11
Formal Dustbin	32
Informal Disposal Point	35
Public Toilet	1

Source: Physical Feature Survey 2025

- Community taps (11 units) play a key role in ensuring access to drinking water, especially for low-income or un piped households.
- Solid waste disposal remains a concern. Though 32 formal dustbins exist, the presence of 35 informal disposal points indicates issues with proper waste collection and behavior.
- Only 1 public toilet is available, which is insufficient for the entire ward population of 4,405, particularly in markets or high-traffic areas.



Map: Physical Feature Map

Land-use

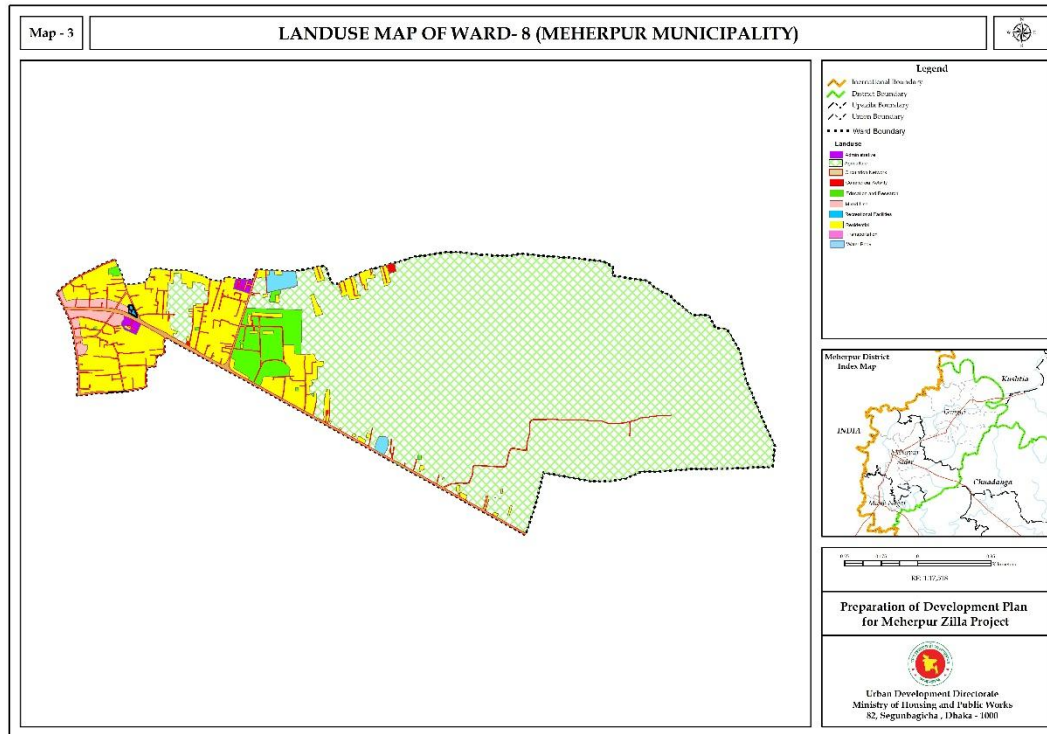
Ward 8 of Meherpur Pourashava spans approximately 648.72 acres, characterized predominantly by agricultural land use. Despite its municipal status, the ward retains a semi-rural character with limited urban development.

Type	Area (Acre)
Administrative	1.99
Agriculture	510.59
Commercial	0.43
Education	23.22
Mixed Use	7.45
Residential	84.76
Circulation Network	17.67
Waterbody	3.88
Open Space & Recreation	0.33
Transportation	0.004

Source: Physical Feature Survey 2025

Key Observations

- Agricultural land dominates the ward ($\approx 78.7\%$), indicating a strong rural and farming-based economy.
- Residential areas cover around 84.76 acres, reflecting moderate urban settlement.
- Only 0.43 acres are designated as commercial, suggesting limited market or business infrastructure.
- The presence of 23.22 acres for education shows the ward's investment in institutional land use, which is relatively higher than many similar areas.
- Open space and recreation are extremely limited (0.33 acres), highlighting a need for planning public parks or green areas.
- Circulation network occupies about 2.7% of the land, indicating basic road infrastructure.



Map: Land-Use Map of Ward-8 (Meherpur Municipality)

Digital Elevation Model

The Digital Elevation Model (DEM) values in Ward 8 range from 3.01 to 15.49 meters above mean sea level, representing a gently undulating terrain with some noticeable elevation differences across the area.

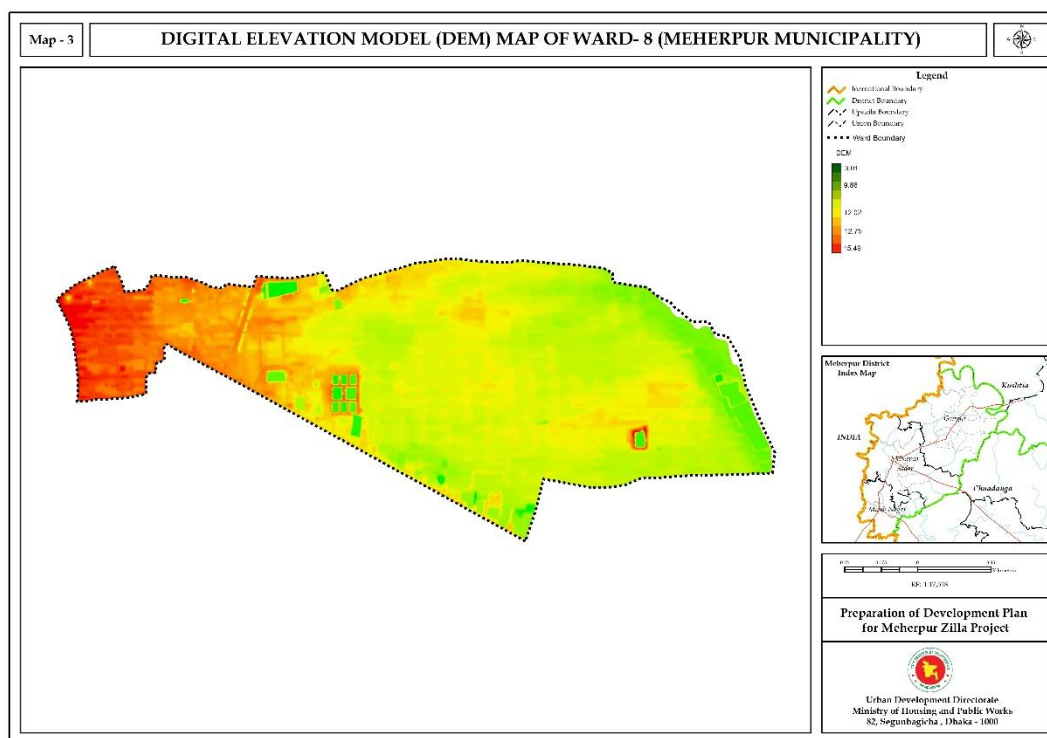
Elevation Characteristics by Land Use

Higher Elevation Zones (12.02 – 15.49 m):

These zones are primarily occupied by residential and structural developments. The relatively elevated ground provides better natural drainage, making it suitable for housing and infrastructure. This indicates a conscious or organic selection of safer, elevated areas for construction.

Lower Elevation Zones (3.01 – 12.01 m):

These areas are mostly used for agricultural purposes. The lower-lying lands are fertile and suitable for cultivation but may also be more prone to seasonal waterlogging or flood risk during monsoon periods.



Map: Digital Elevation Model (DEM) Map of Ward-8 (Meherpur Municipality)

Suitable Area

This map depicts a comprehensive suitability analysis for future development in Ward-8, grounded in the evaluation of key physical features. The assessment incorporates multiple spatial parameters, including Digital Elevation Model (DEM) for topography, proximity to existing road networks, presence of water bodies, vegetation cover, existing structure types, and agricultural land use. Each of these layers contributes to identifying land parcels based on their capacity to support sustainable urban development.

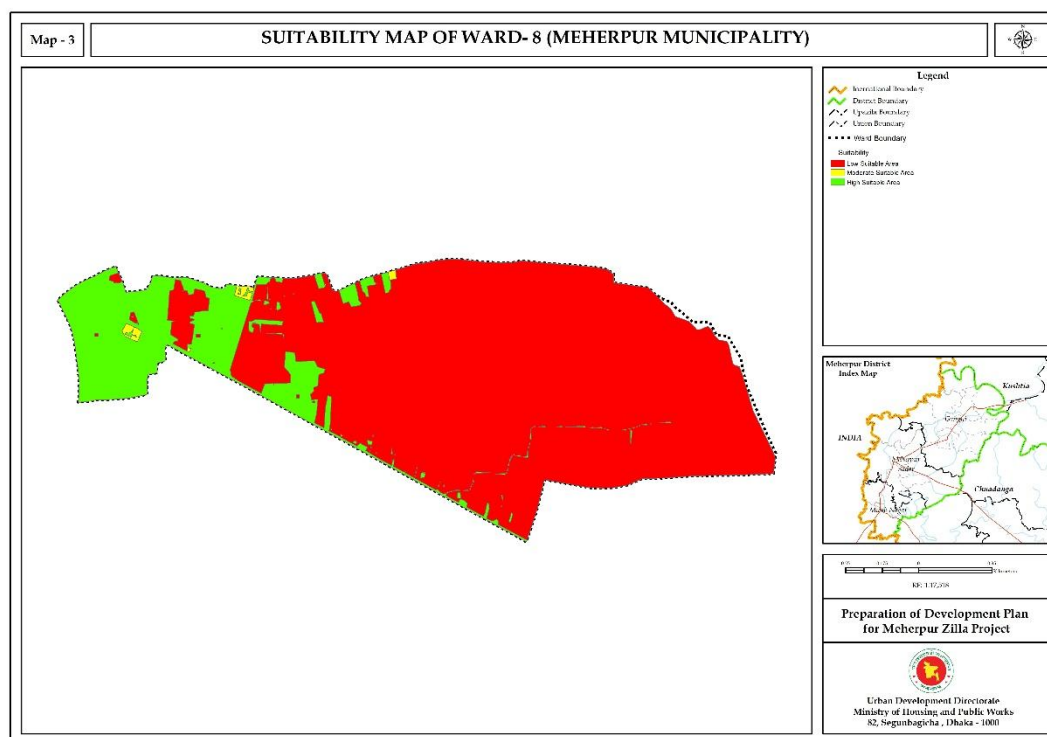
The result is a three-tier classification:

High Suitable Area (yellow): Concentrated in the western part of the ward, where the land is relatively elevated, well-connected by roads, and characterized by low vegetation and scattered built-up structures. These zones are most favorable for immediate development.

Moderate Suitable Area (green): These transitional zones are suitable with some constraints, requiring moderate interventions for service provision or land conversion.

Low Suitable Area (red): Spanning most of the central and eastern parts, these areas are limited by physical constraints such as poor accessibility, proximity to agricultural or ecologically sensitive zones, or unsuitable slope and elevation conditions.

This suitability analysis provides a science-based foundation for prioritizing urban growth, ensuring that expansion occurs in harmony with the ward's physical landscape and minimizing risks from environmental degradation or infrastructure mismatch.



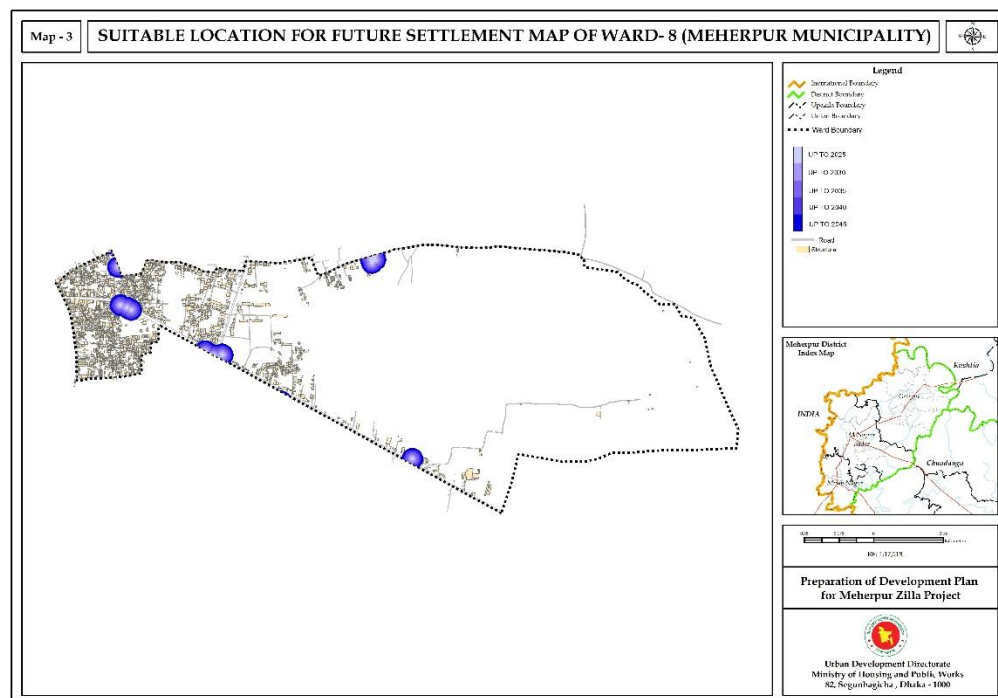
Map: Suitability Map of Ward-8 (Meherpur Municipality)

Suitable Area for Residential Area

This map presents a phased projection of suitable locations for future residential expansion in Ward-8, up to the year 2045. The analysis is based on the existing distribution of kacha (non-permanent) structures, which serve as indicators of underutilized or transitional land use. These areas have been identified as potential sites for future planned settlements.

The phased expansion zones—shaded in varying intensities of blue—highlight a strategic approach to urban growth, particularly focusing on areas that are already connected by road infrastructure but lack permanent, formal housing. This planning logic allows the municipality to gradually transform kacha settlements into formal residential areas, ensuring better infrastructure provisioning.

Importantly, this settlement strategy promotes vertical densification over unregulated horizontal sprawl. By identifying areas with scattered, low-rise kacha housing, the plan supports future vertical development to accommodate a growing urban population efficiently—preserving open space and minimizing environmental disruption.



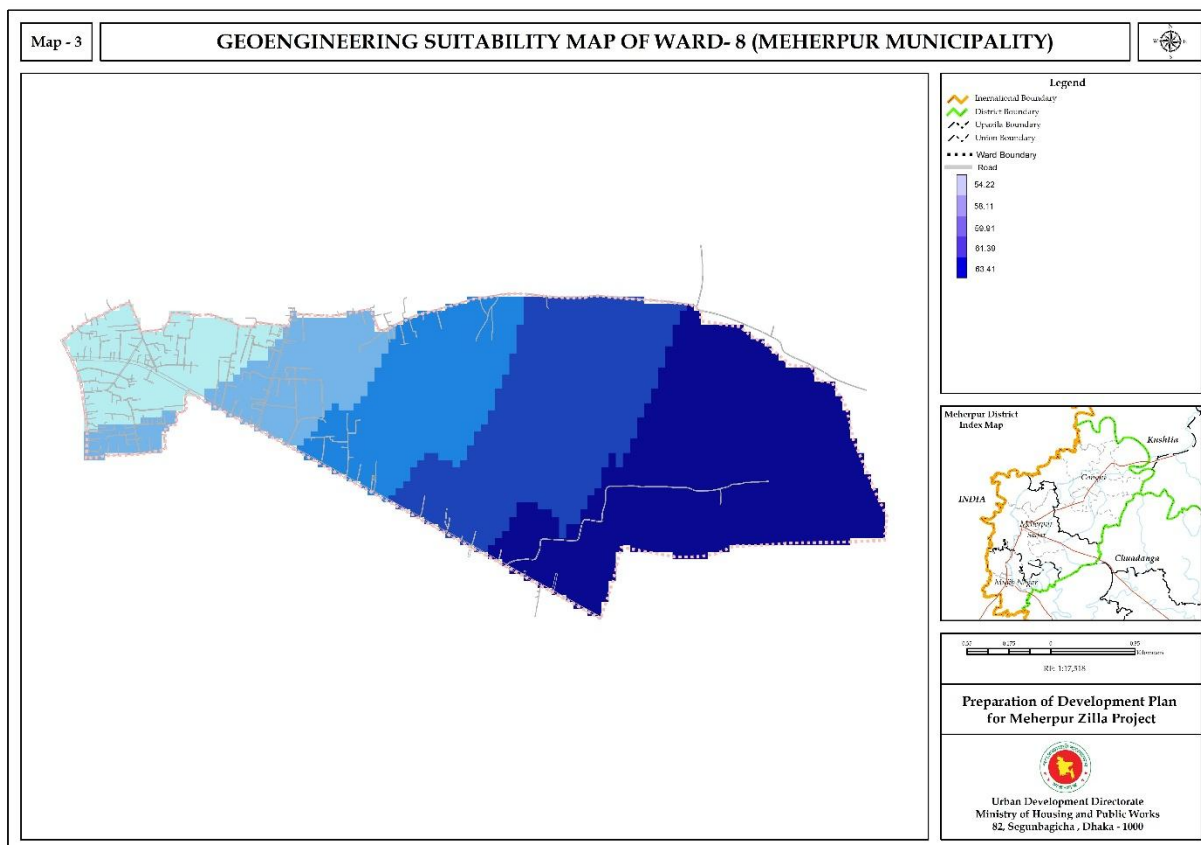
Map: Suitable Location for the Future Settlement Map of Ward-8 (Meherpur Municipality)

Building Suitability

In Ward-8, the Geoengineering Suitability values range between 54.22 and 63.40, which falls under the Moderate Suitability category (33.484–66.742).

This indicates that the area is partially suitable for development. While it does not present major engineering constraints, it may still require careful planning and technical assessment before any large-scale construction. Factors such as soil stability, drainage capacity, and slope may vary across the ward and should be evaluated in detail.

Overall, Ward-8 holds moderate potential for future residential or infrastructure development, with the need for appropriate engineering solutions to ensure long-term safety and sustainability.



Map: Geoengineering Suitability Map of Ward-8 (Meherpur Municipality)