MINISTRY OF PANCHAYATI RAJ

Enhanced Gram Panchayat Spatial Development Plan (GPSDP) of Makrampur Gram Panchayat

District: West Medinipur

Block: Narayangarh

State: West Bengal

Makrampur Gram Panchayat envisions becoming a model rural community by enhancing infrastructure, promoting diversified and sustainable livelihoods, ensuring social equity, and strengthening disaster resilience.

Prepared By: Indian Institute of Technology Kharagpur

Draft Plan

June 2025

GOVERNMENT OF INDIA

Please Note:

1. **Kindly refer to the circulated Enhancement of GPSDP Guidelines, for the same, please find below a Table of Contents (ToC)/List of Contents for reference to prepare the Draft and Final Enhanced GPSDP.**
2. **Kindly ensure these topics are covered so that the GPSDP can be evaluated based on the shared below ToC/List of Contents.**
3. **The Enhanced GPSDP is to be kept very focused, relevant, and brief as possible, so that GPs can use it for implementation.**
4. **All the Important Maps to be of A2/A3 size, folded and attached at the section where they are referred to. Smaller Maps can be placed in between the running text of the Enhanced GPSDP.**
5. **Bigger Tables can be placed at a relevant place in Landscape Mode in the Enhanced GPSDP.**
6. **All the detailed research/documentation cited for preparing Enhanced GPSDP may be referred to in the main section, but should be placed as Annexures to the Enhanced GPSDP. Research/documentation can also be shared separately along with final Enhanced GPSDP.**
7. **The Final Deliverables to MoPR and the State will have the following:**
    a. **Enhanced GPSDP Document (Editable .doc/other file format and Final Softcopy in .pdf format).**
    b. **Small Video (3-5 Minutes Max.) on the Enhanced GPSDP along with 3D Visualizations/Walkthrough of the Proposals.**
    c. **Spatial Analysis & generated Maps (Proper Scaled) (in editable GIS formats with all layers & Final Maps in .pdf/.jpeg format) .**
    d. **Financial Model.**
    e. **Technical & Financial Feasibility Reports.**
8. **(GP Copies) Document Converted in Local Language (Optional)**

Project Team

1. Tarak Nath Mazumder	Advisor & Mentor
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Abbreviations

Abbreviation	Full Form
ADM	Additional District Magistrate
BDO	Block Development Officer
CAA	Constitutional Amendment Act
CBO	Community-Based Organization
DDO	District Development Officer
DIO	District Informatics Officer
DM	District Magistrate
GIA	Grant-in-Aid
GIS	Geographic Information System
GP	Gram Panchayat
GPDP	Gram Panchayat Development Plan
GPSDP	Gram Panchayat Spatial Development Plan
GSDP	Gross State Domestic Product
GSVA	Gross State Value Added
ICDS	Integrated Child Development Services
ICT	Information and Communication Technology
IIT	Indian Institute of Technology
JJM	Jal Jeevan Mission
LULC	Land Use Land Cover
MoPR	Ministry of Panchayati Raj
MP	Member of Parliament
MSME	Micro, Small and Medium Enterprises
NIT	National Institute of Technology
NGO	Non-Governmental Organization
NH	National Highway
NIC	National Informatics Centre
NRLM	National Rural Livelihood Mission
PFP	Panchayat Financial Plan
PMAY-G	Pradhan Mantri Awas Yojana - Gramin
PMGSY	Pradhan Mantri Gram Sadak Yojana
PRDD	Panchayat and Rural Development Department
PRI	Panchayati Raj Institution
RADPFI	Rural Area Development Plan Formulation and Implementation
SC	Scheduled Caste
SDG	Sustainable Development Goals
SEC	State Election Commission
SFC	State Finance Commission
SHG	Self-Help Group
ST	Scheduled Tribe
SWAMITVA	Survey of Villages and Mapping with Improvised Technology in Village Areas
VC	Video Conference
WBSEDCL	West Bengal State Electricity Distribution Company Limited
WBSRDA	West Bengal State Rural Development Agency

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Finalization of GPSDP (As per Annexure-2 of the guidelines)

Gram Panchayat Spatial Development Plan (GPSDP) for Makrampur Gram Panchayat

The Enhanced GPSDP of Makrampur Gram Panchayat, of Narayangarh Block, Paschim Medinipur District and West Bengal State, prepared by the Indian Institute of Technology, Kharagpur, Department of Architecture and Regional Planning, has been approved by the Policy Committee and Technical Committee.

A Gram Sabha Resolution has been passed on _____(Date)____. It shall be completely implemented by the Gram Panchayat in the coming years, with coordination from the aligned departments.

Signature
(Name) **Date:_____**
(Gram Pradhan)

Signature
(Name) **Date:_____**
(Block Development Officer)

Signature
(Name) **Date:_____**
(CEO Zila Parishad/DPRO)

Signature
(Name) **Date:_____**
(Director, State Panchayati Raj Dept.)

Gram Sabha Resolution (at the discretion of the Gram Panchayat)

(As per Annexure-1 of the guidelines)

RESOLUTION

We, the Elected Representatives and Officials of Makrampur Gram Panchayat of Narayangarh Block, Paschim Medinipur District, West Bengal State, declare that the Enhancement of GPSDP has been successfully prepared. We concur with the Prepared plan and it shall be completely implemented by the Gram Panchayat in the coming years, with coordination from the aligned departments.

This resolution is passed unanimously in the Gram Sabha.

Signature (Panchayat Pradhan)

Gram Panchayat: (Name) **Date:_____**

District:

State:

Executive Summary

The Ministry of Panchayati Raj, Government of India, has launched the Gram Panchayat Spatial Development Plan (GPSDP) initiative under the SRIJAN programme, aiming to enable integrated planning and development for Gram Panchayats (GPs). With implementation in 34 GPs across 14 states and support from 17 institutional partners, the programme leverages spatial data, base maps, and GIS surveys to prepare comprehensive local development plans. Guided by updated RADPFI guidelines (2022) and supported by the Swamitva Scheme, the initiative emphasizes digital tools, including 3D visualizations, to promote village digital twins and enable data-driven rural transformation.

Introduction to the Gram Panchayat

Makrampur Gram Panchayat is located in the Paschim Medinipur district of West Bengal and functions as a Rural Local Body under the Narayangarh Block, part of the Paschim Medinipur Zila Parishad. It administers 44 villages and is strategically located in close proximity to National Highway 16 (NH16), which enhances its connectivity to major urban centers like Kolkata, Kharagpur, and Bhubaneswar. The region also benefits from the South Eastern Railway network via Kharagpur Junction and proximity to Haldia Port, supporting trade and industrial transport. Historically, Makrampur GP has a rich legacy, including accounts of a British-era bombing site and the Belti Old Queen Palace, which holds potential for heritage conservation and tourism. Spatial analysis from 2010 to 2020 shows a transition from compact village clusters to linear, ribbon-like development along NH-16, with increasing built-up areas and fragmentation of agricultural lands

Demographic Profile

As of April 1, 2024, Makrampur GP has a total population of 24,092 with a population density of 388 per square kilometre. The average household size is 4.32. The literacy rate in the GP is 62%, but digital literacy is extremely low at 4%, indicating a significant gap in technology adoption. Scheduled Caste (SC) population accounts for 19.86% (4431) and Scheduled Tribe (ST) population accounts for 44.54% (9939) of the total population. The age-sex pyramid reflects a youthful population, but a higher female percentage in the 25-54 age range suggests male out-migration for jobs. Key observations highlight the need for infrastructure development, education and skill enhancement, and policies to address gender disparities and reduce out-migration.

Gram Panchayat Economic Profile

The economy of Makrampur Gram Panchayat is primarily rural and agriculture-based, with a heavy reliance on paddy cultivation. Animal husbandry, including poultry, goat, and cow husbandry, is also crucial, though commercial utilization remains low due to poor veterinary services and lack of cooperative infrastructure. A significant portion of the tribal population is engaged in Sal leaf collection, but villagers receive limited economic benefits as plate production doesn't happen locally. Self-Help Groups (SHGs) are active but face barriers in market access and profitability. Most of the workforce (78%) is employed within the GP, but a significant portion commutes to nearby cities for work due to limited local job opportunities.

Heritage, Cultural and Tourism Profile

Makrampur GP possesses heritage assets like the Belti Old Queen Palace and a historical site of a British-era bombing. The cultural profile is diverse, with Scheduled Tribes (Lodha, Munda, Bhumij) constituting 45% of the population. Bengali is the primary language, with Santali also widely spoken. While the GP does not have prominent tourist sites, nearby attractions exist, and local festivals like Tusu Parab and Gajan offer cultural tourism potential. However, infrastructure deficiency (accommodation, dining), connectivity challenges, and the need for active cultural preservation hinder tourism development

In response, the Department of Architecture and Regional Planning at IIT Kharagpur developed an integrated spatial development plan for Makrampur. Key interventions include:

- Establishing Agricultural Storage & Processing Units (e.g., mini rice mills, mustard oil extraction).
- Developing Dairy & Poultry Cooperatives.
- Setting up a Sal Leaf Plate Manufacturing Unit.
- Expanding Irrigation Infrastructure, particularly with solar pumps, and repairing drainage channels.
- Supporting Small-Scale Industrial Clusters (carpentry, goldsmithing).
- Creating a Skill Development & Entrepreneurship Training Centre.
- Initiating Rural Transport & Market Access improvements.

These interventions are designed not only to address current challenges but also to provide a long-term development pathway for the panchayat up to 2035, aligning with sustainable rural planning and ecological sensitivity. Makrampur is positioned to become a model

panchayat for forest-edge and tribal-dominated areas, demonstrating how spatial planning, technology integration, and community participation can reshape rural futures under the GPSDP framework.

1. Project Background

1.1. Context

The Ministry of Panchayati Raj had prepared 34 Gram Panchayat Spatial Development Plans (GPSDP) with the help of 17 partner Planning and Architecture Institutions like SPA, CEPT, NITs, IITs and other institutions of national repute across 14 States in India in the year 2020. The prepared GPSDPs have proved to be a steppingstone in better understanding the selected 34 Panchayats existing conditions, identifying the issues related to the service delivery of the infrastructure (physical as well as social), projecting various needs for the upcoming 10-20 years and based on the projections the projects required to be taken up in a phase-wise manner for better development. The prepared plans were based on the Spatial analysis of various parameters, preparation of base map, surveys, etc. Though GPSDPs were prepared for the panchayats to adapt, due to various reasons, they were not taken up in complete capacity, and in the course of time, the MoPR has also introduced a few new programs which shall further strengthen the course of development of the Panchayats. Thus, the enhancement of the GPSDP becomes a necessary exercise to pool-in the new programs and stage the new development strategies by incorporating them all in the enhanced GPSDP.

1.2. Enhanced GPSDP - Areas of Emphasis

Makrampur Gram Panchayat located in Narayangarh Block of Paschim Medinipur District in West Bengal, which is one of the 34 Gram Panchayats which was elected. Makrampur is located on the Chennai-Kolkata National Highway 16., Makrampur faces many challenges. However, the unique case is of presence of farmlands along with deep forested areas and industries around the panchayat.

Other issues, such as a lack of higher health care facilities within the panchayat, irregular spread of buildings due to a lack of zoning regulations, complete absence of building bylaws, roads with no drainage, and dangerous road crossings.

In order to deal with the problem of health care access a PHC has been proposed in the Gram Panchayat. Besides, several other proposals, such as Modular and Context Sensitive Primary School, which can be used as a skill development center, Pond Rejuvenation, organized and designed traffic crossings on NH 16, Multipurpose Playground, and revival and beautification of the Belti palace area, are targeted.

1.3. Objective and Scope of the Assignment

Keeping in mind the end objective as indicated in the Guidelines for Enhancement of GPSDP for Rural Areas- *to ensure equitable development of the area, prevent concentration of a particular activity in one place, take into account efficient distribution of facilities, place-making, infrastructure, networks, and housing, and follows the neighbourhood concept of development*. The IIT Kharagpur team has achieved the following proposals –

1) Primary School-cum-Skills development Center
2) Primary Health Center
3) Pond Rejuvenation
4) Rejuvenation of the Belti Old Queen's Palace
5) Belti Lake rejuvenation
6) Upgradation of Belti Bridge
7) Highway crossing infrastructure & Local product stalls along NH 16

1.4. Approach and Methodology

The methodology for the preparation of the GPSDP for Makrampur GP was conceptualized as a structured, iterative, and participatory planning process, in alignment with the guidelines issued by the MoPR.

It involved a blend of qualitative and quantitative techniques, spatial mapping, stakeholder engagement, and technical analysis to ensure that the development plan is both grounded and future ready. The approach adopted can be broadly classified into the following key phases:

1.4.1. GP Selection Criteria

The coordinating institute was to select GPs for the project in mutual consultation with the Panchayati Raj Department of the State Government. For consultation with stakeholders and guidance on the selection of two GPs by the various coordinating institutes, the Ministry hosted a Video Conference (VC) on July 01, 2020. During the meeting, the following criteria were specified for the selection of GPs.

8) Rapid Development Potential: The GPs should be located on or near national or state highways with good connectivity and high potential for rapid economic development.

2) Proximity: The GPs should be close to the Coordinating Institute.

As per the criteria specified, Aguibani Gram Panchayat in Jhargram District and Makrampur Gram Panchayat in Paschim Medinipur District were selected in coordination with the Panchayat and Rural Development Department of West Bengal.

1.4.2. Methodology Adopted

The methodology for the preparation of the GPSDP for Makrampur GP was conceptualized as a structured, iterative, and participatory planning process, in alignment with the guidelines issued by the MoPR.

It involved a blend of qualitative and quantitative techniques, spatial mapping, stakeholder engagement, and technical analysis to ensure that the development plan is both grounded in reality and future ready.

The approach adopted can be broadly classified into the following key phases:

1. Formation of Committees

To ensure institutional ownership and coordinated implementation, three key committees were constituted per Annexure-1 of the MoPR guidelines:

- **Policy Committee:** Led by the Additional District Magistrate, this committee provided strategic oversight and approvals.
- **Technical Committee:** Headed by the Block Development Officer, this group facilitated technical guidance and on-ground coordination.
- **Working Group on Finance:** Focused on aligning the development plan with financial feasibility, budget allocation, and convergence of schemes.

These committees included representatives from various departments such as education, health, forest, and rural development, as well as elected GP members, SHGs, NGOs, and community-based organizations.

2. Baseline Data Collection and Surveys

- **Secondary data** was gathered from Census reports, Jal Jeevan Mission Dashboard, government department records, and previous planning documents.
- **Primary surveys** were conducted to fill data gaps related to housing, infrastructure, socio-economic conditions, and environmental aspects.
- **GIS-based field verification and mapping** helped prepare updated base maps and spatial layers including land use, drainage, and topography.

3. Spatial and Sectoral Analysis

A detailed spatial analysis of the GP was undertaken using QGIS tools. This included:

- Topography and slope mapping
- Watershed and drainage analysis
- Land use and land cover classification (LULC 2020 and 2023)
- Soil and hydrology assessment
- Connectivity and infrastructure evaluation

In parallel, sectoral profiles were prepared covering demographics, economy, education, health, housing, social infrastructure, and environmental resilience.

4. Stakeholder Engagement

Multiple rounds of consultations were held:

- For data validation and scheme convergence.
- With GP representatives and local stakeholders for the needs assessment.
- Gram Sabha discussions to capture community aspirations and finalize the vision.

Key stakeholder meetings were conducted, including state-level reviews, site-level interactions, and VC consultations.

5. Development Vision and Thematic Strategy Formulation

Based on analysis and consultations, a shared Development Vision was articulated for the GP. Key development themes were identified, such as livelihood enhancement, infrastructure improvement, disaster resilience, and environmental sustainability, each supported by proposals and spatial interventions.

6. Proposal Drafting, Validation, and Finalization

Spatial strategies, project proposals, and land suitability plans were drafted with technical detailing. These were then:

- Reviewed by technical committees and stakeholders
- Revised based on feedback from the Gram Panchayat and community
- Finalized in coordination with the District Planning Committee and Policy Committee

The entire methodology was documented in a transparent, scalable, and replicable format to serve as a model for future GP-level spatial planning exercises. The detailed methodology followed in the preparation of the Enhanced GPSDP is illustrated in the Figure 1-1

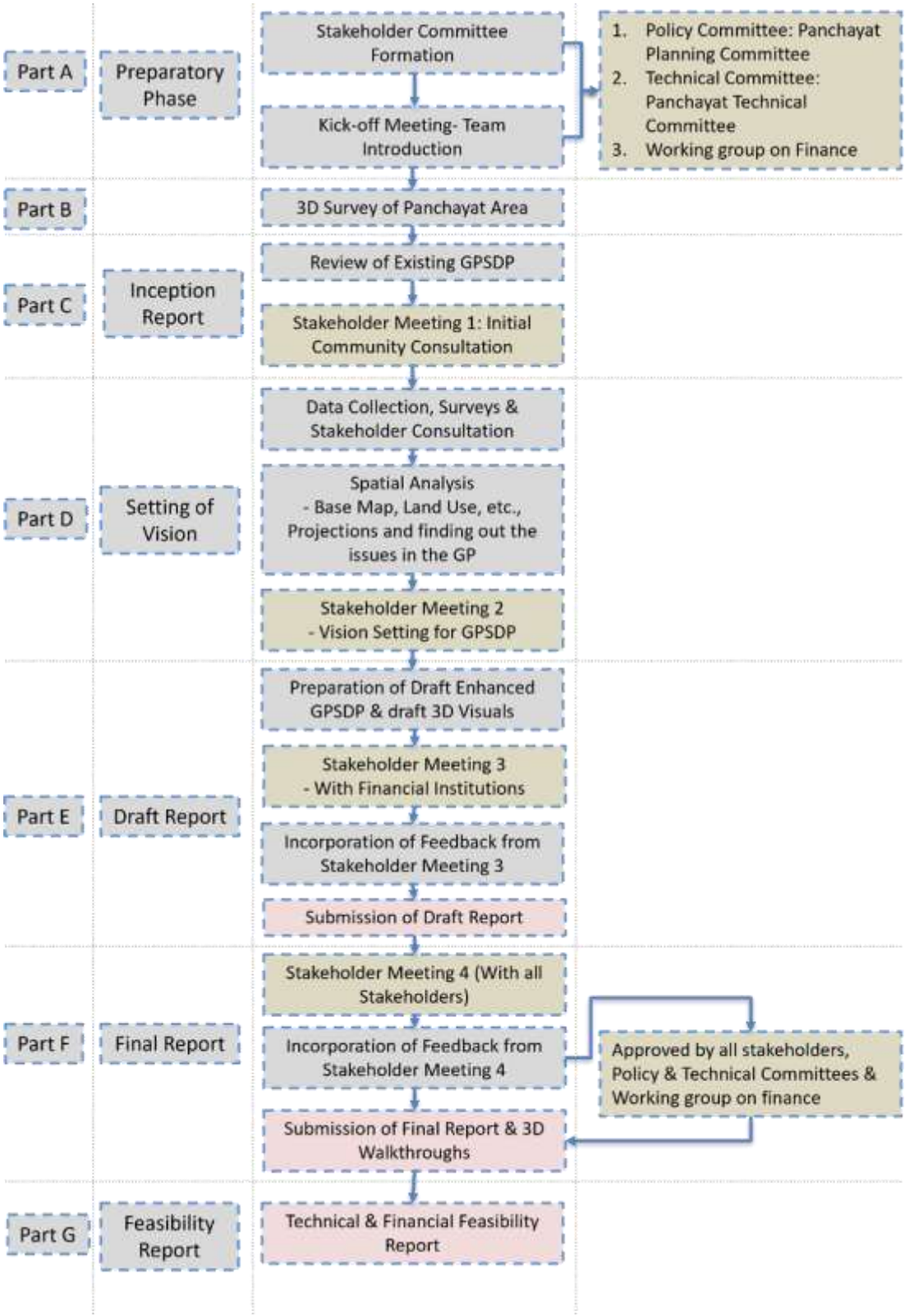

Figure 1-1 Methodology

1.5. Key processes undertaken for the enhancement of the GPSDP

1.5.1. Formulation & Details of the Policy Committee

- The Additional District Magistrate (Zilla parishad/ panchayat) - Chairperson
- The Additional District Magistrate (LR) - Member
- The District Panchayats & Rural Development Officer - Member-Convenor
- The District Engineer, WBSRDA - Member
- The District Planning Officer - Member
- The District Inspector of School - Member
- The District Programme Officer, ICDS - Member
- The DIO, NIC - Member
- District Nodal Officer, GPSDP
- The Block Development Officer - Member
- Representative of PHE Department
- Representatives of nearby ULBs - Member
- Representatives of WBSEDCL - Member
- Representative of District Forest Officer - Member
- Pradhan of concerned Gram Panchayat - Member
- Any other member as decided by the Committee

1.5.2. Formulation & Details of the Technical Committee

- The Block Development Officer - Chairperson
- The Block Land & Land Reforms Officer - Member
- The Joint Block Development Officer - Member
- The Block Nodal Officer, GPSDP - Member - Convenor
- The PDO/ PA&AO - Member
- One Jr. Engineer from Block - Member
- Nirman Sahayak of Gram Panchayat - Member
- Block level Official of PHE Department - Member
- An official of the Forest Department (For Paschim Medinipur & Jhargram only) - Member
- All Elected Representatives of Gram Panchayat - Member
- Any other member as decided by the Committee

1.5.3. Formulation & Details of the Working Group on Finance

Members at Block Level -

- The Block Development Officer - Chairperson
- The Block Medical Officer of Health - Member

- The Assistant Development Officer Agriculture - Member
- The Child Development Project Officer - Member
- The Block Nodal Officer, GPSDP - Member Convenor
- The Assistant Inspector of School - Member
- Auxiliary Nurse Midwife (ANM)/ 2nd ANM - Member
- Representatives of Educational Institutions - Member
- Representatives of parent-teacher Association - Member
- Representatives of Maha-sangha/Sangha (cluster or SHGs) - Member
- Representatives of NGO/ CBO - Member
- Representatives of SC/ST Communities - Member
- Any other member as decided by the Committee

1.5.4. Team Members of the Institution involved in the process

- Prof. V.K. Tiwari, Former Director & Former Professor, IIT Kharagpur
- Prof. T. N. Mazumdar, Head & Professor, Department of Architecture and Regional Planning
- Dr Shreyas P. Bharule, Assistant Professor, Department of Architecture and Regional Planning
- Dr Priyanka Dey, Assistant Professor, Department of Architecture and Regional Planning
- Mr. Akshay Bhalerao, Project Staff
- Mr. Ajinkya Pehekar, Project Staff
- Ms. Kehkasha Dumasia, Project Staff

1.5.5. List of Meetings held with the Committees

Meeting 1 - A meeting was held on 29.07.2024 on the operationalisation of the GPSDP process in FY 2024-25 Mrittika Bhaban, P&RD Department, Kolkata

Meeting 2 - A meeting was held on 04.09.2024 with ADM(LR), Jhargram, and Cadastral Maps were requested.

Meeting 3 - A VC meeting was held on 29.10.2024 on the progress of the GPSDP process in FY 2024-25

Meeting 4 - A meeting was held on 30.10.2024 with ADM(LR), Paschim Medinipur, and Cadastral Maps were requested.

Meeting 5 - A meeting was held on 23.12.2024 with the stakeholders of the Makrampur Gram Panchayat, Paschim Medinipur

Meeting 6 - A meeting was held on 24.12.2024 with the stakeholders of the Aguibani Gram Panchayat, Jhargram

Meeting 7 - A meeting was held on 05.03.2025 on the review of the Progress of the GPSDP process in FY 2024-25, Mrittika Bhaban, P&RD Department, Kolkata

Meeting 8 - A meeting was held on 11.03.2025 on the review of the Progress of the GPSDP at the Office of District Magistrate & Collector, Paschim Medinipur, Midnapore

Sr. No.	Date	Meeting Detail	Venue
1	29.07.2024	Operationalisation of the GPSDP process & Committee Formation	Mrittika Bhaban, P&RD Department, Kolkata
2	04.09.2024	Meeting with ADM(LR), Jhargram, requesting Cadastral Maps	Office of ADM(LR), Jhargram
3	29.10.2024	VC Meeting on the progress of the GPSDP process (FY 2024-25)	Video Conference
4	30.10.2024	Meeting with ADM(LR), Paschim Medinipur, requesting Cadastral Maps	Office of ADM(LR), Paschim Medinipur
5	23.12.2024	Meeting with stakeholders of Makrampur Gram Panchayat	Makrampur Gram Panchayat, Paschim Medinipur
6	24.12.2024	Meeting with stakeholders of Aguibani Gram Panchayat	Aguibani Gram Panchayat, Jhargram
7	05.03.2025	Review of Progress of GPSDP process (FY 2024-25)	Mrittika Bhaban, P&RD Department, Kolkata
8	11.03.2025	Review of Progress of the GPSDP process	Office of District Magistrate & Collector, Paschim Medinipur, Midnapore

1.5.6. List of Discussions held with the Stakeholders

The list of discussions held with the Policy & Technical Committee and the working group on finance is as shown in

Table 1-1,

Table 1-2 &Table 1-3.

Table 1-1 Policy Committee Details

Gram Panchayat Spatial Development Plan (GPSDP) for Aguibani GP			
Policy Committee Details			
Sr. No.	**Department**	**Date**	**Signature**
1	Mrittika Bhaban, P&RD Department, Kolkata	29.07.2024	
4	Video Conference	29.10.2024	
2	Mrittika Bhaban, P&RD Department, Kolkata	05.03.2025	
3	Office of District Magistrate & Collector, Paschim Medinipur, Midnapore	11.03.2025	

Table 1-2 Technical Committee Details

Gram Panchayat Spatial Development Plan (GPSDP) for Aguibani GP			
Technical Committee Details			
Sr. No.	**Department**	**Date**	**Signature**
1	Office of ADM(LR), Jhargram	04.09.2024	
2	Office of ADM(LR), Paschim Medinipur	30.10.2024	

Table 1-3 The Working Group on Finance details

Gram Panchayat Spatial Development Plan (GPSDP) for Aguibani GP			
The Working Group on Finance			
Sr. No.	Department	Date	Signature
1	Mokarampur Gram Panchayat, Jhargram	23.12.2024	

1.5.7. Details of Surveys conducted and data collected

To ensure grounded planning and evidence-based interventions for Makrampur GP, a series of surveys were systematically undertaken, adhering to the Enhanced GPSDP guidelines issued by the Ministry of Panchayati Raj. These surveys provided quantitative and qualitative data essential for spatial mapping, infrastructure evaluation, service assessment, and socio-economic profiling.

1. Household Survey

The household survey was conducted using the GPSDP digital survey application, officially recommended by the Ministry of Panchayati Raj.

A sample size of 450 households was derived based on the total population of 24,092 (JJM Dashboard, April 2024), ensuring adequate representation across settlements within the GP's jurisdiction.

The survey covered detailed indicators, including:

- Housing typology and age distribution
- Access to water, sanitation, and energy
- Livelihood patterns and monthly household expenditure
- Ownership, toilet availability, transportation modes, and digital literacy

The results formed the backbone of demand-gap analysis for infrastructure, housing, sanitation, and service delivery modules in the GPSDP proposals.

2. Site and Services Survey

A reconnaissance survey was carried out by the planning team to map physical infrastructure, community assets, and public services.

Field visits included:

- Observation of roads, drainage systems, school buildings, water bodies, and open spaces.
- Review of critical sites flagged by the Gram Pradhan and GP Committee, such as submergence zones near the Keleghai River, degraded pond edges, and disconnected settlements like Dhangari.
- Verification of environmental hazards, infrastructure vulnerabilities, and areas requiring immediate upgrades.

This survey enabled geo-tagging of priority sites, the calibration of proposed modules, and the identification of land for potential development, beautification, and disaster preparedness.

2. Introduction to the Gram Panchayat

Makrampur Gram Panchayat is located in the Paschim Medinipur district of West Bengal, India. As a part of the Panchayati Raj system, it serves as the lowest tier of decentralized governance, empowering rural communities through local self-governance. Makrampur Gram Panchayat functions as a Rural Local Body under the Narayangarh Block, which operates within the jurisdiction of the Paschim Medinipur Zila Parishad. It has administrative control over several villages and is situated close

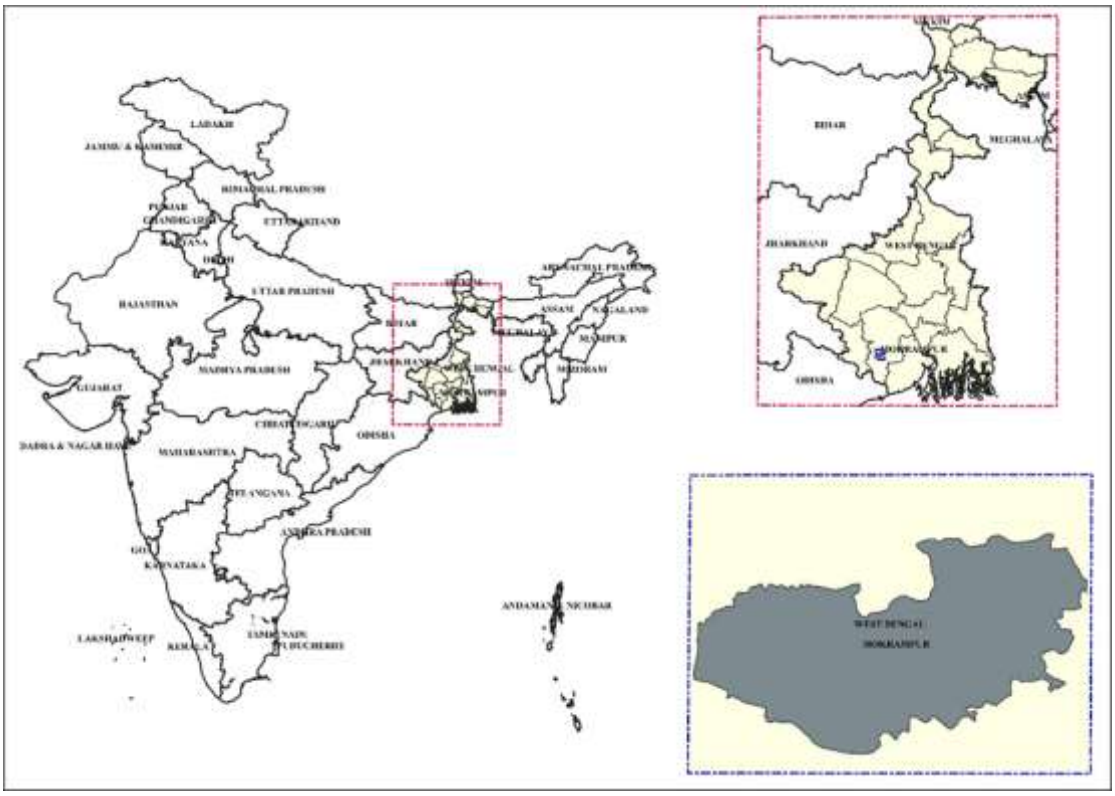

Figure 2-1 Location of Mokarampur

proximity to National Highway 16 (NH16), enhancing its connectivity and facilitating regional economic activities.

2.1. Evolution and Growth of the GP

The development trajectory of Makrampur GP, located in Narayangarh Block, Paschim Medinipur District, West Bengal, reflects a blend of historical legacy, administrative restructuring, and socio-economic transformation driven by agricultural and connectivity-related advantages.

Historical Significance and Cultural Legacy

Oral accounts recorded during stakeholder consultations and field surveys suggest that Makrampur GP was witness to a bombing incident during the British era, possibly

linked to anti-colonial unrest. Though not yet formally archived, this anecdote remains embedded in the collective memory of elder residents and contributes to the Panchayat's historical identity.

The Belti Old Queen Palace, located near the Keleghai River and Belti Keleghai Bridge, is an architectural relic that represents feudal heritage in the region. Surrounded by ponds, agricultural lands, and forest patches, this site presents future potential for heritage conservation and tourism development.

Administrative and Governance Evolution

Makrampur was originally part of the undivided Midnapore District, which was bifurcated into Paschim Medinipur and Purba Medinipur on January 1, 2002. This administrative shift redefined district-level governance and enhanced decentralization efforts.

The Gram Panchayat operates under the three-tier Panchayati Raj system, as per the 73rd Constitutional Amendment Act (1992), with oversight from:

- Zila Parishad (District Level)
- Panchayat Samiti (Block Level)
- Gram Sabha & Gram Pradhan (Village Level)

Economic and Spatial Growth Drivers

The evolution of Makrampur GP is closely tied to its fertile agricultural land, abundant water sources (Kangsabati and Keleghai rivers), and regional biodiversity. Forest-based livelihoods, livestock rearing, and paddy cultivation shaped the rural economy over the decades.

Connectivity milestones, such as the development of NH16 and proximity to Kharagpur Railway Junction, transformed the GP into an economically active region by facilitating access to urban markets, labor migration, and industrial hubs.

2.2. Regional settings, connectivity, and their influence on GP

Makrampur Gram Panchayat has strong regional connectivity through road, rail, and air networks. **NH16 (Golden Quadrilateral)** provides direct access to major urban centers like Kolkata, Kharagpur, and Bhubaneswar, complemented by state and district roads linking nearby rural areas. **Kharagpur Junction**, a key railway hub under the South Eastern Railway network, ensures long-distance and local train access to major cities. For air travel, **Netaji Subhas Chandra Bose International Airport (Kolkata)** and **Biju Patnaik International Airport (Bhubaneswar)** serve the region,

with NH16 providing connectivity. Additionally, **Haldia Port** enhances trade and industrial transport access for the district.

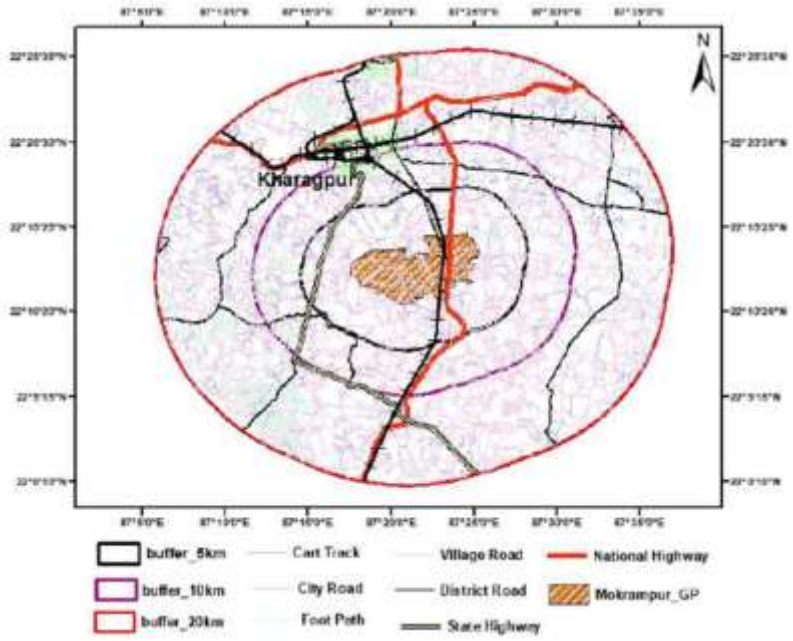

Figure 2-2 Regional connectivity of GP

2.2.1. Connectivity of Major Transportation

2.2.1.1. Road

Makrampur Gram Panchayat in Paschim Medinipur district is well connected to nearby towns and cities through a network of roads and railways. National Highway 16 (NH16), a part of the Golden Quadrilateral, passes close to the region, linking it with major urban centers such as Kolkata, Kharagpur, and Bhubaneswar. Additionally, several state highways and district roads ensure smooth connectivity to neighbouring rural and semi-urban areas.

2.2.1.2. Railways

The rail connectivity in the region is facilitated by the South Eastern Railway network. The nearest major railway station is Kharagpur Junction, one of the busiest railway stations in India, which provides access to long-distance trains connecting Makrampur to cities like Kolkata, Bhubaneswar, Chennai, and Mumbai. Several local and passenger trains also pass through nearby stations, making commuting daily for residents.

2.2.1.3. Airport

The nearest airports are Netaji Subhas Chandra Bose International Airport in Kolkata and Biju Patnaik International Airport in Bhubaneswar. Both airports are accessible via NH16, ensuring regional and international connectivity.

2.2.1.4. Ports/Water ways

The Paschim Medinipur district benefits from its proximity to Haldia Port, an important gateway for trade and industrial transport, which is well-connected by road and rail networks.

2.2.2. Influence of regional connectivity and development on the GP

Makrampur Gram Panchayat, situated in the Narayangarh block of Paschim Medinipur district, West Bengal, encompasses 42 villages and is governed by 14 elected members. The region is characterized by fertile agricultural land and forested areas that support diverse flora and fauna. The Kangsabati River and smaller water bodies play a vital role in sustaining local biodiversity and providing water for irrigation and daily needs. Many rural households depend on agriculture, animal husbandry, and forest-based livelihoods, making environmental conservation a key aspect of development. Efforts are being made to promote sustainable agricultural practices, afforestation programs, and watershed management to ensure ecological balance while supporting local livelihoods. Conservation initiatives also aim to address land degradation and improve soil fertility, ensuring long-term agricultural productivity.

The region benefits from its proximity to key industrial establishments such as Bengal Energy Limited, a leading producer of metallurgical coke. These industries provide direct and indirect employment opportunities for the local population, fostering economic development. Makrampur is well-connected by road, with National Highway 16 (NH16) facilitating access to major urban centers like Kolkata and Kharagpur, while the South Eastern Railway network strengthens trade and accessibility. The West Bengal government has been implementing various development projects focusing on rural electrification, education, healthcare, and employment generation to enhance the quality of life. With the expansion of agro-based industries, small-scale enterprises, and industrial investments, the local economy is diversifying, creating new job opportunities and improving livelihoods. Investments in infrastructure and public services are helping to bridge the rural-urban divide while ensuring sustainable regional growth. As a result, Makrampur Gram Panchayat is poised for balanced

progress, where economic development aligns with environmental conservation to improve the well-being of its residents.

2.2.3. Rural-Urban Linkages and dependencies

Makrampur village acts the centerplace for the Makrampur Gram Panchayat. Besides, the proximity to towns like Belda and Kharagpur serve as a market place for the produce at the villages under the gram panchayat and as centers for emergencies-medical support and regional transport.

2.2.4. Spatial Growth of the Gram Panchayat

The spatial transformation of Makrampur Gram Panchayat between 2010 and 2020 illustrates a gradual but significant change in land use patterns, settlement expansion, and infrastructure intensification. The evolving growth dynamics are largely influenced by the Panchayat's proximity to National Highway 16 (NH-16), a strategic transport corridor facilitating economic and physical connectivity.

Figure 2-3 Makrampur Satellite Imagery 2010

(Source: Google Earth Satellite image)

Figure 2-4 Makrampur Satellite Imagery 2015

(Source: Google Earth Satellite image)

Figure 2-5 Makrampur Satellite Imagery 2020

(Source: Google Earth Satellite image)

Spatial development trends, observed through satellite imagery of 2010, 2015 and 2020 are as following:

- **Settlement Expansion:**

  In 2010, settlement areas within the GP were compact and primarily concentrated along the eastern side of NH-16. By 2015, the Panchayat witnessed lateral expansion of residential clusters toward both the eastern and western flanks of the highway. This trend continued into 2020, with formerly agricultural patches being

converted into residential blocks. Infill development between existing clusters increased, resulting in a more dispersed yet contiguous settlement pattern.

- **Increase in Built-Up Footprint:**
  The built-up footprint along NH-16 became notably denser by 2020. The earlier fragmented and nodal clusters seen in 2010 evolved into a linear, ribbon-like development aligned with the highway corridor. This indicates a transition toward peri-urbanization, with transport infrastructure playing a catalytic role in spatial restructuring and land market activity.
- **Agricultural Land Fragmentation:**
  The satellite imagery reveals a marked fragmentation of agricultural lands, particularly in the southern and central zones of the GP. Previously continuous fields now contain fragmented plots due to encroachments for residential, commercial, and institutional purposes. Notable transformations have occurred around pond clusters and road intersections, where agricultural land has been converted into mixed-use plots.
- **Infrastructure Development:**
  Between 2015 and 2020, the GP saw an increase in surface hardscapes including new buildings, paved roads, and institutional structures. The emergence of blue-roofed buildings in the southern quadrant, observed in the 2020 imagery, suggests the development of facilities related to warehousing, agro-processing, or light industry. These areas have become focal points of non-residential land use change.
- **Land Use Intensification:**
  The GP's growth is not limited to horizontal sprawl; there has been significant densification within existing settlement boundaries. Plot sizes have reduced, and open spaces between residential units have declined, especially in the core zone near administrative and service centres. This pattern reflects the pressure of population growth and economic activity on limited land resources.
- **Environmental Observations:**
  Despite the spatial expansion, the GP's natural assets such as ponds and tree cover have remained relatively stable. However, edge encroachments near water bodies—particularly in high-density settlements—raise concerns about ecological degradation. Management of these assets is crucial for long-term environmental sustainability.

The spatial growth of Makrampur Gram Panchayat from 2010 to 2020 demonstrates a clear shift toward linear and nodal expansion centered around NH-16. The Panchayat

is undergoing a transition from a rural land-use profile to one characterized by mixed development. While the increased connectivity and infrastructure investment support growth, the rising pressure on agricultural and ecologically sensitive lands demands a more structured planning approach.

2.2.5. Administrative Framework of the Gram Panchayat

The governance structure of Makrampur Gram Panchayat in Narayangarh Block, Paschim Medinipur District, West Bengal, follows the three-tier Panchayati Raj system as per the 73rd Constitutional Amendment Act (CAA), 1992. The institutional framework consists of the State-Level Setup, District Panchayat (Zilla Parishad), Block-Level Panchayat (Panchayat Samiti), and Village-Level Panchayat (Gram Panchayat). Each tier has specific responsibilities in planning, resource allocation, and rural development to ensure effective decentralized governance.

State-Level Setup

At the state level, the Panchayats and Rural Development Department (PRDD), the Government of West Bengal, is responsible for rural governance and development policies. It regulates Panchayati Raj Institutions (PRIs) and ensures effective implementation of state and central schemes.

Key Institutions:

- State Election Commission (SEC): Conducts Panchayat elections.
- State Finance Commission (SFC): Allocates financial resources to PRIs.
- West Bengal Panchayati Raj and Rural Development Department: Provides guidelines for the functioning of PRIs.

The State Development Commissioner supervises the administration of district-level panchayats and monitors financial allocations, rural infrastructure projects, and social welfare schemes.

District Panchayat

The Paschim Medinipur Zilla Parishad is the highest authority in the district's three-tier Panchayati Raj system. It is responsible for coordinating and supervising the functioning of Panchayat Samitis and Gram Panchayats, including Makrampur.

Functions:

- Preparing district-wide development plans.
- Allocating funds and resources to Panchayat Samitis.
- Supervising major rural infrastructure projects such as roads, irrigation, electrification, and sanitation.
- Monitoring centrally and state-sponsored schemes like MGNREGA, PMAY-G, NRLM, and Swachh Bharat Mission.

Committees within Zilla Parishad:

- Executive Committee: Oversees financial management and administration.
- Social Justice Committee: Ensures welfare schemes for Scheduled Castes, Scheduled Tribes, and other disadvantaged groups.
- Education Committee: Handles primary and secondary education, literacy programs, and cultural activities.
- Public Health Committee: Manages healthcare services, sanitation, drinking water supply, and family welfare programs.
- Public Works Committee: Oversees infrastructure projects like roads, bridges, and rural housing.
- Women & Child Development Committee: Implements programs for the welfare of women and children.

Composition:

- Elected Representatives: Members from Panchayat Samitis.
- Ex-Officio Members: MLAs and MPs from the district.
- Officials: District Magistrate (DM) and District Development Officer (DDO).

Block-Level Panchayat

Makrampur Gram Panchayat falls under the jurisdiction of the Narayangarh Panchayat Samiti, which acts as an intermediary between the district and village levels.

Functions:

- Planning and Implementing Rural Development Projects: Includes healthcare, primary education, drinking water, electrification, and social welfare.

- Coordinating with Line Departments: Works with agriculture, irrigation, rural housing, and employment departments.
- Supervising the Work of Gram Panchayats: Ensures the effective functioning of all Gram Panchayats under its jurisdiction.

Composition:

- Elected Members: Representatives from Gram Panchayats.
- Ex-Officio Members: MLAs and MPs of the region.
- Officials: Block Development Officer (BDO) as the executive head.

2.2.5.1. Roles & Responsibilities of the Gram Panchayat

Makrampur Gram Panchayat is the lowest tier of the Panchayati Raj system. It is responsible for local governance, rural infrastructure, and service delivery. The Gram Sabha (village assembly) is a crucial body where villagers participate in decision-making and development planning.

Functions of Makrampur Gram Panchayat:

- Rural Infrastructure Development: Maintenance of roads, water supply, street lighting, sanitation, and waste management.
- Public Welfare Services: Implementation of MGNREGA, health schemes, education programs, and social security schemes.
- Land and Resource Management: Promotes sustainable agriculture, conservation, and land use planning.
- Disaster Management: Plans for flood control, drought relief, and other emergency responses.

Special Committees:

- Social Justice Committee: Ensures welfare for Scheduled Castes, Scheduled Tribes, and backward classes.
- Education Committee: Supervises primary education, literacy programs, and cultural activities.
- Health and Sanitation Committee: Oversees health centers, vaccination programs, and sanitation.
- Public Works Committee: Manages infrastructure projects, including rural roads and housing.
- Women & Child Development Committee: Implements schemes for women's empowerment, child welfare, and nutrition.

Budget and Financial Planning:

- Receives funding from the State and Central Finance Commissions, MGNREGA, Swachh Bharat Mission, PMAY-G, and other government schemes.
- Generates revenue through property tax, user fees, and local resources.
- Prepares an annual budget in consultation with Gram Sabha, ensuring transparency and inclusivity.

2.3. Administrative boundaries

Administrative boundaries for Makrampur Gram Panchayat were developed in the following steps:

Village boundaries of the GP comprising villages were obtained from Survey of India

Shapefiles of 43 villages boundaries were assembled in the QGIS software

2.4. Defining and delineating the Study Area- Gram Panchayat

Land Revenue/Cadastal (LR) Maps collected from ADM LR, Paschim Medinipur's office. The GP Boundary assembled from the LR maps was inadequate, as some of the LR maps were not available/confidential. In such cases, the Census of India and the Survey of India Maps were used to compensate for the absent village boundaries. The realized village boundary was cross-verified and validated in the field with the GP officials.

The study area for the realization of the GP plan was developed based on the SWAMITVA Drone Survey Map. Since the map received from the SWAMITVA drone survey was conducted only over the Makrampur Abadi Area. The same has been chosen for the Spatial Study. However, Surveys, Data Collection, Mapping, and Spatial Analysis have been conducted for the whole GP.

2.5. Gram Panchayat Part of the Development Authority

The Makrampur Gram Panchayat is not a part of any development authority.

2.6. Base Map

No base map was available for the Makrampur GP. Boundaries for the villages were constructed after rasterization of Land Revenue/Cadastal (LR) Maps collected from ADM LR, Paschim Medinipur's office. The GP Boundary assembled from the LR maps was inadequate, as some of the LR maps were not available/confidential. In such cases, the Census of India and the Survey of India Maps were used to compensate for the absent village boundaries.

2.6.1. Data used to prepare the Base Map of the Gram Panchayat (Mention of SVAMITVA Scheme Maps, if used)

LR/Cadastal/Mouza maps were digitized on a QGIS platform, along with the Census of India and the Survey of India Maps, which were used to develop the village boundaries and GP boundary. The map received from the SWAMITVA drone survey covering Netura Abadi Area has been used to develop the proposals as well as showcase the application of RADPFI Guidelines in the GP area.

2.6.2. Limitations, constraints and considerations during the preparation of the Base Maps

Access to some remote locations, such as the forested areas, was not entered during the survey and treated as a reserved area in the Existing Spatial Plan.

2.6.3. Final Base Map of the Gram Panchayat

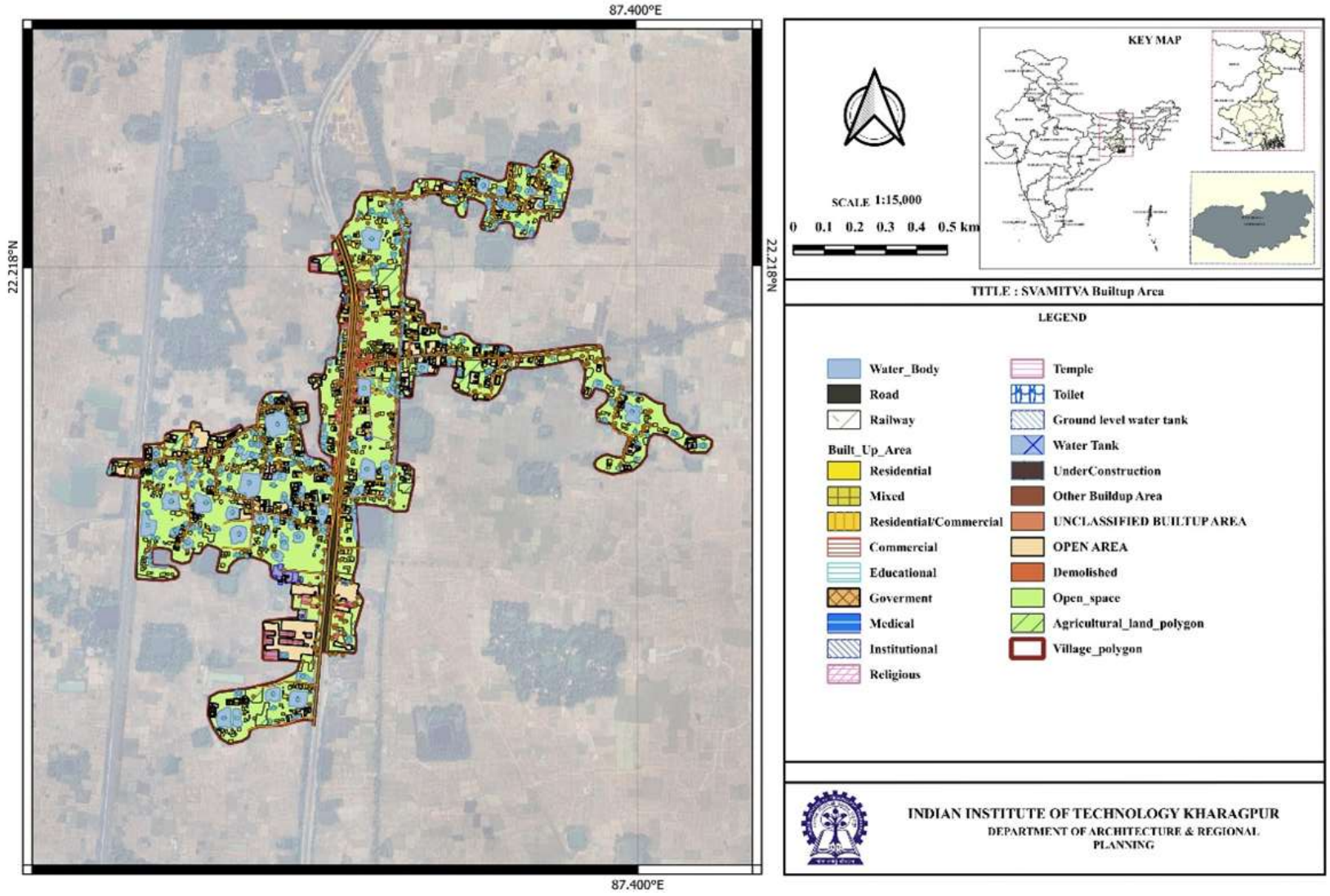

Figure 2-6 SWAMITVA Built-up area

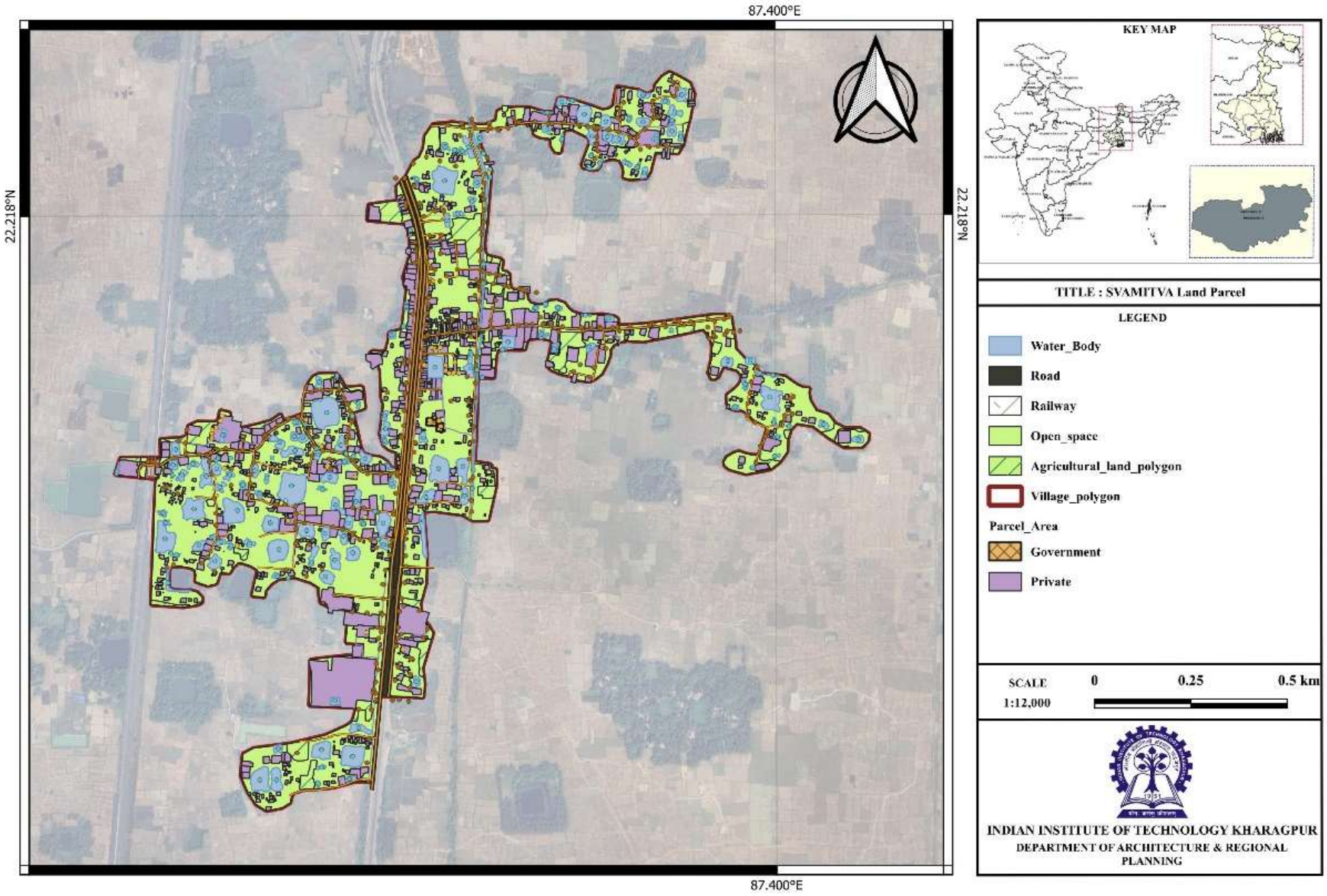

Figure 2-7 SWAMITVA Land parcel

2.7. Spatial Analysis of the GP

2.7.1. Topography Analysis

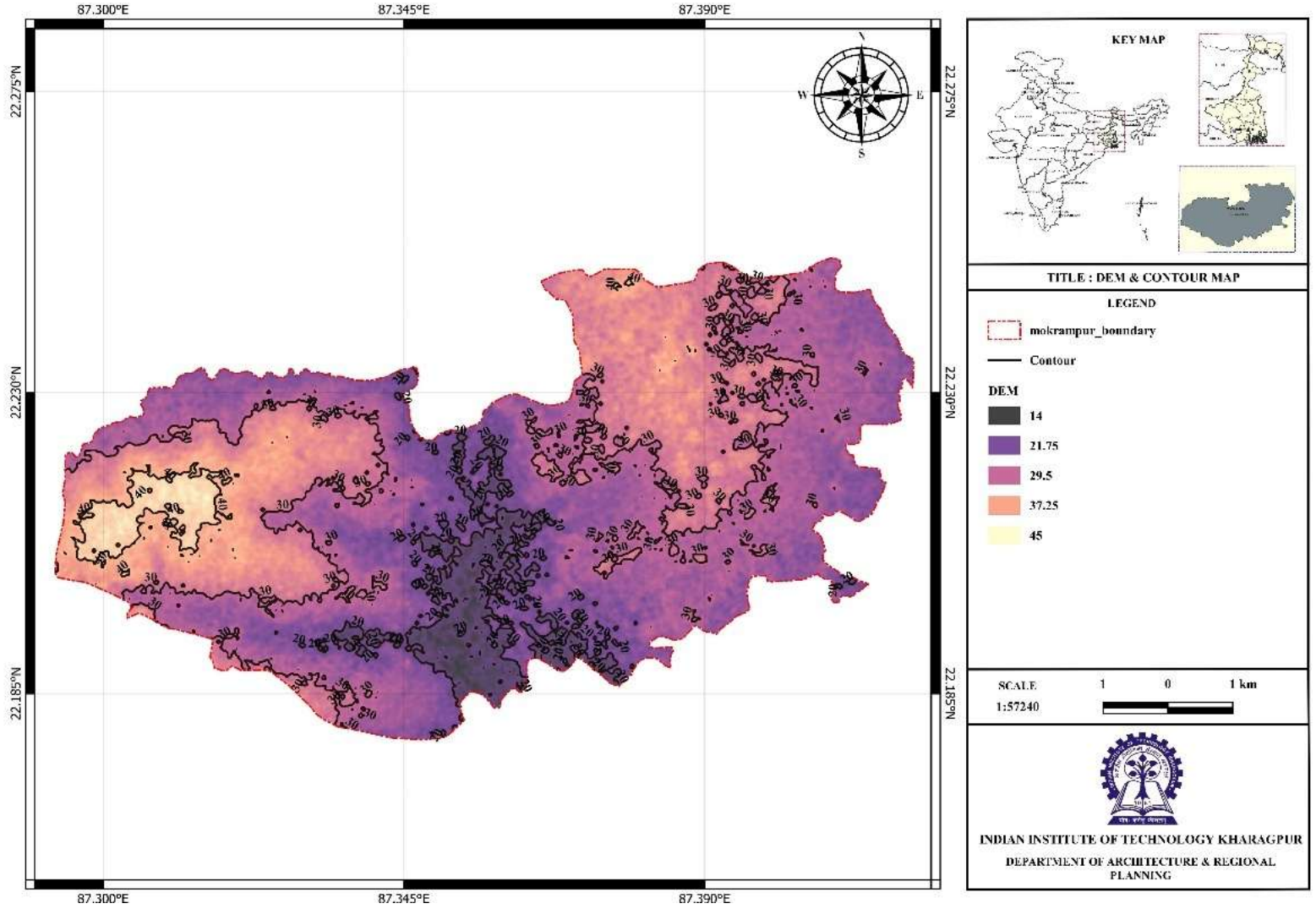

Figure 2-8 Topography Map

2.7.2. Slope Analysis

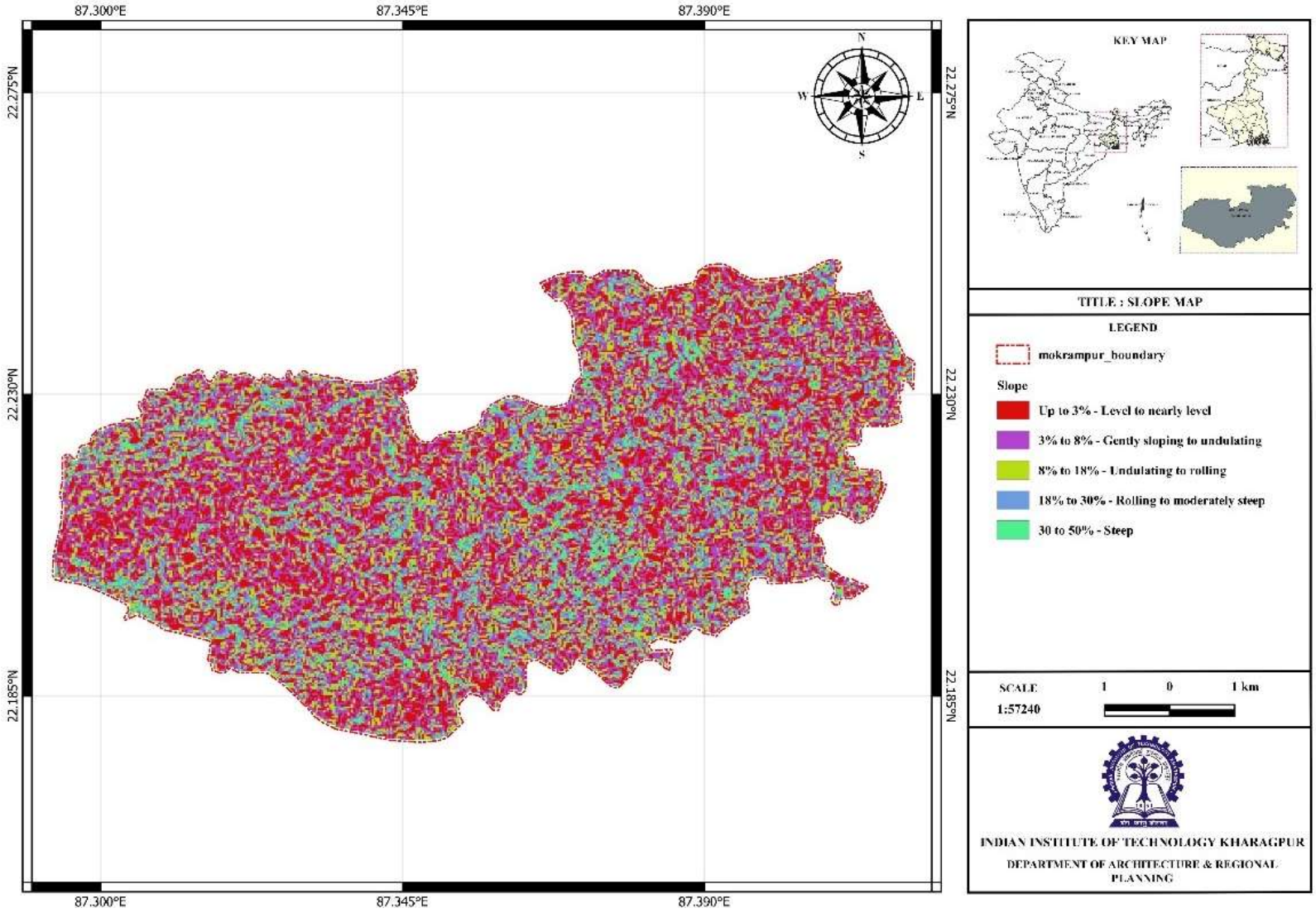

Figure 2-9 Slope Map

2.7.3. Watershed Analysis

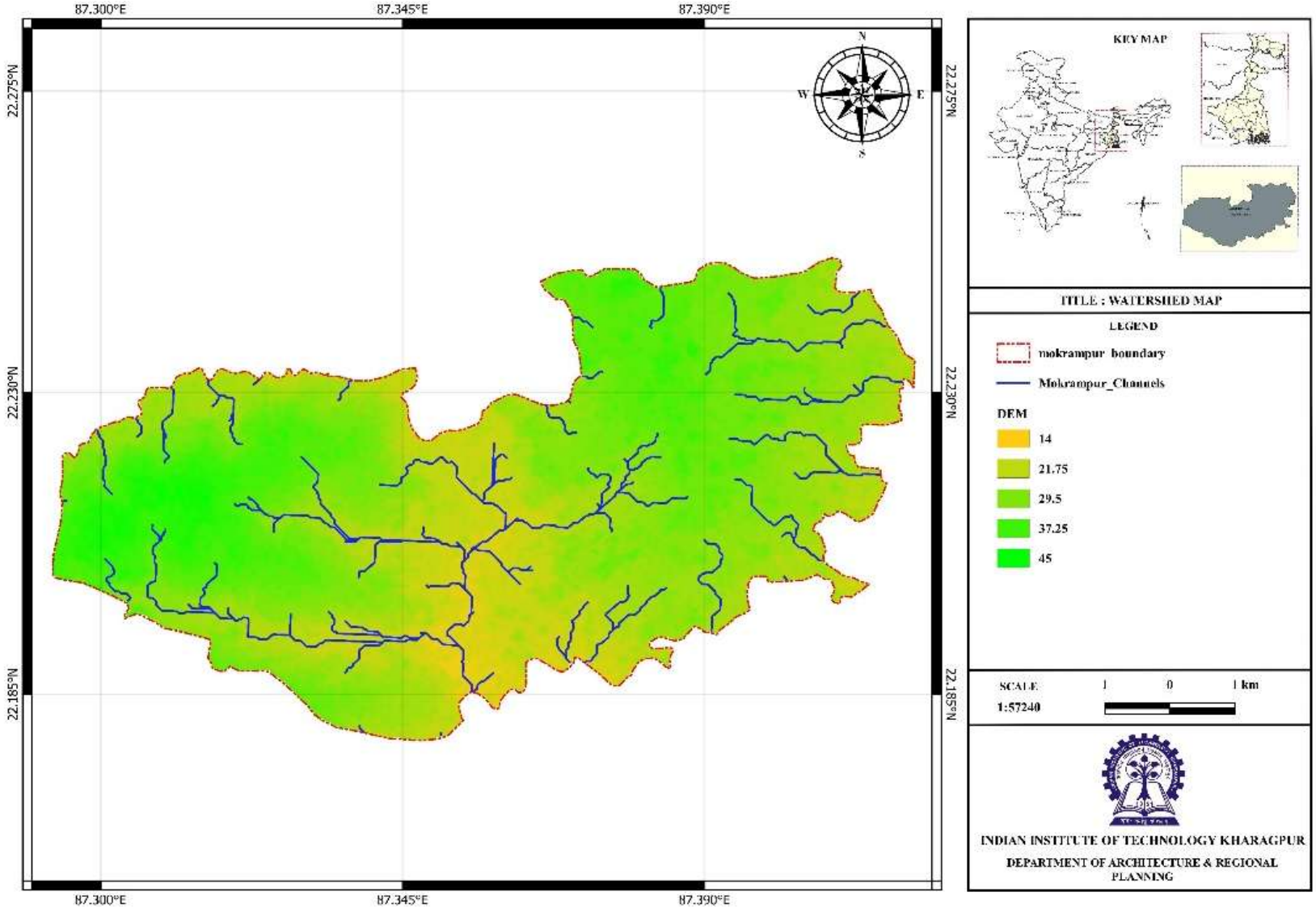

Figure 2-10 Watershed Map

2.7.4. Drainage Analysis

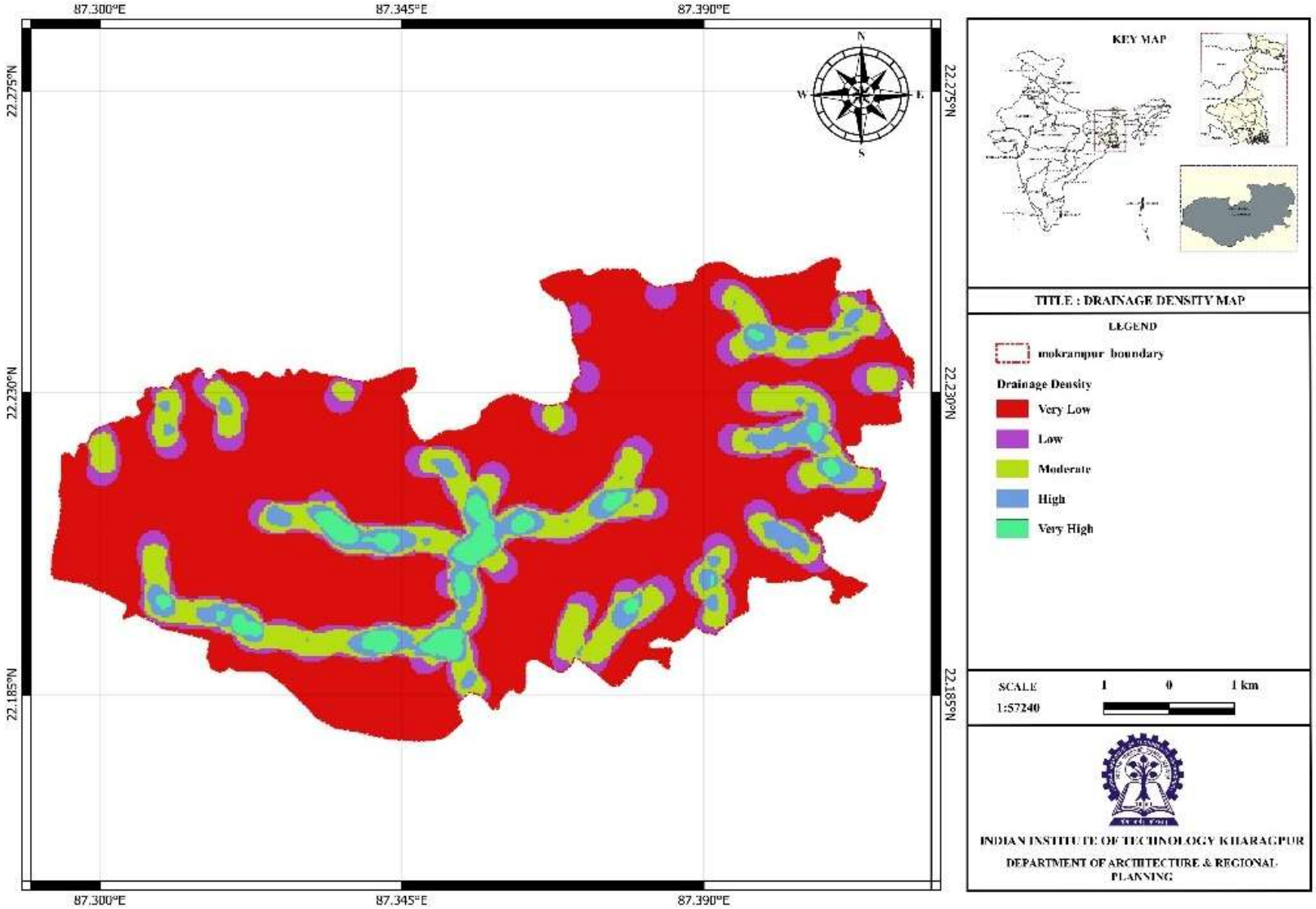

Figure 2-11 Drainage Map

2.7.5. Hydrology Analysis

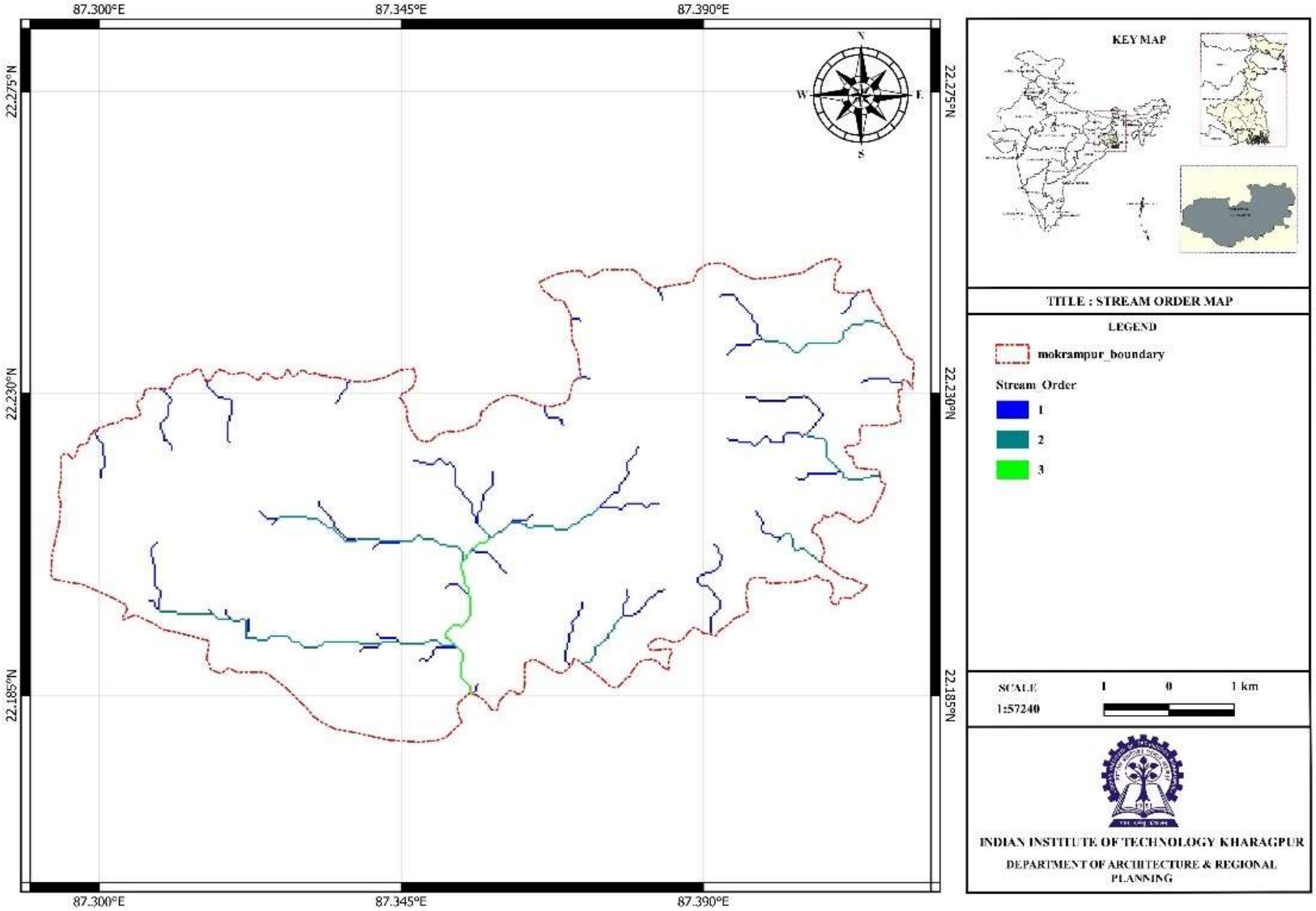

Figure 2-12 Stream Order Map

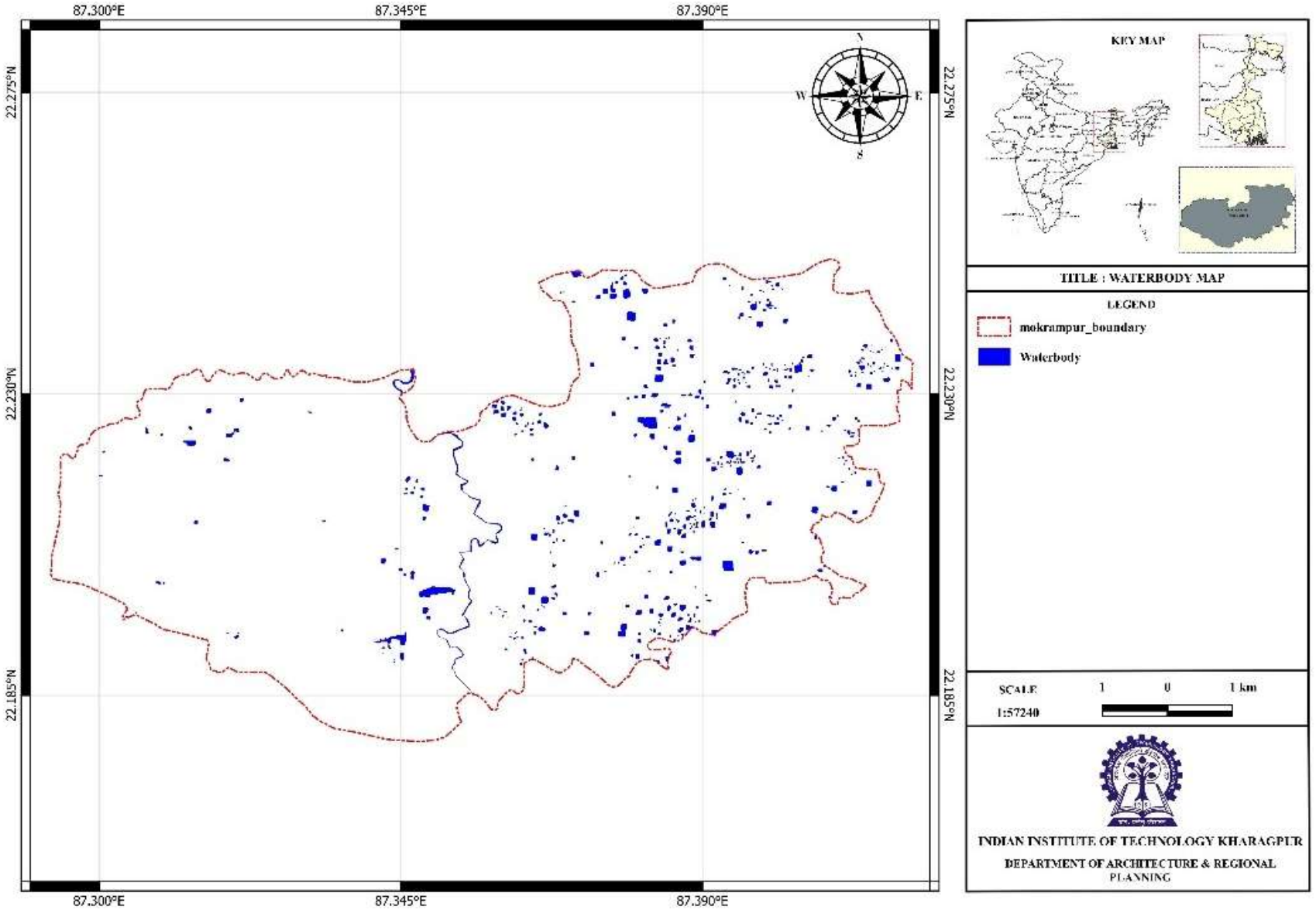

Figure 2-13 Waterbody Map

2.7.6. Soil Typology Analysis

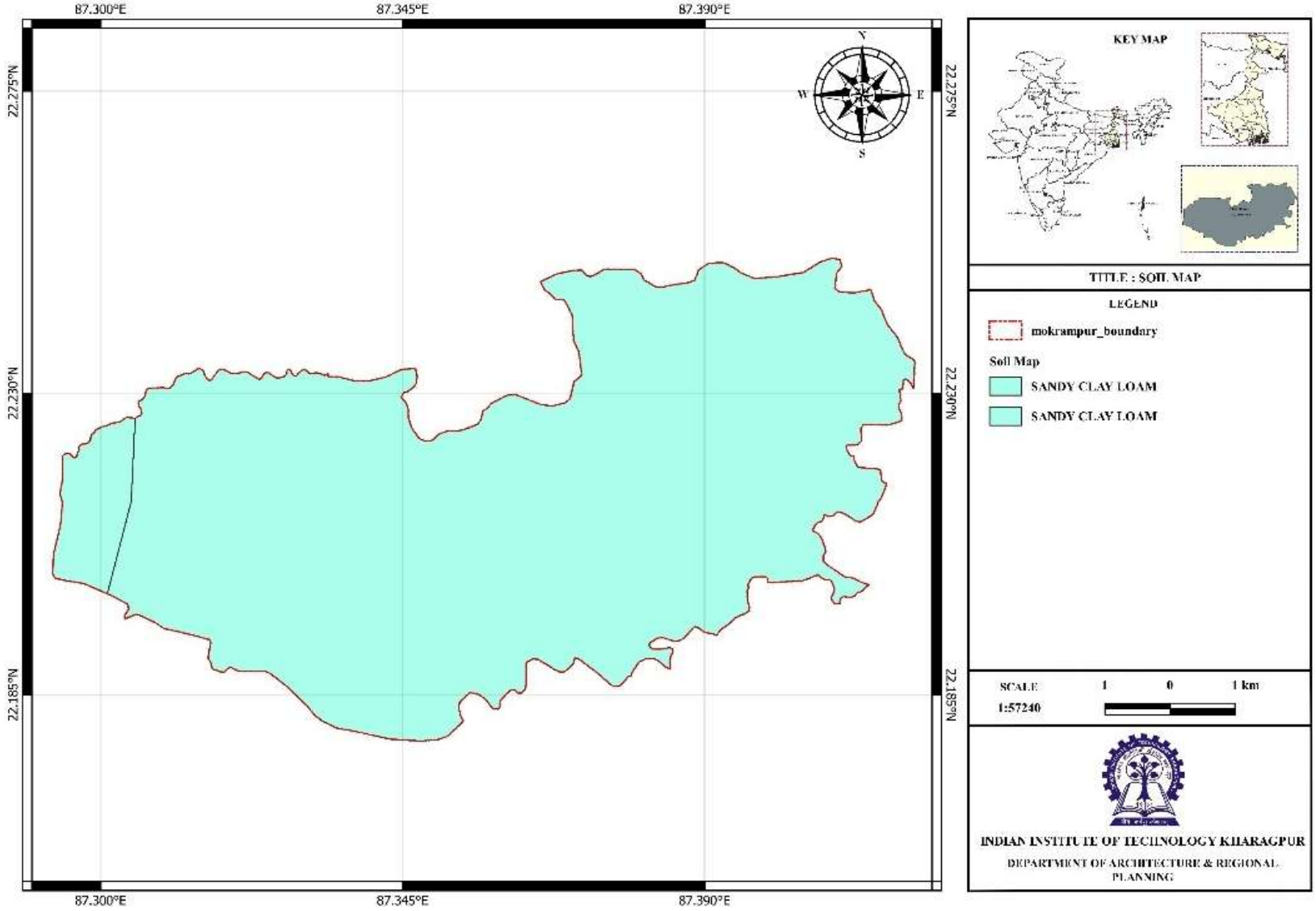

Figure 2-14 Soil Map

2.7.7. Land Ownership Analysis

Not Available with the GP

2.7.8. Transportation Analysis- Existing Road Network

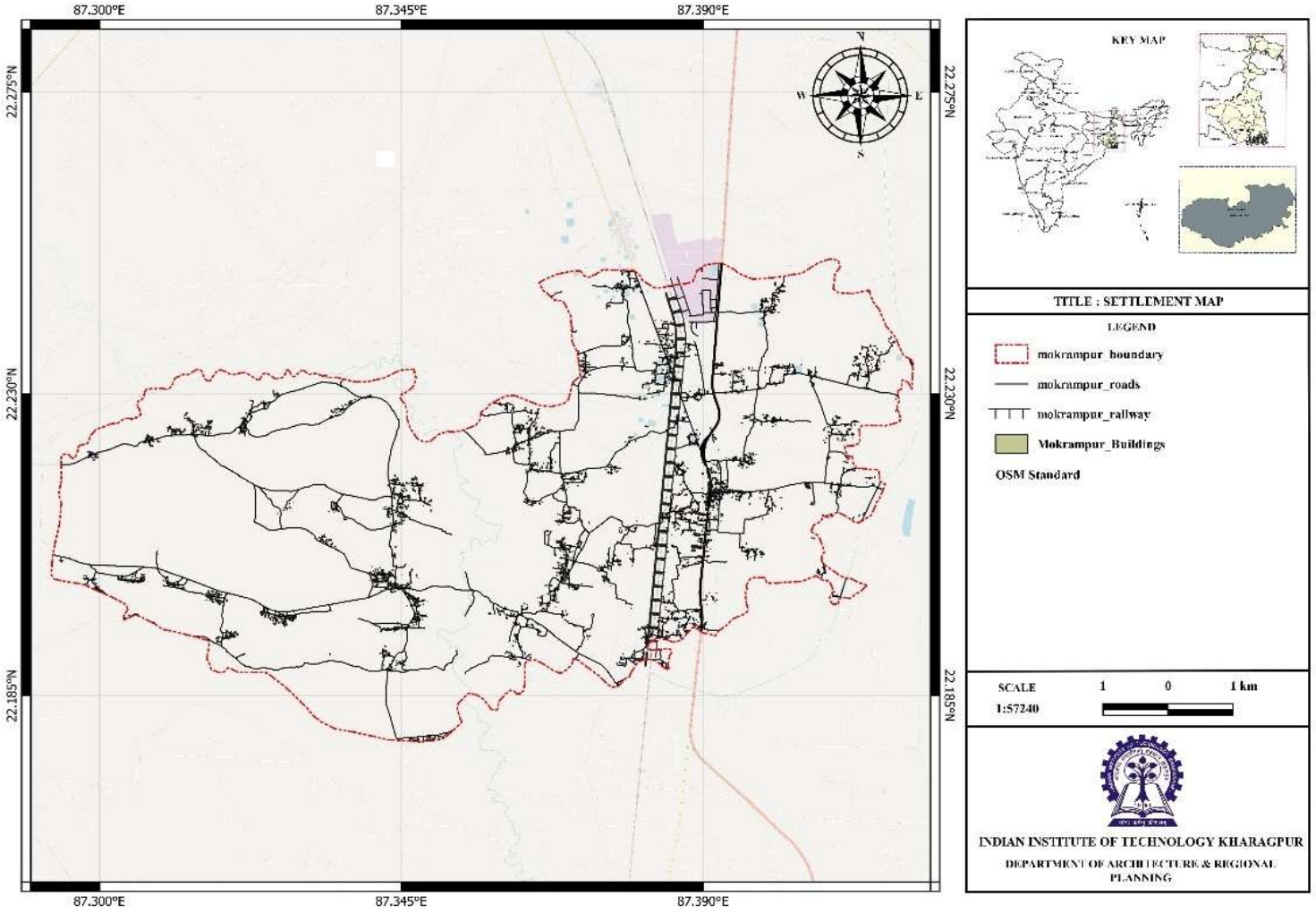

Figure 2-15 Settlement Map

2.7.9. Existing Land Cover Analysis

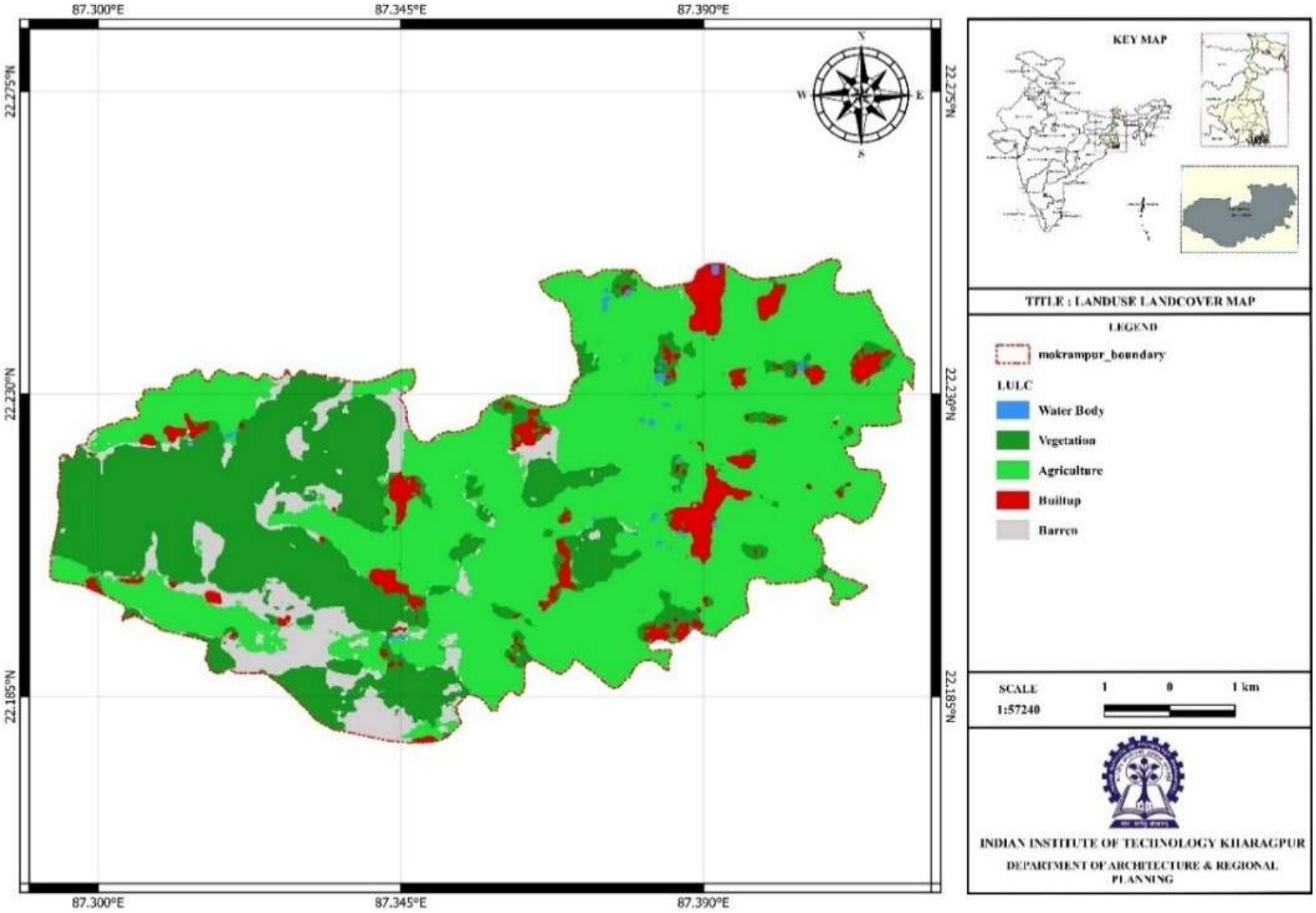

Figure 2-16 LULC 2023 Map of Makrampur GP

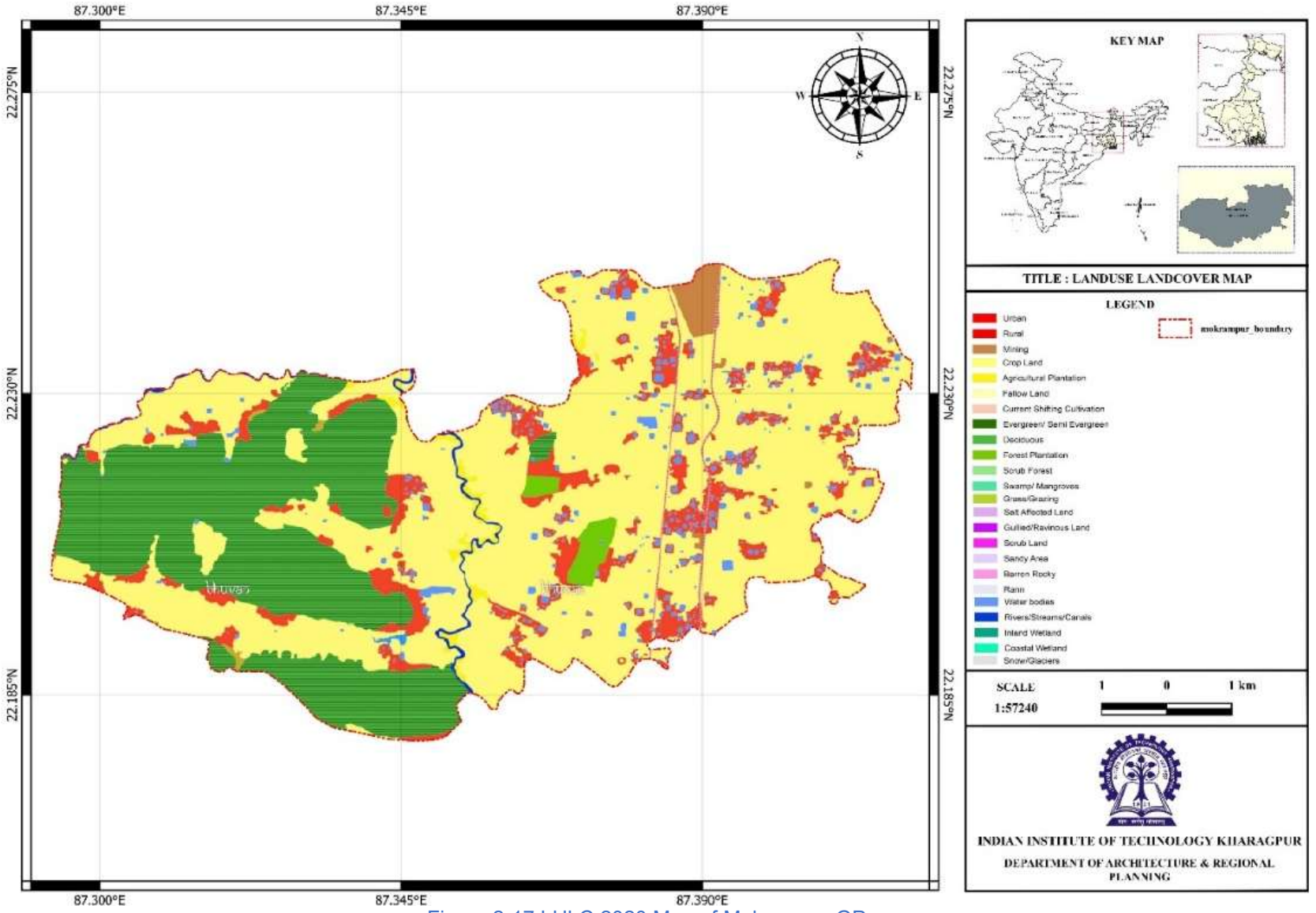

Figure 2-17 LULC 2020 Map of Makrampur GP
(Source: Bhuvan)

2.7.10. Existing Land-Use Analysis

The current land use profile of Makrampur Gram Panchayat reveals a predominantly agrarian spatial structure with key infrastructure and public amenities embedded within rural settlement clusters.

Land Use Composition

- Agricultural land dominates the Panchayat's spatial layout, though it's increasingly fragmented by residential and mixed development.
- Built-up areas (Abadi) are concentrated along NH-16 and internal access roads.
- Water bodies, including ponds and canals, form crucial ecological buffers.

2.7.11. Any Other Spatial Analysis

Additional GIS-based spatial assessments include:

- **Flood-Prone Zones:** Low-lying settlements near the Keleghai River and unprotected pond edges are vulnerable to seasonal flooding and waterlogging.
- **Drainage Network Mapping:** Natural and constructed channels have been identified, but many are disconnected or unlined, increasing runoff hazards.
- **Land Ownership Patterns:** A mix of privately held agricultural plots and Gram Panchayat-administered institutional lands influences planning feasibility.
- **Ecological Buffers:** Forest-edge villages like Dhangari require zoning protections against unregulated expansion due to elephant corridors and wildlife activity.

2.7.12. Key Observations

- Settlement densification is evident in central clusters, with reduced open spaces and plot subdivisions.
- Water bodies remain ecologically significant, yet face encroachments and contamination risks due to wastewater drainage.
- The linear development along NH-16 and regional roads is reshaping growth patterns toward peri-urbanization.
- Ecological and transportation layers suggest a need for buffer zones, flood mitigation planning, and housing density control measures.

2.8. Abadi/Residential Area Spatial Analysis

2.8.1. Growth Pattern

Between 2010 and 2020, Abadi areas in Makrampur GP expanded notably along NH-16 and adjoining village roads. Satellite imagery as shown in Figure 2-3, Figure 2-4 & Figure 2-5 confirms:

- Compact clustered settlements in 2010.
- Lateral ribbon expansion by 2015.
- Infill and plot densification by 2020.

Abadi area now constitutes 1,095,298 sq. m. (19%), a considerable increase influenced by improved connectivity.

2.8.2. Topography & Slope Analysis

- Residential zones generally lie on flat terrain suitable for construction.
- Slope maps (Figure 2-9 Slope Map) show minimal gradients, except near the riverbank, which poses risk during monsoons.
- Areas near ponds and low-lying zones require elevated plinth construction and stormwater planning to prevent waterlogging.

2.8.3. Transportation Analysis- Existing Road Network

- Makrampur GP's residential access is defined by village roads, state highways, and NH-16.
- The PMGSY funded internal roads have improved basic connectivity.
- However, road widths and surfaces vary ranging from kutcha in remote settlements to semi-pucca and tarred roads in core clusters.
- Cycle and pedestrian infrastructure are absent, affecting school going children and women commuters.
- Public transport options (autos, buses) operate intermittently and are unavailable post 8 PM, restricting emergency access and mobility.

2.8.4. Existing Land-use

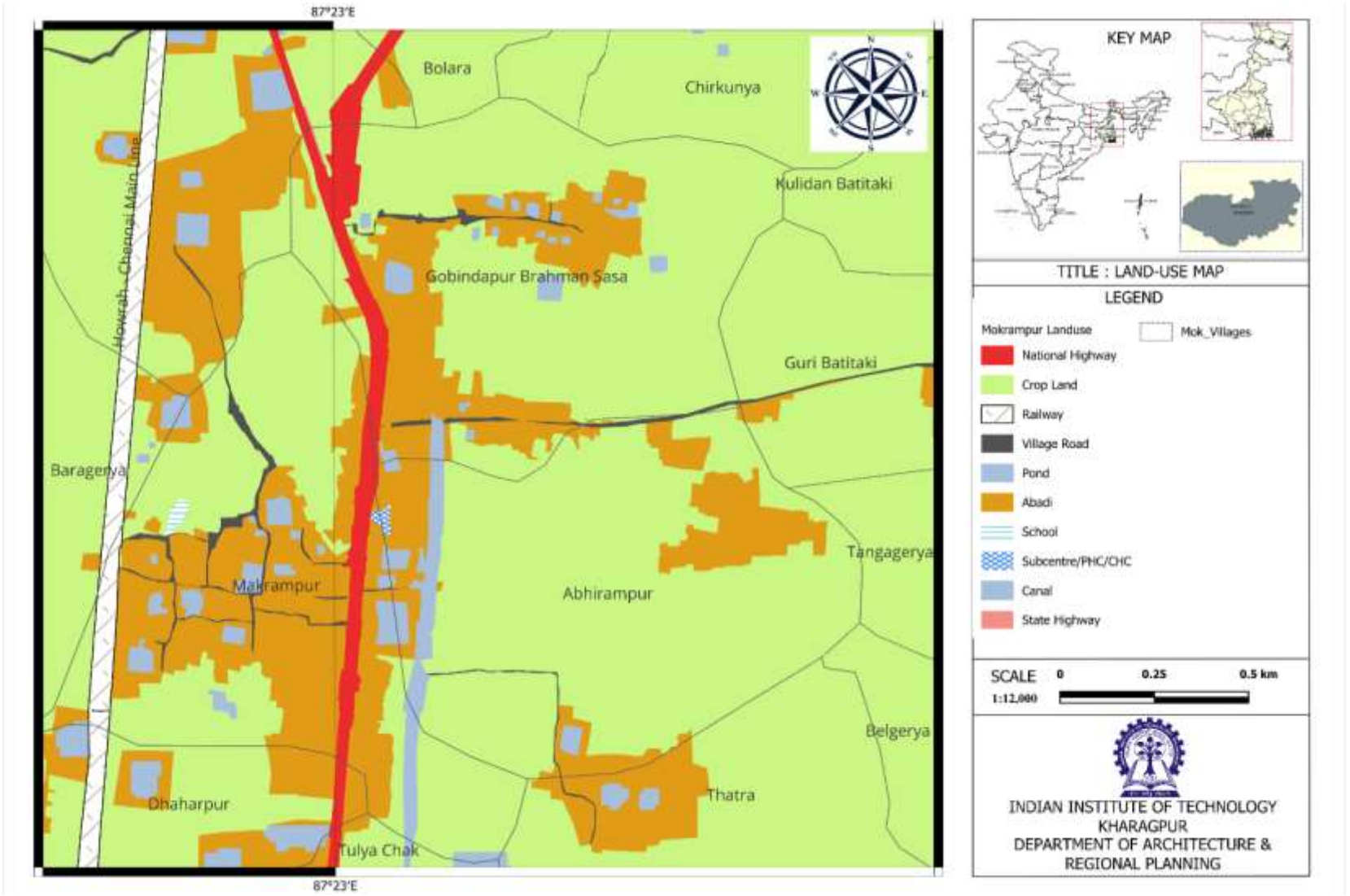

Figure 2-18 Existing Land Use Map
(Source: Author)

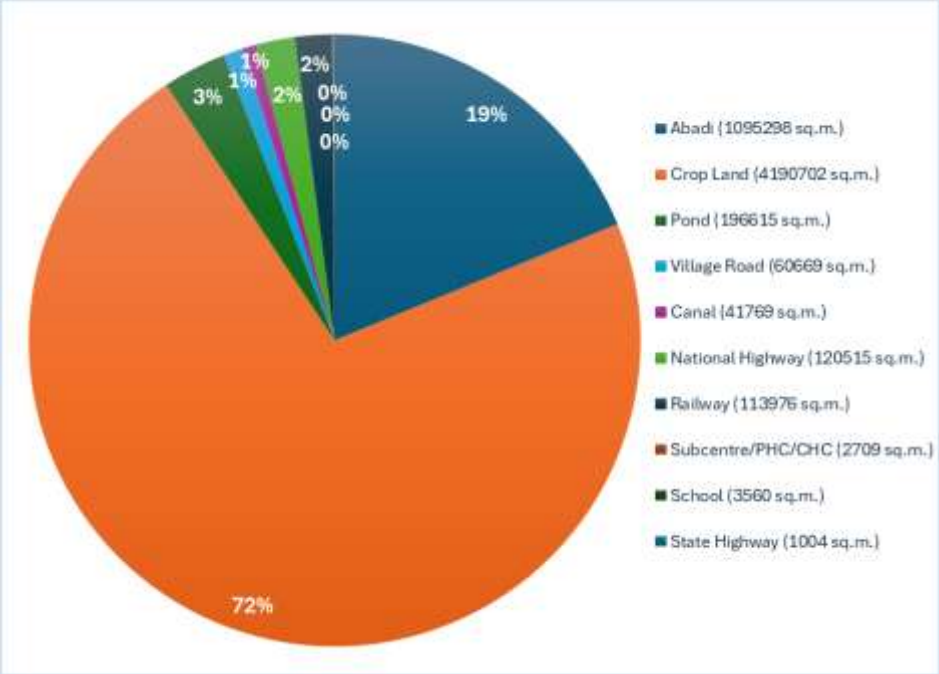

Figure 2-19 Existing Land Use Proportion

(Source: Author)

2.8.5. Spatial Growth Trends & Recent Growth Direction

Analysis of satellite imagery and LULC overlays from 2010, 2015, and 2020 highlights the following spatial growth patterns:

- Linear Expansion: Settlements have expanded laterally along NH-16, forming ribbon-like development influenced by transport corridors.
- Infill Development: Previously vacant agricultural pockets within established settlement clusters have been occupied through plot densification and informal subdivision.
- Eastern Growth Bias: Residential and institutional infrastructure is more concentrated toward the eastern side of NH-16, indicating future pressure zones for expansion.
- Southern Node Activation: Emergence of blue-roofed structures (Hotels, Shah Marbles, etc.) in the southern quadrant signals commercial activities.
- Fragmentation of Agricultural Land: Unregulated conversions around intersections and pond clusters threaten long-term food security.

2.8.6. Any Other Spatial Analysis

The following geospatial observations complement the formal land-use assessment:

- Drainage Infrastructure: Existing drainage is inconsistent across Abadi areas. Open and unlined drains dominate peripheral settlements.

- Forest Proximity Buffers: Villages like Dhangari, located near forest zones and elephant corridors, require protective zoning and safe mobility infrastructure.
- Land Ownership Composition: A mix of private agricultural holdings and Panchayat-controlled institutional plots affects feasibility for layout restructuring and public asset creation.
- Flood Susceptibility Mapping: Low-lying areas adjacent to Keleghai River and ponds are identified as flood-vulnerable zones needing hydraulic safeguards.

2.8.7. Key Observations

- Agricultural Dominance Is Declining: With just 72% land remaining under cultivation, rising encroachment and real estate pressure may jeopardize future agro-based livelihoods.
- Settlement Densification Is Accelerating: Infill and ribbon development along NH-16 reflect increased demand for housing and infrastructure but call for stricter zoning.
- Ecological Assets Are Vulnerable: Ponds and forest-edge zones are increasingly encroached, demanding targeted rejuvenation.
- Transport Accessibility Shapes Growth: Mobility corridors directly influence spatial expansion and land value concentration, especially in areas adjoining NH-16 and major village roads.
- Spatial Planning Must Integrate Risk & Sustainability: The trends necessitate an urgent move toward integrated zoning, disaster preparedness, and ecosystem-sensitive infrastructure deployment.

3. Gram Panchayat Profile

3.1. Demographic Profile

Makrampur Gram Panchayat, situated along the Chennai-Kolkata Highway (NH16) in Paschim Medinipur district of West Bengal, encompasses an area of 62.07 square kilometres and comprises 44 villages under 15 samsads/booths. As of April 1, 2024, the total population is 24,092, as per the Jal Jeevan Mission report, with a population density of 388 per square kilometre. Gram Pradhan Sri Pranab Bijli heads the panchayat. This demographic profile analysis forms a crucial component of the Enhanced Gram Panchayat Spatial Development Plans (GPSDP) project, providing essential insights into the population dynamics that will inform sustainable development strategies for the region.

3.1.1. Population Distribution

The population distribution over the geographical area is shown in figure 1. It shows high density o population along the highway and the railway track. The population distribution and population share of Makrampur GP, Narayangarh (Rural), Paschim Medinipur (Rural) and West Bengal (Rural) are shown in the Table 3-1.

Table 3-1 Population Distribution

Population Distribution				
Year	**West Bengal (Rural)**	**Paschim Medinipur (Rural)**	**Narayangarh (Rural)**	**Makrampur GP**
1991*	49,370,364	7,510,917**	1,25,263	16,180
2001*	57,748,946	4,575,651	2,58,507	19,153
2011*	62,183,113	5,190,771	2,93,613	22,340
2024#	78,053,395	4,664,481	3,74,603	24,092

**Census 2001 and Census 2011*
#This data has been uploaded on JJM Dashboard by the respective states after calculating the population based on 2011 census and the decadal growth rate
***The Paschim Medinipur district was established on January 1, 2002. It was formed after the Midnapore district was split into Paschim Medinipur and Purba Medinipur. The population mentioned is for Midnapore*

Makrampur Gram Panchayat comprises 44 villages, of which several have experienced significant population changes in recent years:

•**Tangagerya:** This village was recently depopulated after the 2011 census, representing a complete demographic shift in the area.

•**Tulya Chak:** Previously depopulated by 2011, this village is now experiencing repopulation, indicating renewed settlement patterns.

•**Dauka Batitaki** and **Syam Chak:** These villages remain depopulated as of the latest records.

Table 3-2 Population share

Population Share				
Spatial Unit	**Total Population (2001)**	**Population shares to the upper Spatial Unit**	**Total Population (2011)**	**Population shares to the upper Spatial Unit**
Makrampur GP	19,153	7.09%	22,311	7.60%
Narayangarh (Rural)	2,58,507	6.65%	293,613	5.66%
Paschim Medinipur (Rural)	4,575,651	6.70%	5,190,771	8.35%

Source: Census of India, 2001 and Census of India 2011

3.1.2. Population Growth Trend

Overall, the population in the Makrampur GP is growing with decreasing growth rate. Between the year 2001 and 2011, the total population in the GP grew by 16.63%, which is comparatively 1.74% lower growth rate than the growth rate during the 1991-2001 decade, which was 18.37%. The population growth rate of the GP Is much more than that of its upper spatial units.

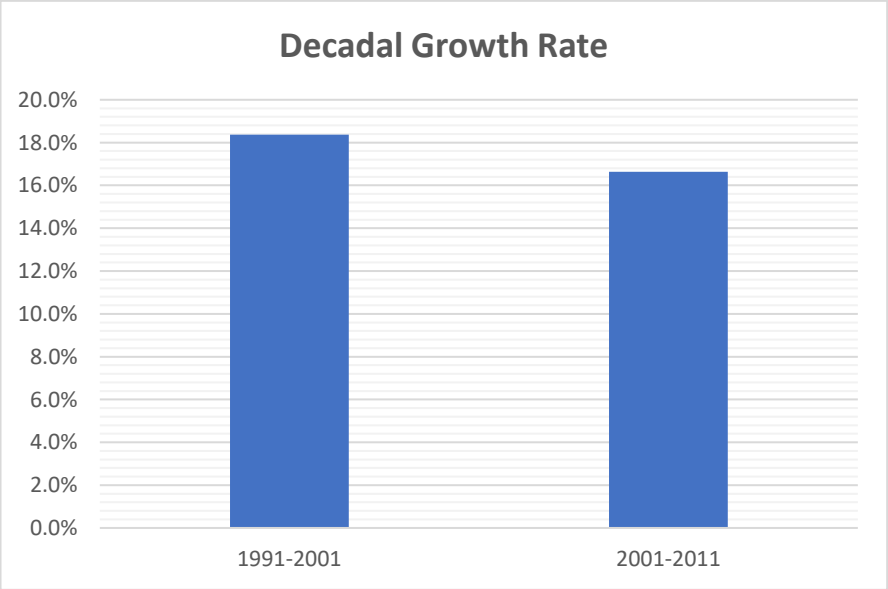

Figure 3-1 Decadal Growth rate for the Makrampur GP

Source: Census of India, 2001 and Census of India 2011

Table 3-3 Population Growth rate for the year 2001-2011

Population Growth Rate				
	West Bengal (Rural)	**Paschim Medinipur (Rural)**	**Narayangarh (Rural)**	**Makrampur GP**
2001-2011	7.67	13.44	10.93	16.63

3.1.3. Population Density

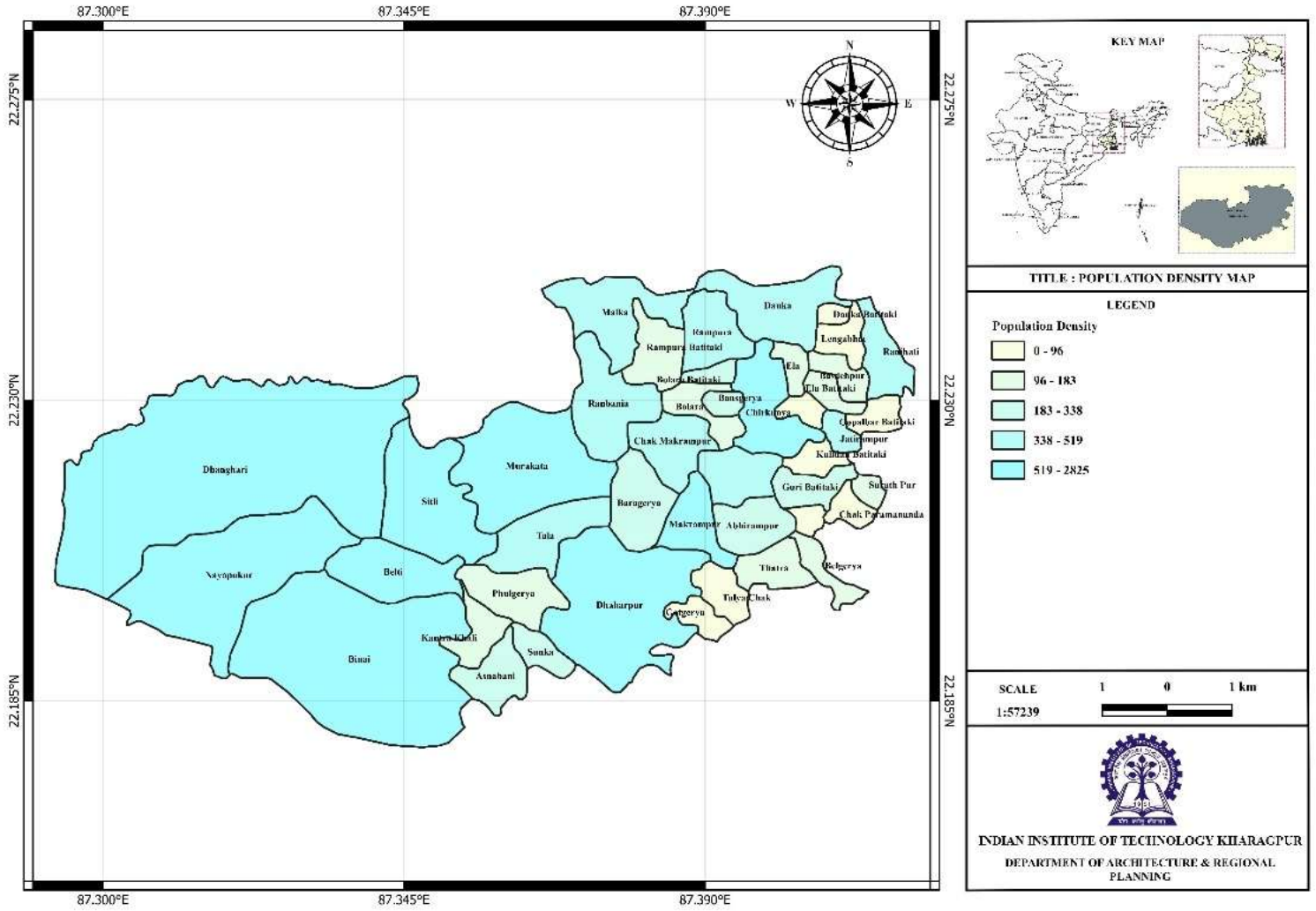

Figure 3-2 Population Density Map of Makrampur GP
Source: Census of India,2011

3.1.4. Average Household size

According to the 2011 Census, Makrampur GP has 5164 houses accommodating a population of 22340, resulting in an average household size of 4.32.

3.1.5. Literacy Rate

Development is a dynamic process, and it requires an educated, skilled, and competent workforce. Literacy plays an important role in providing skilled workforce as well as literate consumer demands more for a better lifestyle. Literacy rate refers to the number of literate populations to the total.

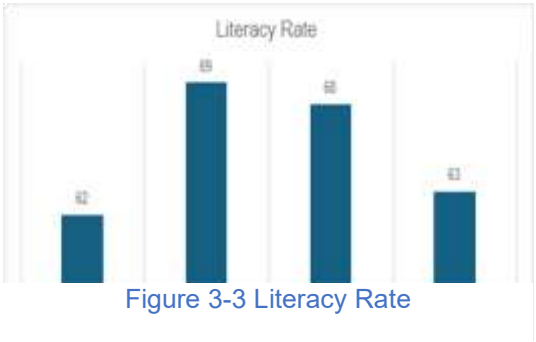

Figure 3-3 Literacy Rate

As per the Census 2011, the literacy rate in the GP is 62%, which means out of the total population 22,340 people in Makrampur GP, 13,798 are literate. The literacy rate amongst, the state, district, taluka and at Makrampur GP levels, the taluka has the highest number of literates.

3.1.5.1. Digital Literacy

The digital literacy rate in the area is extremely low, with only 4% of the population having digital skills, while 96% lack basic digital knowledge. This highlights a significant gap in technology adoption and access to digital resources, which may hinder economic opportunities and access to essential services. Targeted interventions, such as digital training programs, are crucial to bridging this gap and promoting digital inclusion.

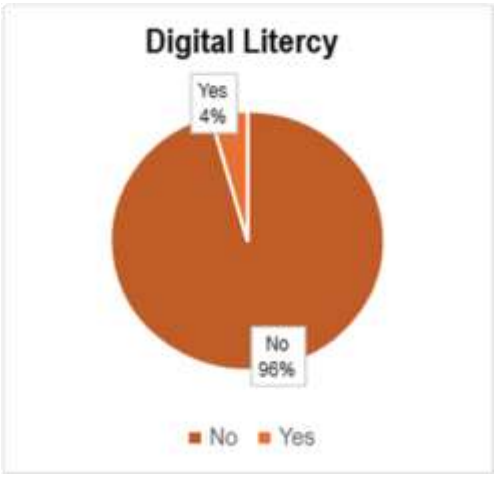

Figure 3-4 Digital Literacy

3.1.6. Gender Ratio

The number of females per 1000 males is known as the sex ratio. Currently, 975 females are living in GP homes per 1000 males, which is lower than the sex ratio in the taluka but still relatively higher than that of the district and state.

3.1.6.1. Age-Gender Pyramid

The 15-29 age group is dominant, indicating a strong potential workforce. However, the smaller 0-4 and 5-9 cohorts suggest declining birth rates. A higher female percentage in the 25-54 age range points to male out-migration for jobs, while the 60+ population is shrinking, with more elderly women, indicating higher female life expectancy. Additionally, the higher proportion of males in younger age groups suggests females out-migrate for marriage or education.

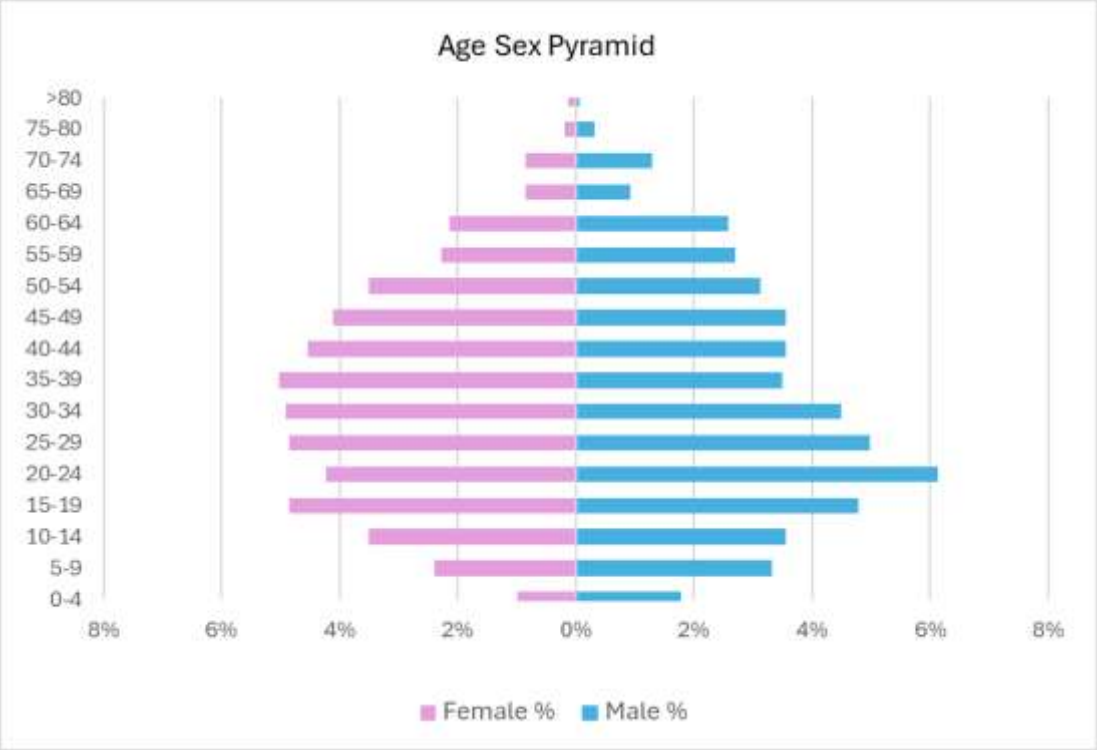

Figure 3-5 Age Sex Pyramid

3.1.7. Schedule Caste and Schedule Tribe Population

Out of the total population of the GP, 19.86% (4431) of the population is Schedule Caste, and 44.54% (9939) of the population is Schedule Tribe.

Table 3-4 Scheduled Caste and Scheduled tribes Population

	Total Population	SC Population	SC Population (in %)	ST Population	ST Population (in %)
Makrampur GP	22340	4431	19.86	9939	44.54
Narayangarh (Rural)	293,613	55,346	18.84	66,856	22.77
Paschim Medinipur (Rural)	5,190,771	1,034,177	19.92	853,031	16.43

West Bengal (Rural)	62,183,113	17,095,107	27.49	4,855,115	7.807

(Source: Census of India, 2011)

3.1.7.1. Spatial Distribution of SC & ST Population

The spatial distribution of SC & ST population is shown in maps below.

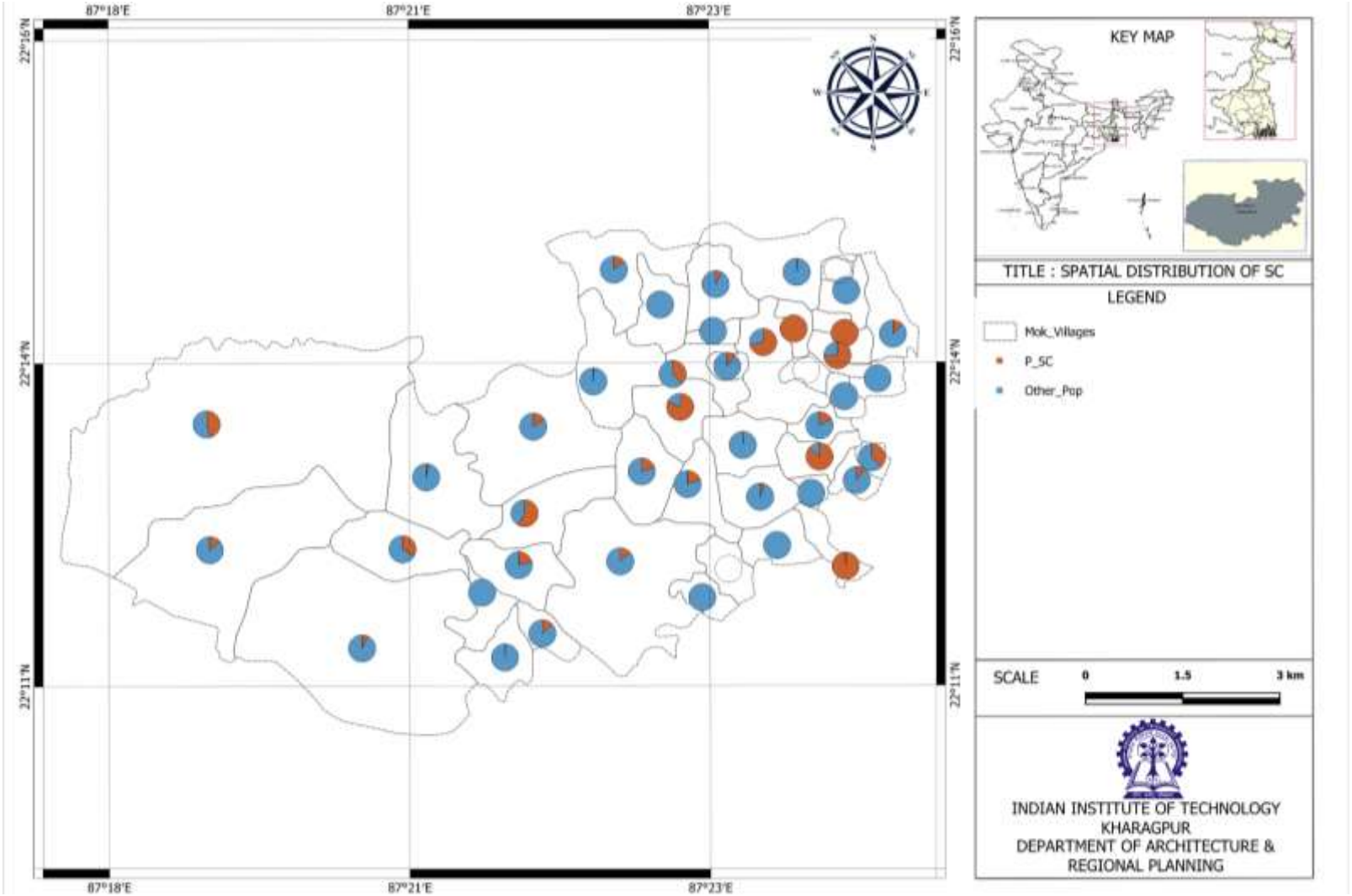

Figure 3-6 Spatial Distribution of SC Population

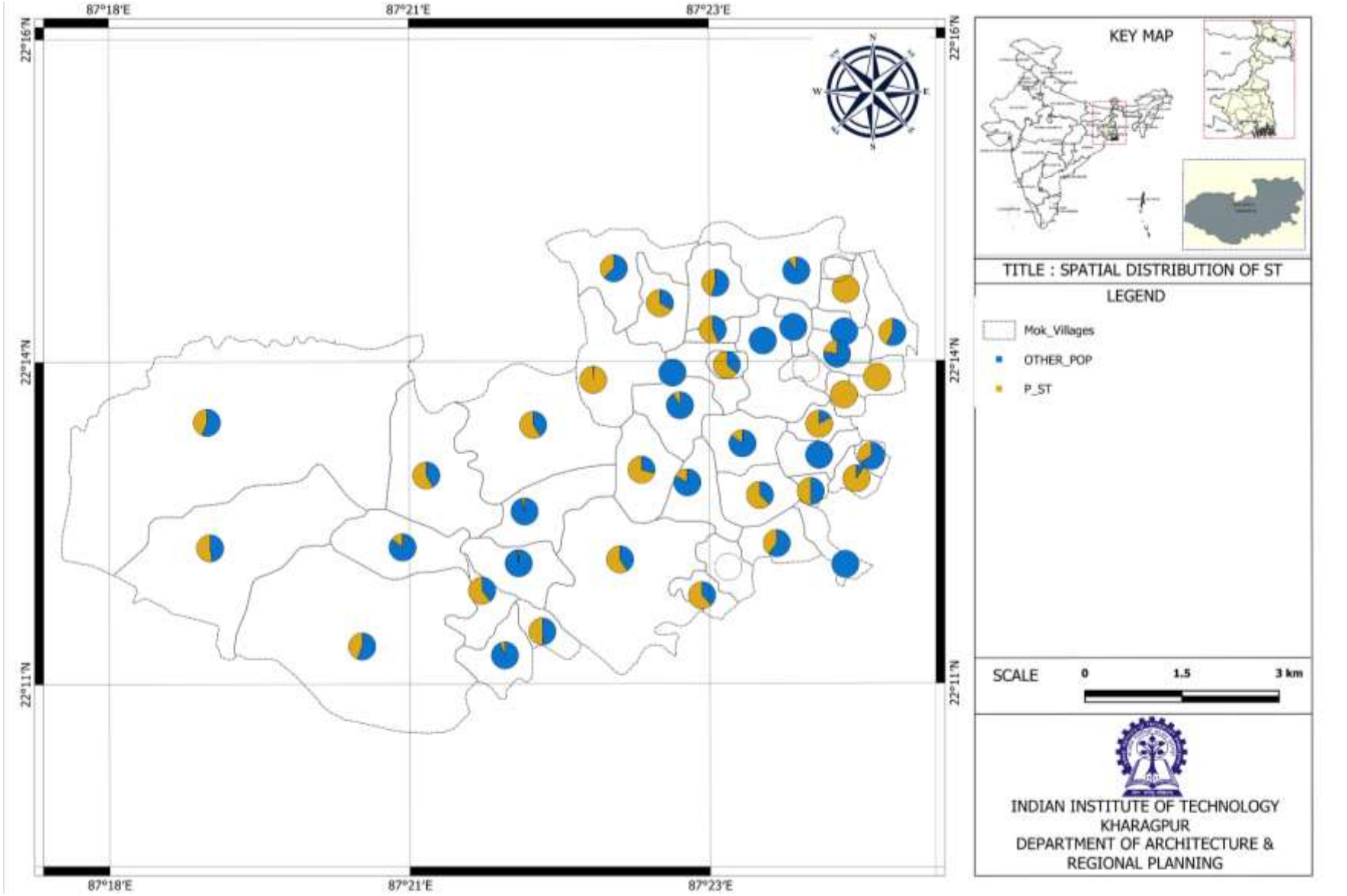

Figure 3-7 Spatial Distribution of ST Population

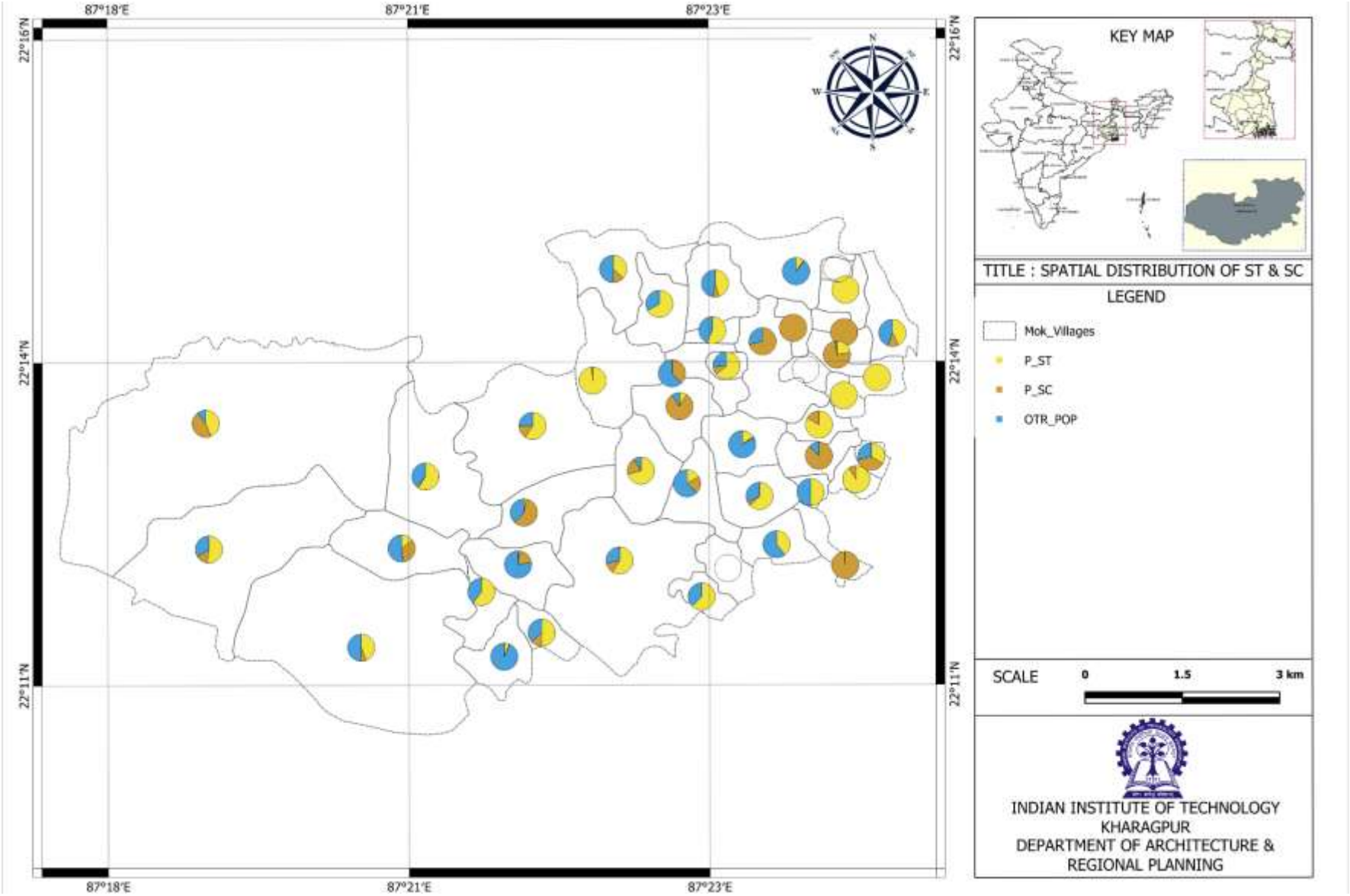

Figure 3-8 Spatial Distribution of SC & ST Population

3.1.8. Migration

Migration patterns within Makrampur GP demonstrate a distinct trend of male-dominated out-migration driven by livelihood insecurity, combined with limited in-migration related to marriage and resettlement. These demographic shifts have influenced workforce availability, settlement densities, and the social fabric across various village clusters.

Out-Migration for Employment:

A significant proportion of working-age men (particularly those between 15 and 45 years) migrate seasonally or permanently to nearby urban and industrial areas such as Kharagpur, Kolkata, and Bhubaneswar. This is reflected in the age-sex pyramid, which shows fewer men in the working-age group. This migration is largely a response to the scarcity of secure and well-paying employment options within the Panchayat.

The household surveys indicate that employment seekers commonly relocate to industrial units, construction sites, or service-based jobs beyond the Panchayat boundaries, creating a high dependency on remittances in affected households.

Female Migration and Return Migration:

In-migration is limited and primarily includes women relocating due to marriage. Additionally, certain depopulated or semi-abandoned villages like Tulya Chak have shown early signs of resettlement, suggesting return migration or expansion of extended family settlements. By contrast, villages such as Tangagerya, Dauka Batitaki, and Syam Chak remain depopulated as per the latest records.

Socio-Economic Impacts:

The implications of migration include:

- Household Disruption: Families often rely on a single breadwinner working outside the GP, resulting in an increased burden on women, particularly in agricultural tasks and household responsibilities.
- Labor Shortages: Migration reduces local availability of labour during peak agricultural seasons, impacting farm productivity.
- Youth Engagement: Out-migration affects skill retention and long-term youth involvement in rural economic activities.

Drivers of Migration:

Push Factors:

- Low wage structures in the local agricultural sector (e.g., ₹305-₹328/day for labor).

- Limited market connectivity for non-farm produce and SHG-led enterprises.
- Seasonal employment fluctuations and lack of vocational training infrastructure.

Pull Factors:

- Perceived and actual income opportunities in adjacent industrial zones.
- Year-round employment access and better quality of life in cities.

3.1.9. Key Observations

Demographic analysis of the gram panchayat reveals the following key points:

- Average household size is 4.32.
- The literacy rate in the GP is 62% (Census 2011), Digital Literacy is extremely at 4%.
- Birth rates are low and Male outmigration is high.
- Schedule Caste and Schedule Tribe Population within the gram panchayat is 19.86% and 44.54% respectively.

These demographic insights provide a foundation for targeted interventions in the Enhanced GPSDP. The analysis emphasizes the need for:

- Infrastructure development to address population density variations
- Education and skill enhancement programs to improve literacy and digital inclusion. Strategies to leverage the youthful population for economic growth
- Gender-sensitive policies to address disparities in sex ratio and female out-migration
- Measures to reduce out-migration through local employment opportunities

3.1.10. Population Projections

Projections are an extrapolation of historical data (population v/s time) into the future. Accuracy of population projection is generally considered directly proportional to the size of the existing population/ employment and the historical rate of growth, and inversely proportional to the length of the time projection. This section comprises the estimation and projection of population for the planning area (Makrampur GP). Projection is done for horizon the year 2041, for which the Spatial Development Plan is being prepared for the planning area.

3.1.10.1. Methodology Adopted for Estimation of Population

Population projections for Makrampur GP were carried out using three mathematical projection methods. As the population forecasted by Jal Jeevan Mission for the year 2024 is closest to the arithmetic method, the arithmetic method of the three methods considered as a forecast population for 2041 for the further projections required for the development of planning proposals. The following three population forecasting methods:

•**Arithmetic Method-** This method is based upon the assumption that the decadal increase in population is constant.

•**Geometric Increase Method-** In this method, it is assumed that the percentage increase in population from decade to decade remains constant.

•**Incremental Increase Method-** The method refers to the difference between the absolute population increases during the two successive decades.

Data Source

Various data sources have been used for extracting population details for the planning area. The population distribution for the year 1991, 2001, and 2011 has been sourced from Census of India publications for the projections.

3.1.10.2. Basic Assumptions of Population Projection

Population projection to estimate future growth of the gram panchayat are estimated with the projection methods as described 3.1.10.1. Assumptions for fertility rates, mortality rates, migrations patterns are not being considered for the projections. Also, it is important to note that the assumptions are solely considered for the projection of population and do not consider the sudden influx of population that may arise because of project proposals or other population drawing events.

Demographic studies play a pivotal role in predicting how a population will evolve in the future and how it impacts various realms. A growing population could impact on the environment negatively if not sustained sustainably. Impacts on the ecology through forest cover reduction, more agricultural lands for more food production, pollution of land and water, an increase in the temperature, and many more are observed to weaken how the world functions. The increase in population also threatens the economic sector as the requirement to cater to different sectors of the growing population, when the future Population is unknown. It can put pressure on various services and resources. In addition to this, the ever-increasing population will need

ample income to sustain itself and prevent itself from falling into the cycle of poverty, which will further lead to a lack of education, lesser access to development, and, thereby, leading to poor quality of life. Furthering the implications, the burgeoning population will also need to access various infrastructure in the urban or rural areas like water supply, sewage, transportation, drinking water, healthcare, and many more. Further, the inclusion of senior citizens too is a matter of immediate concern.

1. Arithmetic Increase Method

This method can be utilized for regions that have been established for a very long time and are bigger in size. The following steps must be followed for an Arithmetic Increase Method of forecasting population.

Pn= P + n.C

Where,

Pn= Population after 'n' decades

'P'=present Population.

dP/dt = C, i.e., the rate of change in population with respect to time C.

2. Geometrical Progression Method

This method can be used for regions with an industrial background. The following steps have to be followed for a Geometrical Progression Method of forecasting a population.

Pn = P (1+ IG/100) n

Where,

P = Present Population

n = no. of decades.

IG = geometric mean (%)

3. Incremental Increase Method

This analysis method is suitable for regions growing over time on a positive trajectory.

Pn = P+ n.X + {n (n+1)/2}.Y

Where,

Pn = Population after the nth decade

X = Average increase

Y = Incremental increase

Comparison of different methods is provided in Table 3-5 Population projection.

3.1.10.3. Projected Population for next 10 years (2041)

The Geometric method provides the highest population estimate for Makrampur GP in the horizon year, while the Arithmetic method projects the lowest, with a difference of 4,664. The Arithmetic method estimates a population of **31,580** for 2041, which has been considered for planning as it reflects a gradual and steady growth trend for Makrampur GP.

Table 3-5 Population projection

Year	Arithmetic Method (AM)	Geometric Method (GM)	Incremental Increase Method (IIM)
Census 1991	16180	16180	16180
Census 2001	19153	19153	19153
Census 2011	22340	22340	22340
Projected for 2021	25420	26250	25902
Projected for 2026	26960	28455	28084
Projected for 2031	28500	30845	29464
Projected for 2036	30040	33436	31111
Projected for 2041	31580	36244	32758

Source: Census data

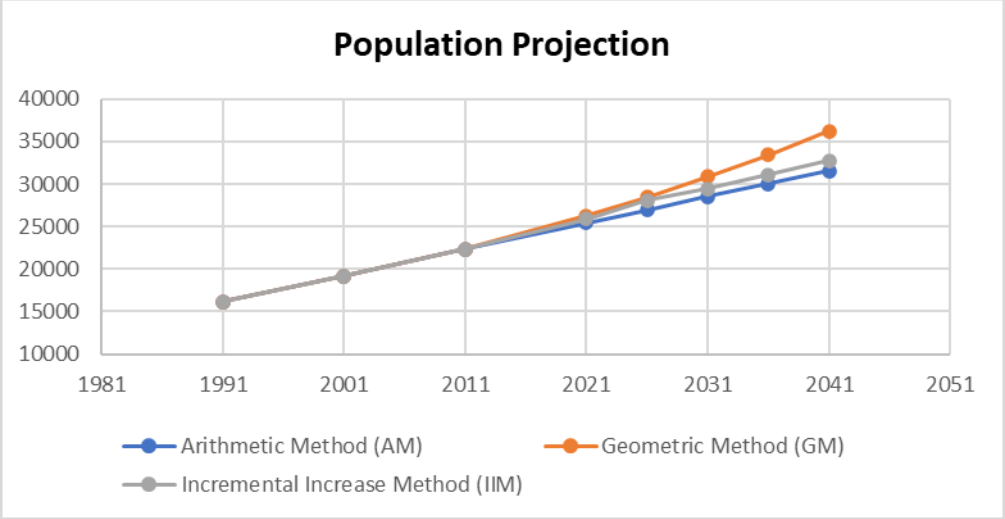

Figure 3-9 Population projection

3.2. Economic Profile

3.2.1. Regional Economic Profile

The economic landscape surrounding Makrampur Gram Panchayat is defined by the interplay between West Bengal's macroeconomic indicators, Paschim Medinipur's

agro-industrial diversification, and emerging local economic drivers in the Narayangarh block. Understanding this multi-scalar context is essential for identifying economic opportunities and constraints within the Panchayat.

3.2.1.1. State Economic Profile

West Bengal's economy has experienced moderate growth over the past decade. Between 2012-13 and 2021-22, the state's real Gross State Domestic Product (GSDP) grew at an average rate of 4.3%, which is lower than the national average of 5.6%. Consequently, West Bengal's contribution to India's GDP declined from 6.8% in 1990-91 to 5.8% in 2021-2022.

The services sector is the largest contributor to the state's economy, accounting for 54.9% of the Gross State Value Added (GSVA). The industry sector contributes 24%, while agriculture and allied activities make up 21.1%. Notably, West Bengal is the second-largest tea-producing state in India, producing 414.08 million kg of tea in 2022-23, which accounts for 30.3% of the country's total tea production.

In terms of human development indicators, the state's literacy rate was recorded at 76.3% in 2011, an improvement from 68.64% in 2001. However, as of 2021-22, West Bengal's per capita income remained 20% below the national average.

3.2.1.2. District Economic Profile

Paschim Medinipur’s economic profile over the last five years shows a story of continuity and gradual transformation. Agriculture remains dominant, with high outputs of paddy, potato and oilseeds and ongoing initiatives to raise farmer’s incomes. Industry has gained momentum with new large projects (metals ore refining) and the strengthening of manufacturing parks around Kharagpur and Salboni, which augur well for the district’s future growth.

Infrastructure development - from roads and rail to power and internet - has significantly improved connectivity and quality of life, thereby creating an enabling environment for all sectors. The MSME sector, spanning traditional crafts to modern services, continues to be a key pillar, driving inclusive growth and entrepreneurship at the grassroots level.

Quantitative indicators reflect these trends: production figures in agriculture have been stable or rising, industrial investment has flowed in, nearly 100% of households have electricity villages are connected by all-weather roads, and the number of MSME units and clusters has expanded.

Paschim Medinipur, once identified as a backward-region district, is leveraging its strengths of having fertile lands, strategic location, young human resources and policy support to chart a path of balanced economic development. With sustained investment

and support, the district is poised to further enhance its economic output and diversify its profile in the coming years, building on the solid progress made during 2019-2024.

3.2.1.3. Block Economic Profile

Located within the southern fringe of Paschim Medinipur, Narayangarh Block maintains a dominantly rural economic base:

Primary Activities:

Predominantly agricultural, with dependence on seasonal paddy cultivation and rain-fed irrigation.

Animal husbandry (goats, poultry, dairy) and sal leaf collection from nearby forest belts form secondary income sources, especially among tribal communities.

Labor Mobility:

Many residents commute or migrate to Kharagpur, Belda, or nearby industrial areas for employment.

Construction work, factory labor, and informal sector jobs in adjoining towns are common.

Local Economic Infrastructure:

Weekly markets (haats), small rice mills, and SHG-led enterprises contribute to informal sector circulation.

Despite being largely agrarian, the block's proximity to national highways, rail connectivity, and growing SHG network present latent opportunities for rural enterprise development and skill-based livelihoods.

3.2.1.4. Industrial Areas/Special Economic Zones (SEZ) near the Gram Panchayats

While no SEZs fall directly within Makrampur GP, several key industrial zones in the broader region influence labor migration and market integration:

Kharagpur Industrial Area:

Hosts iron & steel units, railway workshops, and agro-processing industries.

A significant source of employment for skilled and unskilled workers from Makrampur.

Salboni Industrial Belt (approx. 30 km from the GP):

Includes JSW Cement and large-scale metal refining projects.

Recently boosted by improved road connectivity and power supply.

Upcoming Agro-Processing Clusters:

Identified potential for setting up satellite collection points for sal-leaf plates, dairy, and poultry processing, aligning with SHG activities in the GP.

3.2.1.5. Major Tourism Spots/Major Economic Activities/Markets near the Gram Panchayats

Tourism & Culture:

The Belti Old Queen Palace, situated within Makrampur GP, holds potential as a heritage and eco-tourism site.

Local festivals like Tusu Parab and Gajan attract visitors and sustain traditional cultural industries.

Economic Centers Nearby:

Belda Town: Primary hub for higher education, healthcare, and wholesale markets.

Kharagpur: A regional economic engine with railway, industrial, and institutional establishments.

Weekly Markets at Binai, Belti, and Dhangari offer linkages to rural produce buyers, aggregators, and informal trade networks.

These centers offer vital forward and backward linkages for agricultural surplus, SHG products, and service-sector commuting, thus shaping Makrampur GP's economic orientation.

3.2.2. Gram Panchayat Economic Profile/Activities

The economic profile of Makrampur Gram Panchayat is fundamentally agriculture-based, with paddy cultivation as the dominant activity. A significant challenge for farmers is poor soil fertility, reported by 49% of respondents, and the high cost of irrigation, with private services costing INR 4,000 per 50 decimals. There's a notable reluctance to diversify crops beyond paddy, partly due to the absence of agricultural storage and processing facilities that compel farmers to sell produce immediately at potentially lower prices.

Animal husbandry, including poultry, goat, and cow rearing, is widespread but primarily for subsistence, with low commercial utilization (e.g., only 12% of cow owners use them for commercial dairy) due to poor veterinary services and a lack of cooperative infrastructure.

In the secondary sector, the collection of Sal leaves is a key activity for the tribal population, but most villagers only perform the primary stage, limiting their economic benefits as local processing into plates is lacking. Small-scale industries like puffed rice production and rice milling exist but are hampered by limited access to modern equipment, finance, and market linkages. Over 370 Self-Help Groups (SHGs) are active, involved in Sal leaf collection and other small enterprises, but they too face challenges with market access despite having access to the Central Government Revolving Fund.

The workforce is heavily concentrated in labor (52%) and agriculture (36%). A prominent characteristic is male-dominated out-migration to urban and industrial areas like Kharagpur and Kolkata, driven by the scarcity of secure, well-paying local job opportunities and low wages (e.g., daily wage laborers earn INR 305). The plan emphasizes enhancing economic resilience through agricultural diversification, value addition, supporting SHGs, and skill development to create more local employment

3.2.2.1. Primary Sector Profile/Activities

3.2.2.1.1. Agriculture Economy

The Sarpanch survey and primary survey indicate a heavy reliance on paddy cultivation as the primary agricultural activity, with the Kharif/Aman variety being the most widely grown. Only 12% of farmers practice multi-cropping, while the majority depend solely on paddy cultivation. A significant number of farmers grow paddy twice a year. While the Primary crop that is grown is Paddy, there are a few farmers who have explored in Sarso and Potato. Potato need less water and there

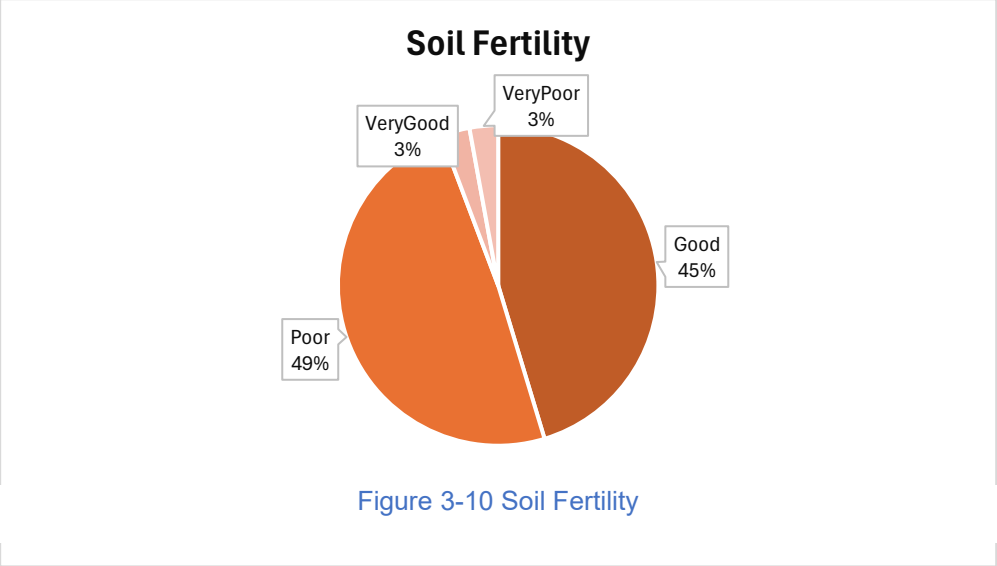

Figure 3-10 Soil Fertility

is potential for it to be profitable. There was production of 140 Quintal in the year 2024 by single farmer.

For seed procurement, farmers must travel to the nearby market of Makrampur, Binai & Belti, as local availability remains a challenge. The predominant soil type in Makrampur Gram Panchayat is Bele soil and sandy soil. Soil fertility and crop yield are major concerns among farmers, with 49% of respondents rating soil fertility as poor, while only 45% consider it to be good.

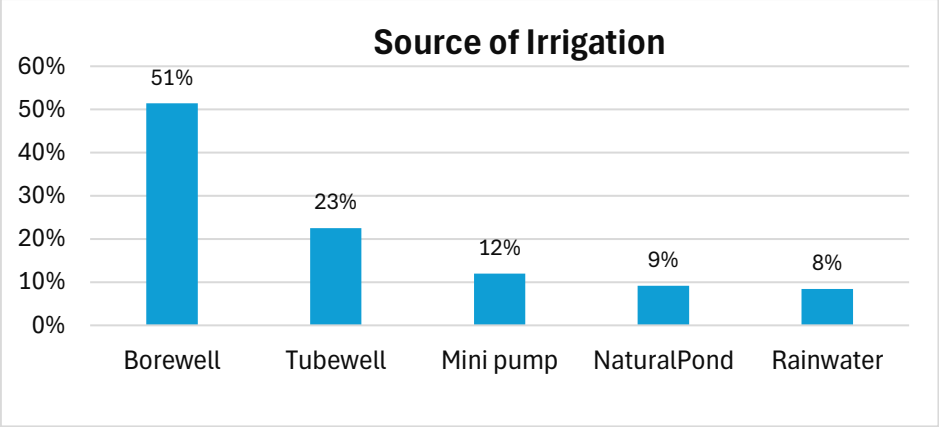

Figure 3-11 Source of irrigation

For irrigation Borewells are the most widely used irrigation source, serving 40% of farmers, while 23% depends on tubewell,12% on minipump, 9% on natural pond and remaining 8% on rainwater.

Makrampur Gram Panchayat has proposed the installation of 5HP solar pumps for every 5 acres of land to improve irrigation facilities. However, securing adequate funding remains a challenge. While a few solar pumps are already functional in select locations, several are non-operational due to maintenance issues. The lack of skilled personnel within the Gram Panchayat for repairs further exacerbates the problem.

Currently, private submersible (mini deep) pumps are widely used in the region, providing an additional income source for their owners. These individuals sell irrigation services to farmers at a rate of INR 4,000 per 50 decimals of land, making irrigation costly for small and marginal farmers. Moreover, a drainage channel from Khelar (a neighboring Gram Panchayat in the north), which serves as the primary irrigation source for fields in Murakata village, is made of mud and requires urgent repairs. Strengthening local infrastructure, ensuring access to trained repair personnel, and improving irrigation facilities are critical for enhancing agricultural productivity and reducing dependence on costly private irrigation services.

Two of the problems identified in the Gram panchayat are reluctance to grow crops other than paddy. First was the lack of an agricultural storage facility. Even if the people produced crops other than the Paddy, they lacked the facility to store it and preserve it. Further, there were concerns regarding the market. Currently, some aggregators go to the people, collect their produce, and take it to the market. As the people lack any public transport or personal transport, it isn't feasible for the villagers to take the produce to the APMC themselves.

The primary survey highlights a significant gap in agricultural knowledge among farmers due to limited exposure to modern farming techniques. The absence of a Krishi Vigyan Kendra (KVK) in the village further exacerbates this issue, as there is no institutional mechanism to guide farmers in technology generation, assessment, refinement, and dissemination in agriculture and allied sectors. As a result, farmers continue to rely on traditional methods, which may not be optimal for productivity and sustainability.

3.2.2.1.2. Animal Husbandry

Beyond agriculture, animal husbandry is a crucial component of the rural economy in Makrampur Gram Panchayat, with poultry farming, goat rearing, and cow husbandry being the primary livestock activities. Duck farming is also practiced in certain areas, contributing to income diversification. However, despite the considerable number of households engaged in livestock rearing, commercial utilization remains low. While 51% of households own cows, only 12% use them for commercial dairy purposes. Similarly, 23% of households rear goats, but only 8% engage in commercial goat farming, and out of 23% of households with poultry, only 9% use them for commercial purposes. This indicates that livestock is primarily maintained for subsistence rather than as a significant income source.

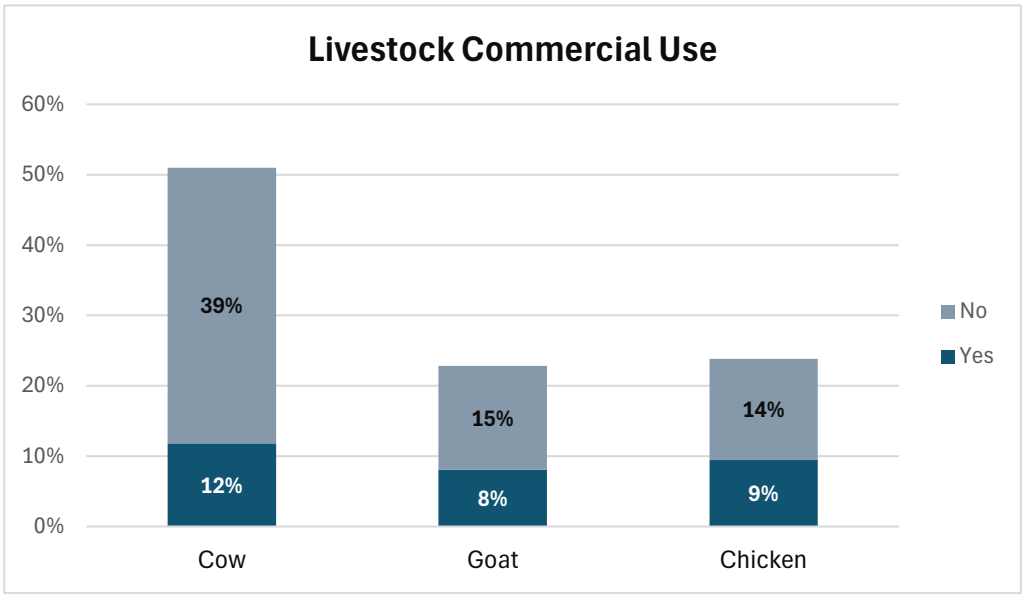

Figure 3-12 Percentage of people using livestock for commercial use

Source: Census on India,2011

The limited commercialization of animal husbandry can be attributed to poor veterinary services, the absence of veterinary hospitals, and the lack of cooperative infrastructure. These factors restrict the growth of cattle farming, reduce dairy production potential, and limit opportunities for income generation through livestock trade. The establishment of veterinary healthcare facilities, livestock cooperatives, and access to modern animal husbandry techniques could enhance productivity, improve the commercial viability of dairy and livestock farming, and provide a sustainable source of income for rural households.

3.2.2.2. Secondary Sector Profile/Activities

A significant portion of the tribal population in Makrampur Gram Panchayat is engaged in the collection of Sal leaves from the forest. The process involves gathering fallen leaves, drying them, and selling them to local aggregators, who then supply them to Sal leaf plate manufacturers. However, as the villagers are only involved in the primary stage of this trade, they receive limited economic benefits. Establishing a Sal leaf plate manufacturing unit within the Gram Panchayat could add significant value to raw materials, generate higher income for local collectors, and create employment opportunities. Additionally, providing training and financial support for direct production and marketing can enhance profitability and reduce dependency on intermediaries.

Apart from forest-based livelihoods, a small number of villagers are engaged in puffed rice production and small-scale rice milling. These activities enable local

processing of agricultural produce, reducing transportation costs and creating income-generating opportunities. However, limited access to modern equipment, financial constraints, and lack of market linkages hinder their expansion. Strengthening cooperative models, providing skill development programs, and facilitating credit access could enhance the sustainability and scalability of these household industries, ultimately contributing to the economic resilience of Makrampur Gram Panchayat.

3.2.2.2.1. Self Help Groups (SHGs)

Makrampur Gram Panchayat has over 370 Self-Help Groups (SHGs) actively engaged in various livelihood activities, including Sal leaf collection, mid-day meal preparation, and other small-scale enterprises. However, while several SHGs are involved in collecting Sal leaves, plate production does not take place locally, limiting their potential earnings. Supporting the development of a Sal leaf plate manufacturing unit could provide value addition, local employment, and improved income generation for SHG members. Additionally, SHGs have previously received training in poultry and mushroom farming, but lack of market access remains a key barrier to their profitability and long-term success.

SHGs in the Gram Panchayat have access to the Central Government Revolving Fund, a crucial financial resource that, if effectively utilized, can drive economic development at both the household and village levels. Women members invest significant time in SHG activities, but sustainable employment and revenue generation remain key concerns. Given the large number of SHGs, there is strong potential to develop a micro-economy within the Gram Panchayat by fostering collaboration between multiple SHGs to produce goods, establish market linkages, and create employment opportunities for other villagers. Strengthening cooperative networks, facilitating financial support, and improving marketing channels can transform SHGs into engines of economic growth and women's empowerment in the region.

3.2.2.3. Tertiary Sector Profile/Activities

3.2.3. Workforce Participation Rate

Workforce participation rate (WFPR) refers to the percentage of the total number of workers to the total population. The total workers' population is the sum of the

main and marginal workers. As per the Census of India, in census, 2011 47% of the population of Makrampur is working population.

Table 3-6 Workforce Participation

Workforce Participation	Census of India, 2011	Census of India, 2011 (%)
Total population	22340	
Total worker	10613	47%
Total non-workers	11734	53%
Total Main Worker	4741	21%
Total Marginal Worker	5872	26%

Source: The Census of India, 2011

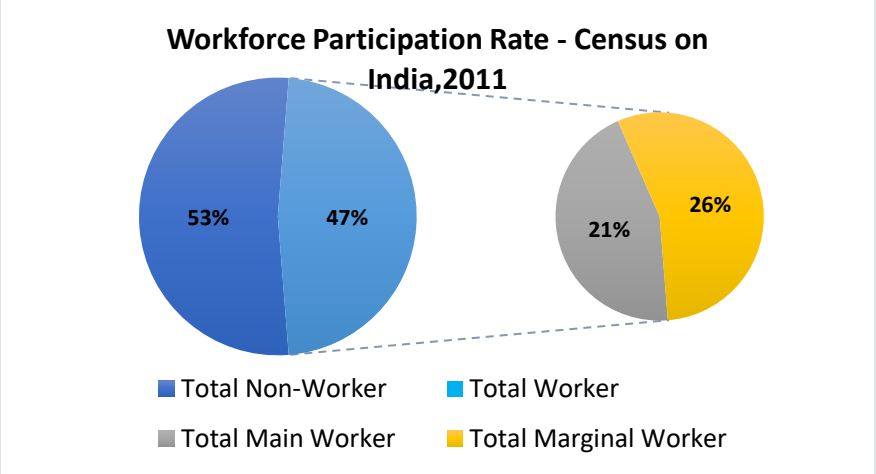

Figure 3-14 Workforce Participation Rate - Census on India,2011

The occupation for living for the surveyed population in Makrampur GP is shown in Figure 3-13. For the households surveyed in Makrampur GP, the major

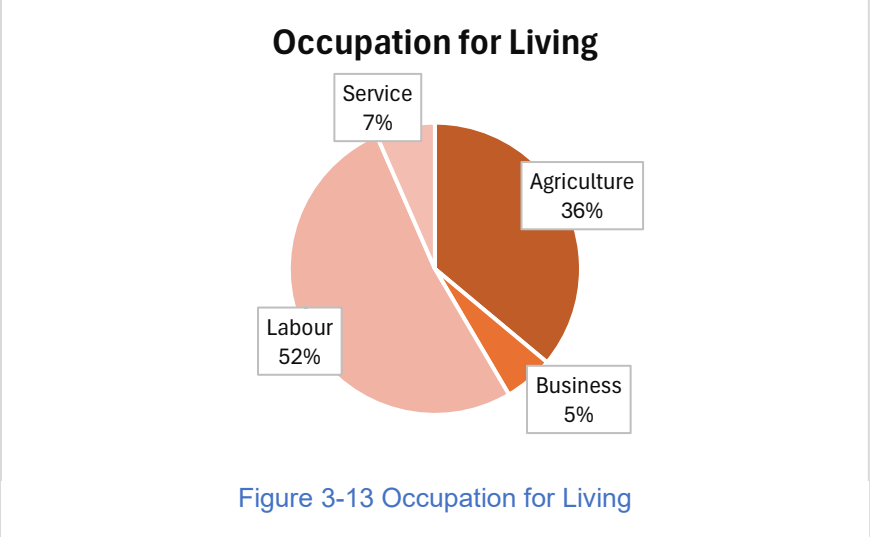

Figure 3-13 Occupation for Living

occupations for living were labour and agriculture, at 52% and 36%, respectively. Only 5% of households earn from business, and 7% are engaged in service.

3.2.3.1. Primary Sector

According to the survey, 52% of the working population is engaged in labor work, comprising 33% daily wage workers, 19% factory workers, and 16% construction workers. Additionally, 12% of workers are employed as Raj Mistri (skilled masons). Bengal Energy employs 5% of the labor force, while the rice bag stitching industry and the Bag factory employ 4% and 2%, respectively.

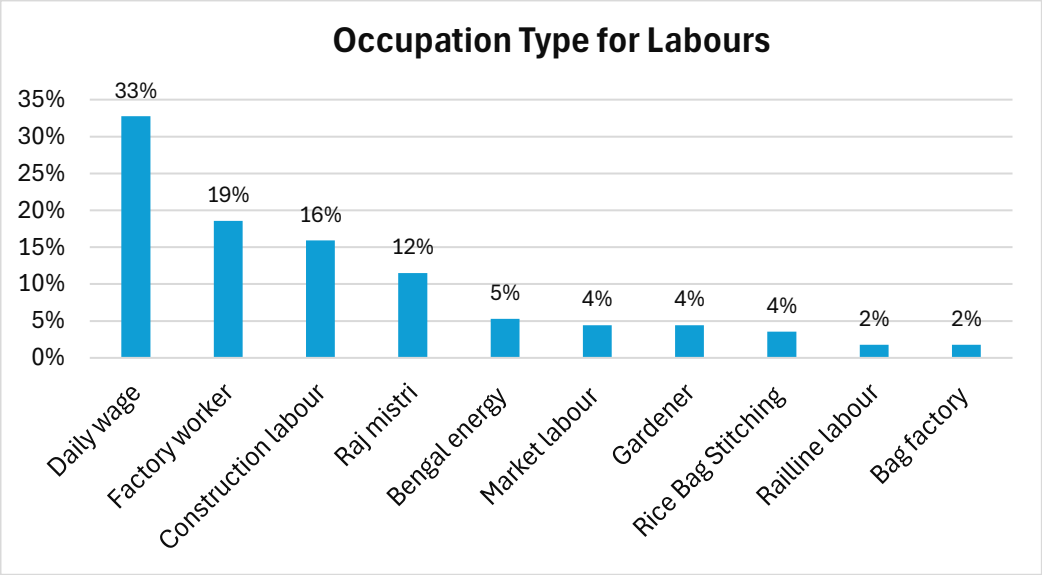

Figure 3-15 Occupation Type for Labours

Source: Census on India,2011

The wage distribution highlights income disparities among labour categories. Rail line labourers earn the highest at ₹ 500 per day, followed by factory workers at ₹ 400, while agricultural labourers receive ₹ 328. Rice bag stitching and daily wage workers earn the lowest at ₹ 305, indicating economic vulnerability. Higher wages

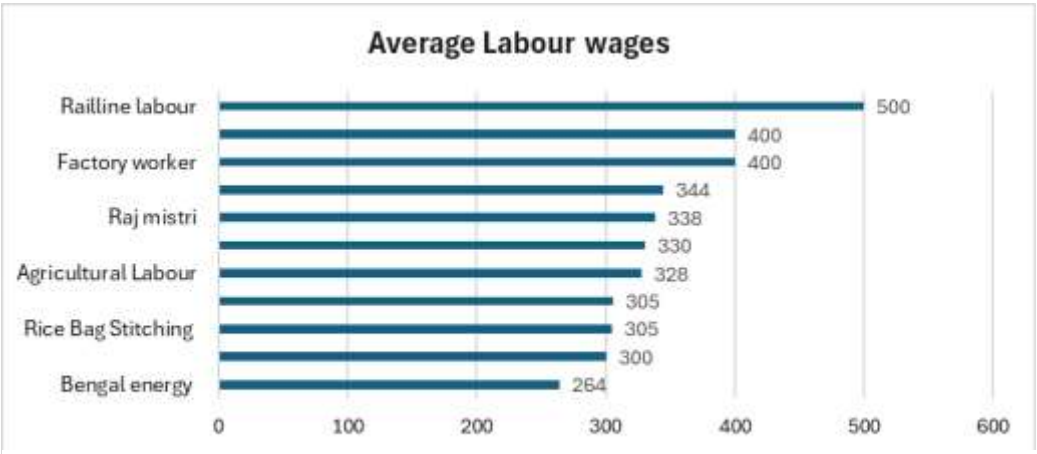

Figure 3-16 Average Labour Wages

in industrial and infrastructure jobs may drive labour migration, while lower agricultural wages could contribute to a declining workforce in the sector.

3.2.3.2. Secondary Sector

According to the survey, only 5% of the working population is engaged in business, mainly in shops (37%), hair salons (20%), carpentry and goldsmithing (10% each), mechanic shops (7%), tea stalls (3%), and poultry farming (3%). Business activity is limited, with retail and skilled trades dominating. Low participation in tea stalls

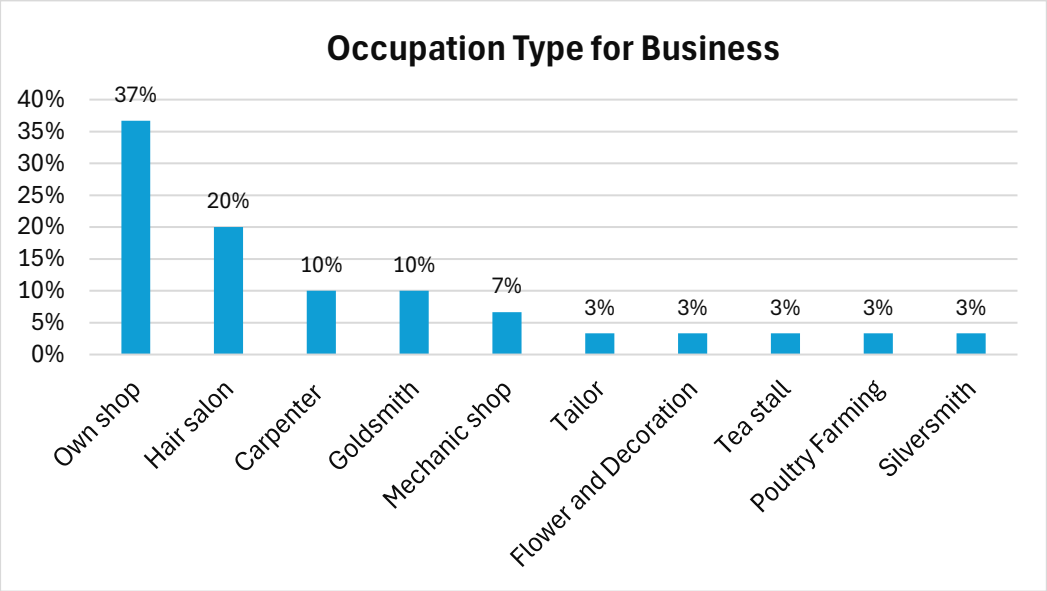

Figure 3-17 Occupation Type for Business

and poultry farming suggests limited diversification.

The average monthly income among business owners varies widely, with goldsmiths earning the highest at ₹1,20,000, followed by shop owners at ₹53,000 and hair salon operators at ₹28,833. Mechanic shop owners earn ₹17,500, poultry farmers ₹15,000, carpenters ₹8,667, and tea stall owners the lowest at ₹3,000. This disparity highlights differences in profitability, with high-value trades like goldsmithing generating substantial income, while small-scale businesses such as tea stalls and carpentry face financial constraints. Supporting business diversification and skill development could enhance income opportunities for small entrepreneurs.

3.2.3.3. Tertiary Sector

According to the survey, 7% of the working population is employed in the service sector. Among them, 64% work in the private sector, 19% are employed in government jobs, and 14% work as drivers. The average monthly income varies

across these occupations, with government employees earning ₹17,429, private sector workers receiving ₹13,957, and drivers earning ₹7,460.

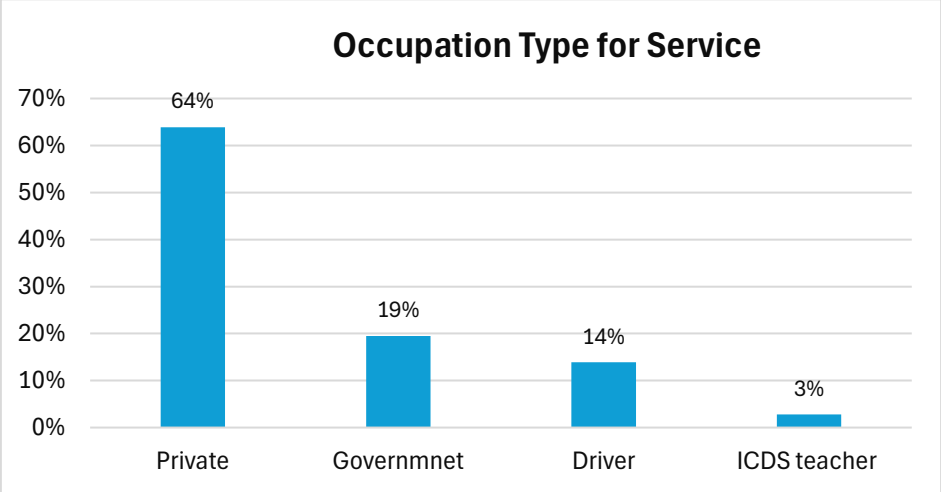

Figure 3-18 Occupation Type for Service

Source: Census on India,2011

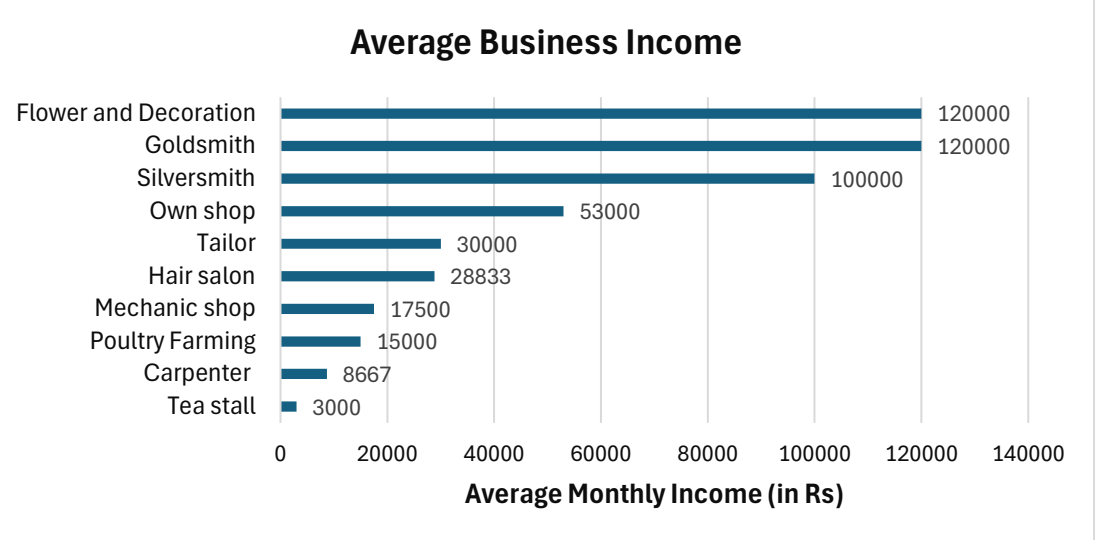

Figure 3-19 Average Business Income

Source: Census on India,2011

The income distribution within the service sector reveals significant variations based on job type. Government employees have the highest average earnings, reflecting job stability and structured pay scales. Private sector employees earn slightly less but still maintain a comparatively stable income. However, drivers earn the lowest at ₹7,460 per month, indicating financial vulnerability within this category.

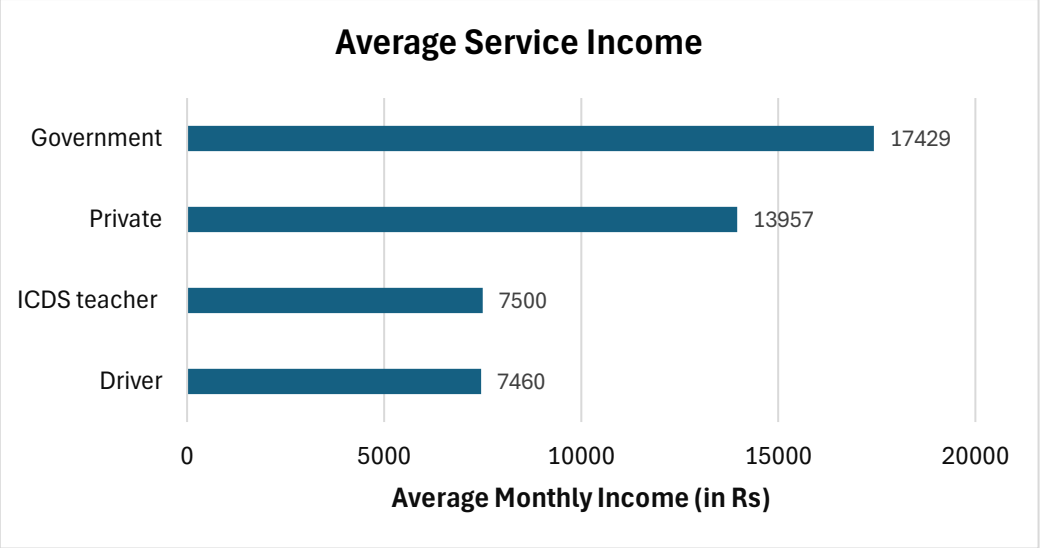

Figure 3-20 Average Service Income

Source: Census on India,2011

3.2.4. Workforce depending on the Economic activities outside the Gram Panchayats (nearby Urban Areas, Industrial Areas, SEZ, etc.) and interdependencies.

According to the survey on the working population, 78% of individuals are employed within the Gram Panchayat, while 9% commute to a nearby city and another 9% travel to neighbouring Gram Panchayats for work. The data indicates that a significant portion of the workforce seeks employment outside the Gram Panchayat, primarily due to limited local job opportunities, highlighting the issue of out-migration.

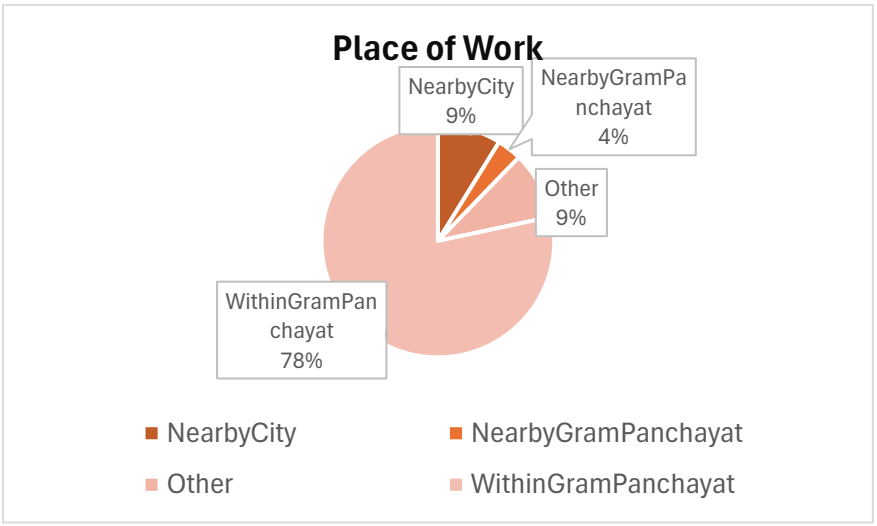

Figure 3-21 Place of Work

Source: Census on India,2011

3.2.5. Key Observations & Recommendations

3.2.5.1. Infrastructure Improvement

A **Skill Development Centre** should be established at the **cluster level** within Makrampur GP to enhance employability. Based on the assessment of nearby rural and urban areas, training programs can focus on:

- **Agricultural Skill Training**: Organic farming, crop diversification, and sustainable irrigation techniques.
- **Vocational Training**: Electricians, plumbers, tailoring, and handicrafts.
- **Industry-Specific Skills**: Factory work, carpentry, and masonry to align with regional employment opportunities.
- **Digital Literacy & Entrepreneurship**: Enabling youth and SHG members to participate in e-commerce and online marketplaces.

3.2.5.2. Facilitating Technology and Market Access

- **Agricultural Storage & Processing Units**: Establish a storage facility to reduce post-harvest losses and encourage farmers to grow diverse crops.
- **Market Linkages**: Strengthening SHGs and Farmer Producer Organizations (FPOs) to connect with larger markets and direct buyers.
- **E-commerce Platforms**: SHG and small businesses should be trained to access digital platforms for selling products like handicrafts, dairy, and agricultural produce
- **Technology in Agriculture**: Promote drip irrigation, solar pumps, and soil testing kits for better productivity.

3.2.5.3. Organization of the informal sector

- **Formalization of Small-Scale Industries**: Encourage registration and financial inclusion of informal businesses such as Sal leaf plate manufacturing, puffed rice production, and carpentry workshops.
- **Cooperative Societies**: Establish dairy, goat farming, and poultry cooperatives to ensure better pricing and sustainability.
- **Access to Microfinance**: Facilitate microcredit options for SHGs and small entrepreneurs to expand their businesses.

3.2.5.4. Adoption of a cluster-based approach

- **Agricultural Cluster**: Introduce a collective farming model with shared irrigation infrastructure and cold storage facilities.
- **Handicraft & Cottage Industry Cluster**: Support local artisans with improved marketing and product standardization.

3.2.5.5. Any Other

- **Promotion of Rural Tourism**: Leveraging cultural heritage and local craftsmanship to attract visitors.
- **Public Transport & Connectivity**: Enhancing transportation options for better access to regional markets and employment hubs.
- **Strengthening SHGs**: Providing financial literacy training and connecting SHGs to institutional buyers.

3.2.6. Key issues

3.2.6.1. How is the loss of fertile agricultural land due to unregulated development leading to food insecurity?

- **Unregulated development** has led to a reduction in cultivable land, impacting food security.
- **Mitigation Measures**:
  - Introduce **land zoning regulations** to protect farmland.
  - Encourage **agroforestry and mixed cropping** to improve soil health.

3.2.6.2. Other issues

- **Limited Irrigation Infrastructure**: High dependency on borewells and tubewells increases costs for small farmers.
- **Seasonal Employment in Agriculture & Construction**: Need for alternative livelihood options during off-season.
- **Lack of Veterinary Facilities**: Poor access to veterinary services restricts the growth of commercial livestock farming.
- **Inadequate Financial Awareness**: Many entrepreneurs lack knowledge about credit schemes and government support.

3.2.7. Identified Feasible & Bankable Projects/Activities which can help in the enhancement of Gram Panchayat Economy

1. **Agricultural Storage & Processing Unit**

- Facility for storing paddy, mustard, and potatoes.
- Mini rice mill and mustard oil extraction unit.

2. **Dairy & Poultry Cooperative Development**
   - Establish a **milk collection and chilling center**.
   - Promote commercial poultry and goat farming.

3. **Sal Leaf Plate Manufacturing Unit**
   - Value addition to the existing Sal leaf collection activity.
   - Direct employment for SHGs.

4. **Irrigation Infrastructure Expansion**
   - Solar pump installations and rainwater harvesting systems.
   - Repair and upgrade of the drainage channel from Khelar GP.

5. **Small-Scale Industrial Clusters**
   - Support local businesses in **carpentry, goldsmithing, and mechanic shops**.
   - Promote **handloom and handicrafts** through cluster-based production.

6. **Skill Development & Entrepreneurship Training Centre**
   - Focus on **youth employment training** and **SHG capacity-building**.
   - Partnership with **DDU-GKY and MSME schemes** for financial support.

7. **Rural Transport & Market Access Initiative**
   - Introducing **shared transport services** for farmers and small traders.
   - Strengthening **market linkages through local cooperatives**.

3.3. Social Profile

3.3.1. Education Facilities

3.3.1.1. Types of Education Facilities

Table 3-7 Education Facility assessment according to RADPFI guidelines

Type of School	Population 2011	Existing No. Facility (Census 2011)	Existing No. Facility (Report)	Required	Surplus/ Deficit
Pre-Primary School (Anganwadi)	22340	--	39	28	+9
Primary Schools		18	34	5	+29
High School With Primary		3	7	5	+2
College		0	1	0	--

Pre-Primary School (Anganwadi)

The Integrated Child Development Services (ICDS) guidelines stipulate that there should be one Anganwadi Center (AWC) for every 800 people. According to the 2011 Census, Makrampur Village has a population of 22,340. Based on this population, there should be 28 AWCs to serve the community adequately. However, currently, there are 39 AWCs in the village. There are sufficient ICDS centres in the village.

Primary Schools

As per the RADPFI Guidelines, Makrampur Gram Panchayat should have at least 5 primary schools to cater to the educational needs of its population. However, the reality surpasses this requirement as Makrampur GP hosts 34 government primary and nursery schools and 1 Private primary school. Despite the numerical adequacy, these schools' infrastructure and overall conditions are far from satisfactory. Many schools face inadequate infrastructure and poorly maintained buildings. These shortcomings hinder the delivery of quality education and affect the learning environment for the children. To address these issues, it is crucial to undertake significant improvements in the infrastructure and resources of these primary schools, ensuring they meet the educational standards and provide a conducive learning atmosphere.

High School with Primary

According to the RADPFI Guidelines, Makrampur Gram Panchayat should have at least 5 high schools with primary sections to serve the community's educational needs adequately. Fortunately, the village exceeds this requirement, with such institutions currently in place. These schools offer a continuum of education from primary to secondary levels, essential for maintaining educational consistency and reducing dropout rates as students transition from primary to high school. The infrastructure in many of these schools is inadequate, with limited laboratory facilities and a lack of libraries. Furthermore, the maintenance of the school buildings and facilities often falls short, impacting the overall learning environment.

College

Makrampur GP has a private B.Ed College. There are no other higher educational institutes in the Makrampur GP.

Figure 3-22 Existing Educational facilities

3.3.1.2. Key Observations

Educational facilities form the cornerstone of community development, especially in rural areas such as Makrampur Village. These facilities provide primary education and play a crucial role in shaping the community's future by empowering

the younger generation with knowledge and skills. According to the Final Project Report on Rural Spatial Planning for Makrampur Gram Panchayat of West Bengal compiled by IIT, the village has 21 government primary and nursery schools, one private primary school, and seven secondary/middle schools. However, the schools' infrastructure and

conditions are not very good. Apart from a private B.Ed. There is no other higher educational institute in the Makrampur GP. A few secondary/middle schools (3 in number) also require substantial improvement. The village lacks senior secondary schools and colleges, which limits higher education opportunities for the youth. Addressing these gaps is essential for fostering an environment conducive to learning and growth. The RADPFI guidelines provide standards for establishing and maintaining educational facilities, ensuring they effectively meet the population's needs.

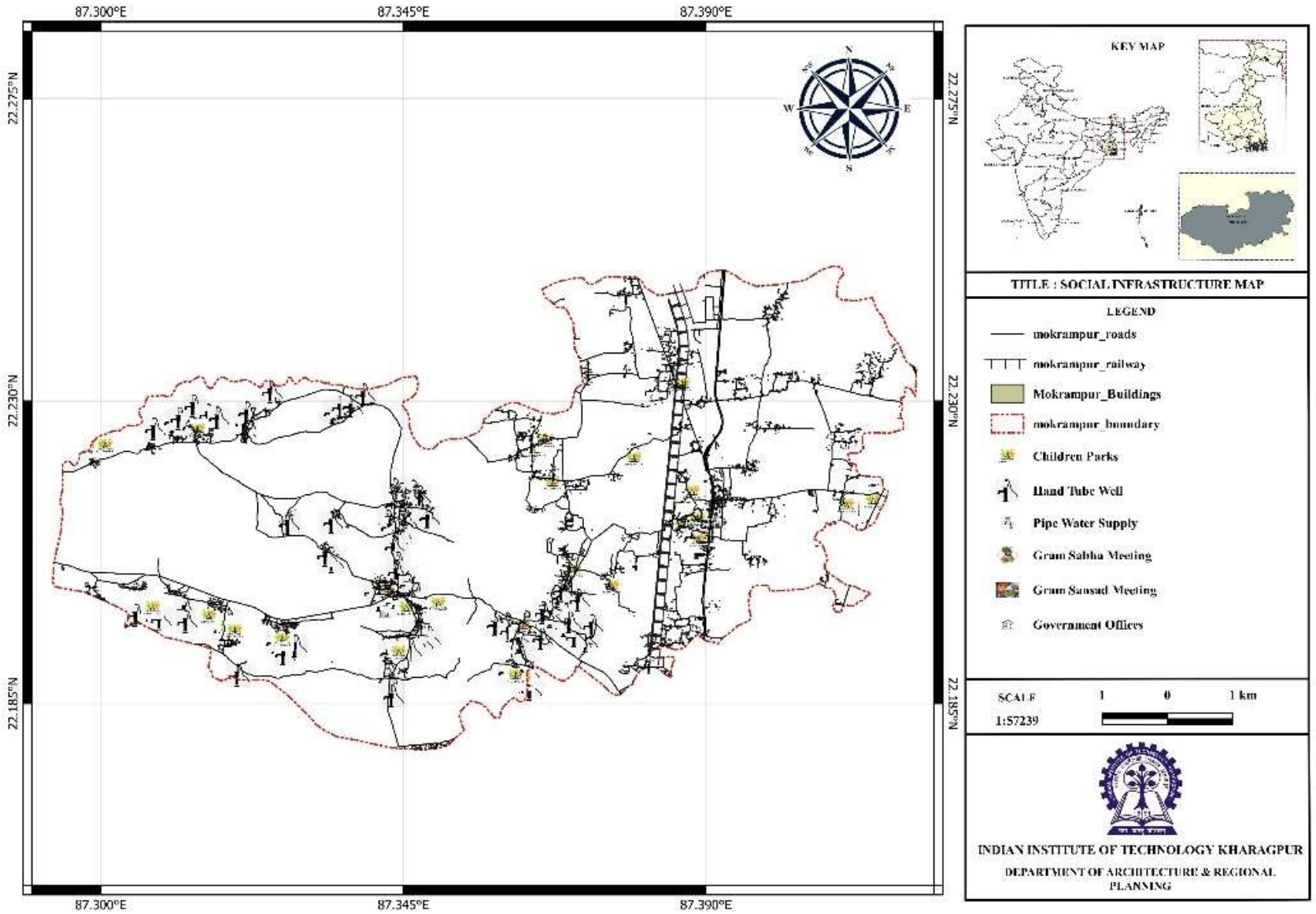

Figure 3-23 Social Infrastructure Map

3.3.1.2.1. Facilities that can be established at Cluster Level within GP based on the assessment of nearby areas (Rural & Urban)

Based on the current educational infrastructure in Makrampur Gram Panchayat and the assessment of educational gaps, certain facilities can be strategically planned at the cluster level to improve accessibility and quality of education. Given the existing surplus of Anganwadi Centres and primary schools, the focus should shift towards improving quality and expanding secondary and higher education facilities.

- **Vocational Training Centre**: To equip youth with employable skills, a vocational training institute focusing on agriculture, small-scale industries, and basic digital literacy can be introduced. This centre could serve students from Makrampur and neighbouring GPs.
- **Model Primary School with Upgraded Infrastructure**: Despite having sufficient primary schools, the infrastructure remains poor. A model school with adequate classrooms, drinking water, sanitation, library, and digital learning tools can be developed at the cluster level to set a standard for others.
- **Satellite College or Community College**: Since the GP only has a private B.Ed college, there is a need for a general higher education institution. A satellite campus or community college affiliated with a nearby urban institution could offer general degree and diploma courses for local students.
- **Teacher Training Resource Centre**: To improve educational outcomes, a cluster-level teacher training and resource centre can be planned. It would support professional development for teachers from multiple villages, promoting better pedagogy and classroom practices.

3.3.1.3. Identified Issues

Based on the assessment of educational facilities in Makrampur GP, several critical issues have been identified:

- **Lack of Senior Secondary and General Higher Education Institutions**: The absence of senior secondary schools and general degree colleges limits educational opportunities beyond secondary level, compelling students to travel long distances or discontinue studies.
- **Poor Infrastructure in Existing Schools**: Many primary and high schools lack basic infrastructure such as proper classrooms, toilets, libraries, and

laboratories. This negatively affects the quality of education and learning environment.

- **Inequitable Quality Despite Numerical Adequacy**: Although there is a surplus of primary and Anganwadi centres, the quality of education and infrastructure is not uniform across facilities, leading to disparities in educational outcomes.
- **Inadequate Support Services**: Schools often lack support services such as midday meals, healthcare check-ups, and special educators for differently abled children, which are essential for holistic development.
- **Limited Access to Skill Development**: The absence of vocational or skill-based training centres restricts the youth's ability to gain employment-oriented skills, especially in a rural setting where employment opportunities are limited.
- **Insufficient Teacher Capacity Building**: There is a lack of structured training and capacity-building programs for teachers, which impacts the delivery of effective and engaging education.

3.3.2. Healthcare Facilities

Health facilities are vital for ensuring the well-being and development of any community. They provide essential services such as medical care, preventive healthcare, and health education, contributing to the overall quality of life. In Makrampur Village, the status of health facilities reflects a mixed scenario in terms of availability and adequacy.

3.3.2.1. Types of Healthcare Facilities

Table 3-8 Health Facility assessment according to RADPFI guidelines

Type of Facility	Population of 2011	Existing No. Facility (Census 2011)	Existing No. Facility (Report)	Required	Surplus/ Deficit
Sub- Health Centre	22340	0	4	-5	-1
Primary Health Center (PHC)		--	1	1	Adequate
Community Health Center (CHC)		--	0	0	--

Maternity & Child Welfare Center		--	0	1	-1

- **Sub Health Centre:** A Sub-Health Centre (SHC) is the first point of contact between the primary healthcare system and the community. It is crucial in delivering essential health services and implementing national health programs. Substantial population in the GP have received generic vaccinations through health centers in the GP. As per RADPFI one sub health required for a 5000 population. So, gram panchayat needs 4 sub health centers. Presently there are 4 SHCs in gram panchayat means, there is deficit of one SHS. Present SHCs lacks in accessibility and quality of healthcare facilities.
- **Maternity and Child Welfare Center ;** As per the standards, one such center is required for a population of 15,000 people, which means, with 22340 of population total 1 center is required in the village. Currently, there is no such center located in the village.

- **Primary Health Center:** As per the Indian Public Health Standards (by Ministry of Health and Family Welfare (MoHFW)), one sub-center is required for a population 30,000 people, which means, with 22340 of population total 1 PHC is required in the village. Currently, there is 1 PHC located in the Makrampur village.

- **Community Sub-Center:** As per the Indian Public Health Standards (by Ministry of Health and Family Welfare (MoHFW)), one Community Center (CHC) is required for a population 1 lakh people, which means, with 22340 of population, presence of the CHC within the panchayat jurisdiction is not required. Currently, no CHC is located in the village.

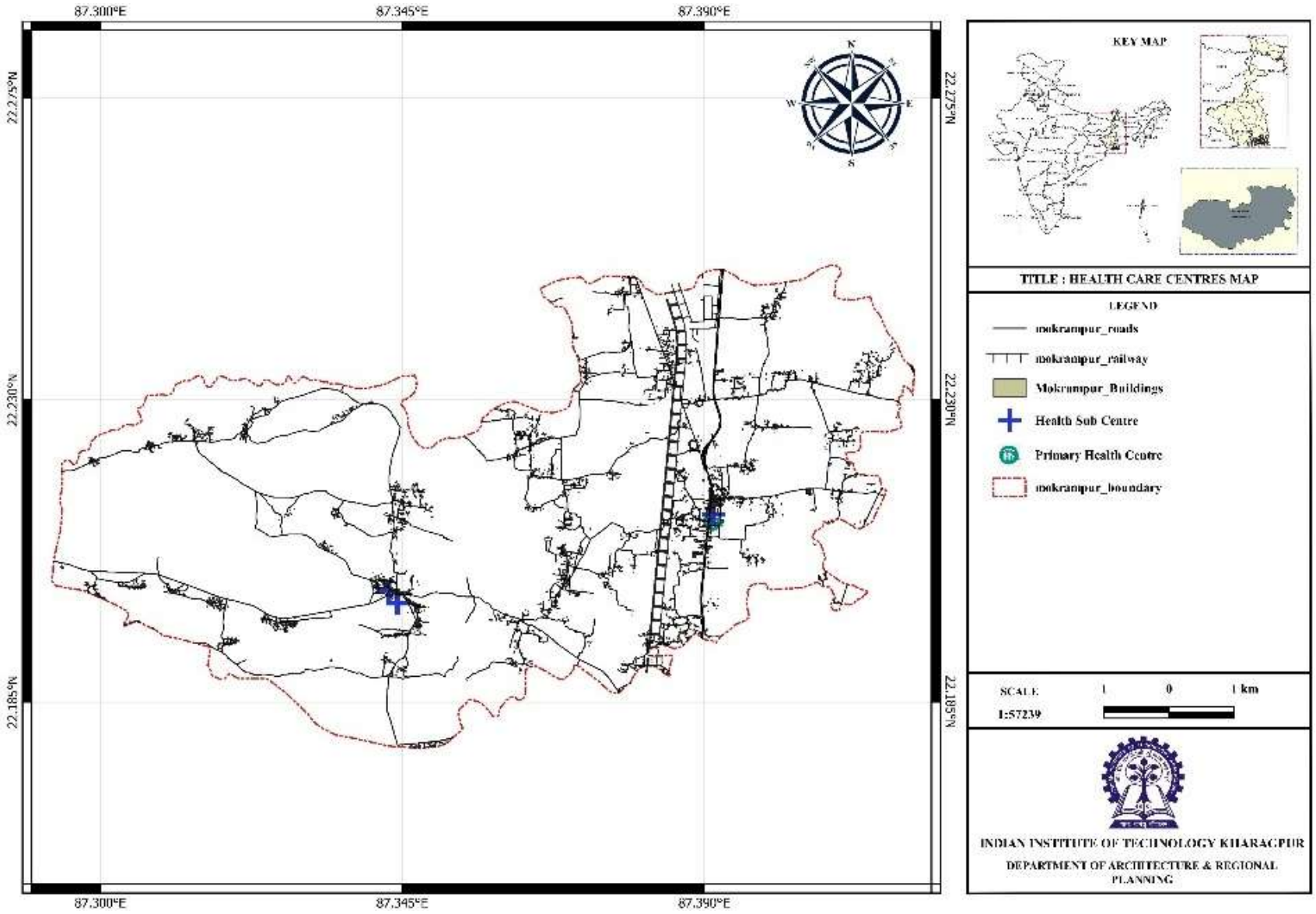

Figure 3-24 Health Care Centres Map

3.3.2.2. Key Observations

As per 450 household survey, 53% of household visit the hospital occasionally while 13 % of household regularly visit the hospital. About 51 % of households cited availability of hospitals is a major barrier for health facilities while 26 % of households feel cost is major barrier, 19% of household said that transportation is major barrier for health facility. Only 24 % of households opted for health insurance.

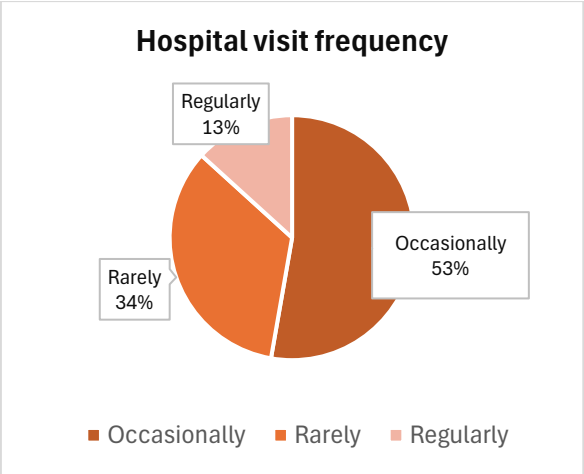

Figure 3-25 Hospital visit frequency

As per survey, for 81 % household relies on primary health center (PHC) for emergency health services highlighting the importance of PHC in gram panchayat. While accessibility for health facility remains a concern as for 28 % household have to travel 5-10km for nearest health facility and for 14% household it is about 15-20km travel distance.

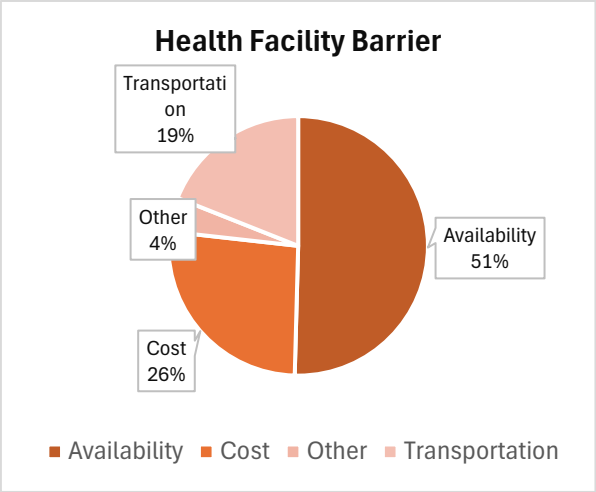

Figure 3-26 Health Facility Barrier

As per survey, for 81 % household relies on primary health center (PHC) for emergency health services highlighting the importance of PHC in gram panchayat. While accessibility for health facility remains a concern as for 28 % household have to travel 5-10km for nearest health facility and for 14% household it is about 15-20km travel distance.

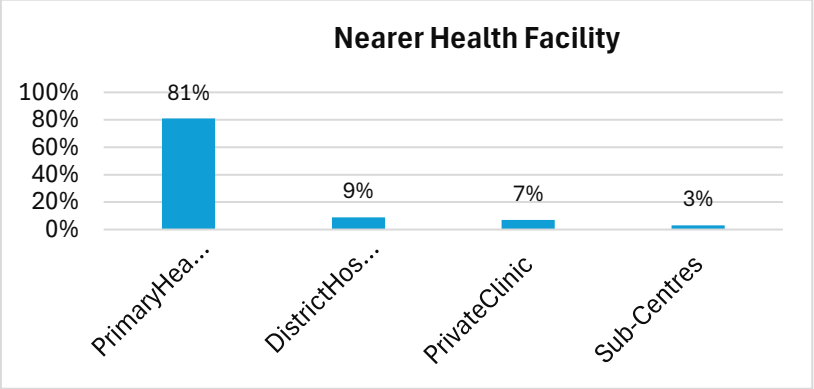

Figure 3-27 Nearer Health Facility

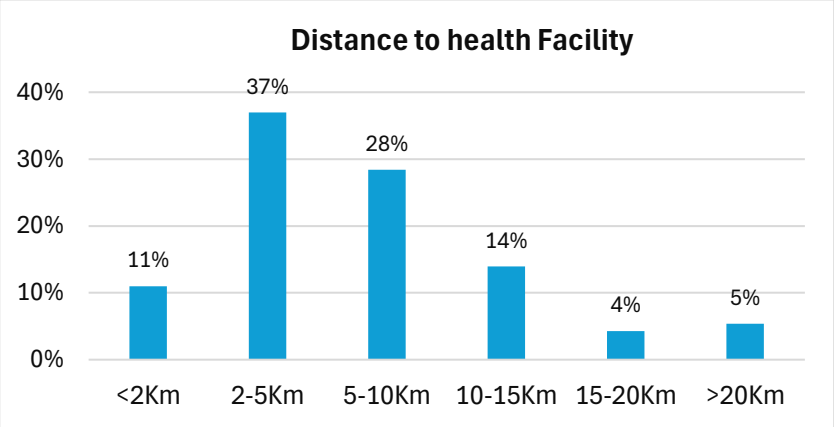

Figure 3-28 Distance to health facility

3.3.2.2.1. Facilities that can be established at Cluster Level within GP based on the assessment of nearby areas (Rural & Urban)

Based on the healthcare facility assessment of Makrampur Gram Panchayat and considering the requirements as per RADPFI and IPHS guidelines, several cluster-level interventions can be planned to improve healthcare accessibility and service delivery:

- **Upgraded Sub-Health Centres (SHCs)**: Although four SHCs currently exist in the GP, there is still a shortfall of one SHC. Additionally, the existing SHCs lack adequate facilities and are not easily accessible to all residents. A cluster-based plan should focus on upgrading these SHCs with essential medical supplies, trained staff, and improved infrastructure to cater to the surrounding rural areas.

- **Establishment of Maternity and Child Welfare Centre**: There is a significant need for a dedicated Maternity and Child Welfare Centre in the GP. A cluster-level centre serving Makrampur and nearby villages would address maternal and child health, immunization, and postnatal care gaps.

- **Mobile Health Units**: Given that a significant portion of the population travels over 5-10 km for basic health services, mobile health units can be introduced to serve remote areas on a regular basis. These units can provide basic diagnostics, immunization, and referral services.

- **Emergency Transport and Referral Facility**: To reduce the burden of long-distance travel for critical care, a cluster-level ambulance service or patient transport system can be introduced, linking SHCs with the PHC and the nearest CHC in neighbouring blocks.

- **Trauma Care Centre**: Makrampur GP is located along a National Highway, making it susceptible to frequent road accidents. However, there is currently no trauma or emergency care hospital in the vicinity. A trauma care centre at the cluster level is essential to provide immediate medical response and stabilize patients during emergencies, especially in the event of highway accidents.

3.3.2.3. Identified Issues

The health infrastructure in Makrampur GP reveals critical gaps in both service provision and facility accessibility. Key issues identified are as follows:

- **Shortfall in Sub-Health Centres**: While the GP requires five SHCs as per the population norms, only four are currently operational. Furthermore, the quality and accessibility of existing SHCs are poor, reducing their effectiveness.

- **Absence of Maternity and Child Welfare Facilities**: There is no dedicated facility for maternal and child healthcare in the GP, posing a risk to women and young children, especially during childbirth and early development stages.

- **Accessibility Barriers**: A significant portion of the population (42%) travels more than 5 km to access healthcare, and 14% of households report travelling over 15 km. This distance is a major deterrent to timely medical intervention.

- **Low Health Insurance Coverage**: Only 24% of households have health insurance, which limits financial protection and access to better healthcare facilities.

- **Cost and Transportation Challenges**: Apart from availability, 26% of households cite cost, and 19% cite transportation as major barriers to accessing healthcare services. This indicates systemic inadequacies in affordable and accessible health provision.

- **High Dependence on PHC**: With 81% of households depending on the Primary Health Centre for emergency services, it becomes evident that the PHC is under pressure and must be equipped with better facilities and staff to handle the demand.

- **Lack of Trauma and Emergency Care Facilities**: Makrampur GP is located along a National Highway, increasing the risk of road traffic accidents. However, there is no trauma or emergency hospital in the area. The absence of a trauma care centre severely limits the community's ability to respond to critical injuries and medical emergencies, especially those resulting from highway incidents.

3.3.3. Fire Fighting Services

3.3.3.1. Types of Fire Fighting Facilities

Table 3-9 Types of Fire Fighting Facilities

Category	Population Served per unit (As per RADPFI)	Closest Facility	Surplus/ Deficit
Fire Station	2 lakh population or 10 Km Radius	Kharagpur Fire Brigade, 17.1 Km away	0

		Sabang Fire Station, 24.7 Km away Medinipur Fire Station, 29.2 Km away Egra Fire Station, 50.9 Km away Jhargram Fire Station, 72 Km away	

3.3.3.2. Key Observations

Kharagpur Fire Station is the closest firefighting service available near the GP. Although it is outside the 10 km radius norm, however, it is well within the limits of 2 lakh population served.

3.3.4. Socio-Cultural Facilities (Parks, Grounds, Recreational Areas, etc.)

3.3.4.1. Types of Socio-Cultural Facilities

Open Space/Parks

As per RADPFI guidelines one Open Space/Parks is required for every 5000 of population. The panchayat has no Parks as per Census of India, 2011. As per standards, 4 Open Space/Parks are required, which means panchayat has deficit of 4 Open Space/Parks.

Cremation Ground

As per RADPFI guidelines one Cremation Ground is required for every 5000 of population. The panchayat has 2 Cremation Ground at present. As per standards, 4 Cremation Ground are required, which means panchayat has deficit of 2 Cremation Ground.

3.3.4.2. Key Observations

Socio-cultural facilities are essential for promoting community well-being, recreation, and cultural cohesion in rural areas. In Makrampur GP, there is a clear lack of adequate socio-cultural infrastructure. Limited availability of parks, absence of community centres, and shortage of cremation grounds are major constraints. The existing open spaces, if any, are not well-planned or maintained, and lack basic amenities such as seating, lighting, and pathways.

Due to the lack of formal recreational spaces, children and youth often resort to using roadsides or informal grounds, which can be unsafe and unstructured. The absence of a dedicated space for cultural events or gatherings also restricts the celebration of local traditions and communal interactions. Furthermore, women and elderly residents have limited access to safe, accessible public spaces for relaxation and socialising.

3.3.4.2.1. Facilities that can be established at Cluster Level within GP based on the assessment of nearby areas

- **Multi-purpose Community Park**: A central park within the GP that includes play areas, walking paths, and seating spaces can serve the entire population, promoting physical activity and mental well-being.

- **Cultural and Recreational Centre**: A common centre equipped with a hall, library, and space for indoor games and local gatherings would help in organizing social and cultural activities, especially for youth and women.

- **Upgraded Cremation Facilities**: Cluster-level planning should aim to develop cremation grounds with improved amenities, ensuring accessibility, environmental safety, and dignity in the performance of last rites.

- **Public Open Spaces and Greens**: Development of pocket parks or conversion of vacant government land into green spaces across different settlements within the GP will ensure equitable distribution and promote inclusive access to recreational areas.

3.3.4.3. Identified Issues

- **Deficit of Parks and Open Spaces**: The required number of parks is not met, and the existing open spaces lack basic infrastructure and usability features.

- **Inadequate Cremation Grounds**: A shortfall of cremation grounds has been observed, limiting the capacity to conduct last rites respectfully and efficiently.

- **Absence of Cultural and Recreational Infrastructure**: There are no structured community halls or centres for cultural and recreational purposes.

- **Poor Maintenance and Accessibility**: Existing facilities are often poorly maintained, not universally accessible, and lack lighting, seating, and safety features.

3.3.5. Panchayat Bhawan

3.3.5.1. Panchayat Bhawan Facilities

Community Hall/centre

As per RADPFI guidelines one community Hall is required for every 5000 of population. The panchayat has 1 community hall at Makrampur. As per standards, 4 community halls are required, which means panchayat has deficit of 3 community hall.

Samsads/Booth

Makrampur gram panchayat have 15 Samsads/Booths which serve as key locations for democratic processes, public consultations, and community meetings.

3.3.5.2. Key Observations

Panchayat Bhawan acts as the administrative and community hub of the Gram Panchayat. Makrampur GP has one community hall located at the Panchayat Bhawan, which is used for meetings, public programs, and administrative functions. However, as per RADPFI guidelines, four community halls are required based on the population size. This indicates a significant gap in availability, limiting accessibility for decentralized meetings and public activities in different parts of the panchayat.

Additionally, the presence of 15 Samsads/Booths provides a localized platform for community participation, public consultations, and electoral processes. These booths help facilitate governance at the micro level, although they are often underutilized due to lack of infrastructure or proper space for meetings.

3.3.5.3. Identified Issues

- **Deficit of Community Halls**: With only one community hall available, there is a shortfall of three halls, affecting the reach and decentralization of public services and community gatherings.

- **Over-dependence on Panchayat Bhawan**: The centralization of all major activities at the Panchayat Bhawan leads to overcrowding and restricts wider participation from remote habitations.

- **Lack of Basic Amenities**: Existing community spaces often lack furniture, lighting, water supply, and sanitation, reducing their usability and comfort.

3.3.6. Sports Facilities

3.3.6.1. Types of Sports Facilities

Playgrounds/Ground for Fair & Festivals

As per RADPFI guidelines one Playgrounds/Ground for Fair & Festivals is required for every 5000 of population. The panchayat has 4 Playgrounds/Ground for Fair & Festivals at present. As per standards, 4 Playgrounds/Ground for Fair & Festivals are required, which means panchayat has adequate Playgrounds/Ground for Fair & Festivals.

3.3.7. Financial Facilities (Banks, ATMs, etc.)

3.3.7.1. Types of Financial Facilities

Financial services are provided by a single bank, which caters to the entire population's banking needs.

3.3.7.2. Key Observations

Makrampur GP has only one bank branch serving the entire population, leading to overcrowding and limited access. There are no ATMs in the panchayat, making cash withdrawals difficult. Many residents depend on nearby towns for banking needs. Digital banking and Business Correspondent services are minimal, and financial awareness among residents remains low.

3.3.7.3. Identified Issues

- **Insufficient Banking Infrastructure**: A single bank is inadequate to serve a population of over 22,000, leading to long queues and limited service coverage.
- **Lack of ATMs**: The absence of ATMs in the GP forces residents to travel to nearby towns for basic banking transactions, especially cash withdrawals.
- **Limited Financial Literacy**: A significant section of the population lacks awareness and understanding of banking services, digital transactions, and financial schemes.
- **Inadequate Access to Credit and Insurance**: Many villagers face difficulties in accessing small loans, agricultural credit, and insurance due to procedural complexities and limited outreach.

3.4. Heritage, Cultural and Tourism Profile

3.4.1. Heritage Profile

3.4.1.1. Status of the Heritage

Historical Site of British-Era Bombing

There are accounts of a historical site within Makrampur GP where a bombing occurred during the British period.

Belti old queen palace

The Belti Old Queen Palace, located in Makrampur Gram Panchayat of Narayangarh Block, Paschim Medinipur, West Bengal, is a historical landmark with significant cultural value. Situated near the Keleghai River and the Belti Keleghai Bridge, the palace lies in a semi-rural setting surrounded by agricultural fields, scattered settlements, and water bodies. The area retains its rustic charm, and the nearby ponds and greenery offer a serene and ecologically rich environment. The presence of this heritage structure amidst natural beauty presents an opportunity for cultural preservation and eco-tourism development.

Figure 3-29 Belti old queen palace

3.4.1.2. Key Observations

3.4.1.3. Identified Issues

3.4.2. Cultural Profile

3.4.2.1. Any changes observed in the Cultural Profile

3.4.2.2. Key Observations

The cultural profile of Makrampur Gram Panchayat reveals a diverse caste composition. Scheduled Tribes (ST) constitute the largest segment of the population, accounting for 45%, predominantly comprising Lodha, Munda, and Bhumij communities. General category individuals represent 26% of the population, while Scheduled Castes (SC) comprise 23%, largely represented by Dome, Tati, and Bhagal communities. Other Backward Classes (OBC) make up a smaller portion, accounting for 6% of the total population. This demographic distribution highlights the need for inclusive development strategies that address the specific needs and challenges faced by each caste group within the Gram Panchayat.

Bengali serves as the primary language of communication, while Santali is also widely spoken, particularly among the tribal communities.

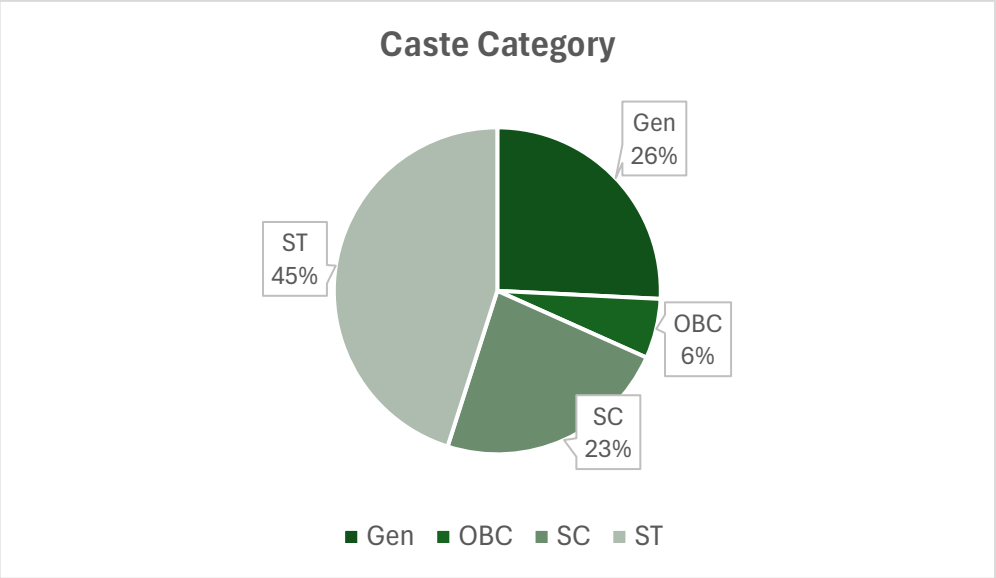

Figure 3-30 Caste Category

Table 3-10 Cultural profile

% of the population following Religion	caste distribution (OBC 6%, General 26%, ST 45%, SC 23%)
Type of Castes	SC (Dome, Tati, Bhagal); ST (Lodha, Munda, Bhumij) ;
Languages Spoken	Bengali
Tourist Centers	No
Monument Places of Heritage	No
Pilgrimage Centers	No
Source: Primary Survey, Household Survey and FGDs	

3.4.2.3. Identified Issues

3.4.3. Tourism Spots/Facilities

3.4.3.1. Major Tourist Spots

While Makrampur GP itself may not host prominent tourist sites, nearby attractions in Paschim Medinipur district.

3.4.3.2. Tourist Arrivals Season

Tourist visits to Paschim Medinipur are generally higher during cooler months, from October to March, aligning with favorable weather conditions and local festivals.

3.4.3.3. Existing tourist-supported infrastructure

The district offers basic infrastructure, including local accommodations and eateries near major tourist spots. However, Makrampur GP itself lacks dedicated tourist facilities, indicating a need for development to support potential tourism.

3.4.3.4. Fairs and Festivals

The community actively participates in festivals such as Tusu Parab, coinciding with Makar Sankranti. This festival is marked by the creation of Tusu deity idols and is celebrated with traditional songs and dances, reflecting the community's rich cultural tapestry.

- **Gajan Festival:** Observed during Chaitra Sankranti (end of the Bengali year), featuring traditional rituals and performances.
- **Poush Mela:** Held in nearby places, starting in months of December to January, showcasing Bengali culture and crafts.

3.4.3.5. Key Observations

3.4.3.5.1. Bigger Facilities that can be established at Cluster Level within GP based on the assessment of nearby areas (Rural & Urban)

3.4.3.6. Identified Issues

- **Infrastructure Deficiency:** Limited accommodation and dining facilities within Makrampur GP may deter extended tourist stays.
- **Connectivity Challenges:** Inadequate transportation links can hinder tourist access to and within the GP.
- **Cultural Preservation Needs:** Without active preservation efforts, indigenous art forms and traditions risk decline, reducing cultural tourism appeal.

Addressing these issues through targeted infrastructure development, improved connectivity, and cultural preservation initiatives can enhance Makrampur GP's tourism potential.

3.5. Physical Infrastructure Profile

3.5.1. Road Network & Transportation System (including Inter -- Intra GP Transportation)

3.5.1.1. Road Hierarchy

The prescribed minimum widths for different types of village roads (R1 to R4) are largely adhered to in Makrampur GP, though there are slight deviations in some cases. For link roads (R1), the prescribed and existing minimum width both align at 6.0 meters, ensuring proper connectivity between villages and highways. However, for major through roads (R2), the existing width is 6 meters, which falls short of the prescribed 7.5 meters. These roads are critical as they serve as main village roads with drainage systems on both sides. Similarly, minor through roads (R3) have an existing width of 4 meters against the prescribed 4.5 meters, and minor through lanes (R4) measure 2.5 meters instead of the recommended 3.75 meters.

Table 3-11 Norms for Village Roads

Village Road Type	Road Description	Prescribed Minimum width (in meters)	Existing Minimum width in GP (in meters)	Functions
R1	Link Roads	6.0	6	Inter village, ODR, highways connectors.
R2	Major Through Roads	7.5	6	Main village roads with drain on both sides to facilitate drainage system of the village
R3	Minor Through Roads	4.5	4	Other village roads
R4	Minor Through Lanes	3.75	2.5	Village lanes

(Source: Draft NBC, Doc: CED 46 (8064) WC, Nov 2015; Rural Road Manual, 2002, Indian Road Congress)

Table 3-12 Roadway widths for single lane and two lanes

Sr. No.	Road Classification	Prescribed Roadway Width (in m.)	Existing Roadway Width (in m.)
1	National and State Highways (single/two lane	12.0	12
2	Major District Roads (single/two lane)	9.0	9.0
3	Other District Road i) Single lane ii) Two lane	7.5	4 7

		9.0	
4	Village Roads (single lane)	7.5	3

The provided data compares the standard roadway widths for different road classifications with their existing roadway widths. For National and State Highways, the prescribed width is 12 meters, which matches the existing width, indicating compliance with standards for these high-traffic roads. Similarly, Major District Roads maintain a standard width of 9 meters, aligning perfectly with the current roadway width, suggesting adequate infrastructure for district-level connectivity.

However, discrepancies are observed in the case of Other District Roads and Village Roads. For single-lane Other District Roads, the standard width is 7.5 meters, but the existing width is only 7 meters, showing a slight shortfall that could impact traffic flow and safety. Two-lane Other District Roads meet the standard width of 9 meters, ensuring proper functionality for higher traffic volumes. On the other hand, Village Roads exhibit significant deviation from standards; while the prescribed width is 7.5 meters for single-lane roads, the existing width is only 3 meters. This substantial gap highlights a need for improvement to support rural accessibility and accommodate future growth.

3.5.1.2. Important Junctions

The spatial connectivity and transport structure of Makrampur Gram Panchayat are significantly defined by two critical traffic junctions along NH-16 (Chennai-Kolkata Highway):

1. Makrampur Traffic Guard Junction
2. Narayangarh PS Traffic Post Junction

These locations serve as essential mobility nodes for both intra-Panchayat movement and linkages with external economic corridors. However, despite their strategic roles, both junctions present infrastructural challenges and pedestrian safety concerns.

1. Makrampur Traffic Guard Junction

Located directly on NH-16, this junction serves as the primary entry and exit point for daily commuters, traders, SHG members, and residents accessing commercial and service establishments.

Site Characteristics

- High pedestrian footfall throughout the day.
- Dense surrounding development including retail outlets, banks, sweet shops, hotels, residencies and pharmacies.

- Uncontrolled highway access from both sides of the junction.

Figure 3-31 Makrampur Traffic Guard Junction

Source: Google Earth Pro

Identified Issues.

- Absence of pedestrian facilities such as footbridges, zebra crossings, or controlled signals.
- Unregulated crossing behaviour by villagers, resulting in frequent pedestrian accidents and near-misses.
- Service roads exist but remain underutilized for crossing due to preference for direct highway crossing.
- No median opening control system or protective barriers for slow-moving traffic.

Implication.

The lack of traffic calming infrastructure and behavioural interventions places daily road users at high safety risk, especially the elderly, children, and women commuting to services and shops.

2. Narayangarh PS Traffic Post Junction

Located further south along NH-16 near the Kharagpur-Chiur Road, this junction supports connectivity between agricultural hamlets, market access points, and local service hubs.

Site Characteristics

- Lower congestion compared to Makrampur junction.

- Adjoining commercial establishments include Raju Trader, Prabir Store, and Bharat Hotel.
- Provides access to nearby pond clusters, fields, and village settlements.

Figure 3-32 Narayangarh PS Traffic Post Junction

Source: Google Earth Pro

Identified Observations

- Better highway geometry with wider turning radii and defined access ramps.
- Predominance of slow-speed vehicles like tractors and bullock carts due to agricultural proximity.
- Steady but moderate footfall of traders, farmers, and transport workers.

While both junctions are essential to the Panchayat's transport and economic functioning, the Makrampur Traffic Guard Junction warrants priority safety interventions.

Recommendations include:

- Installation of pedestrian overbridges or signalized crossings.
- Median control systems and restricted access openings.
- Behavioural awareness drives on safe crossing practices.
- Optimization of service road usage through signage and route design.

These improvements will enhance mobility equity, reduce risk, and support the Gram Panchayat's goal of creating safe and inclusive public infrastructure.

3.5.1.3. Bridges, Flyovers and interchanges

Makrampur GP has a critical requirement for bridge infrastructure to ensure year-round connectivity.

- Sitli-Murakata Bridge: A proposed bridge between Sitli and Murakata will reduce travel distance from 7 km to 2 km, facilitating school and market access.

- Keleghai River Bridge near Belti: This bridge serves as a vital link between Makrampur Gram Panchayat and surrounding villages such as Binai, Belti, and Dhangiri. However, during the monsoon season, the bridge frequently becomes submerged, leading to the isolation of these villages and disrupting access to the GP office and essential services.

Figure 3-33 Belti Keleghai Bridge

Source: Google Earth Pro

- Kelgai River Bridge (Dhangari): Required to connect Dhangiri with Kharagpur. At present, villagers cross the river on foot during summer, but in the rainy season, they face severe access issues, increasing vulnerability for daily wage workers commuting to Salua and Kharagpur.

3.5.1.4. Intermediate Public Transport

Public transportation in the Gram Panchayat is minimal, with shared autos being the sole option. These autos operate at intervals of 1-2 hours, depending on passenger demand, and cease operations after 7.30 - 8.30 PM, leaving residents without reliable transport during late hours. The absence of bus infrastructure further worsens the

situation, forcing residents to rely on private transport, which is often costly. Bicycles and motorbikes dominate private transportation, while autos and totos are primarily reserved for emergencies with higher cost. Women depend heavily on bicycles due to the lack of affordable and dependable alternatives.

In Makrampur Gram Panchayat, bicycles are the most utilized mode, accounting for 30% of the transportation. E-rickshaws are the second most common, making up 17%. Following this, buses are used by 15% of the population, while motorcycles account for 12%. Cycle rickshaws are used by 10% of the population. Shared autos are used by 7% of the population, while walking accounts for 5%. Finally, autos are the least utilized mode of transportation for healthcare, with only 4% of the population using them.

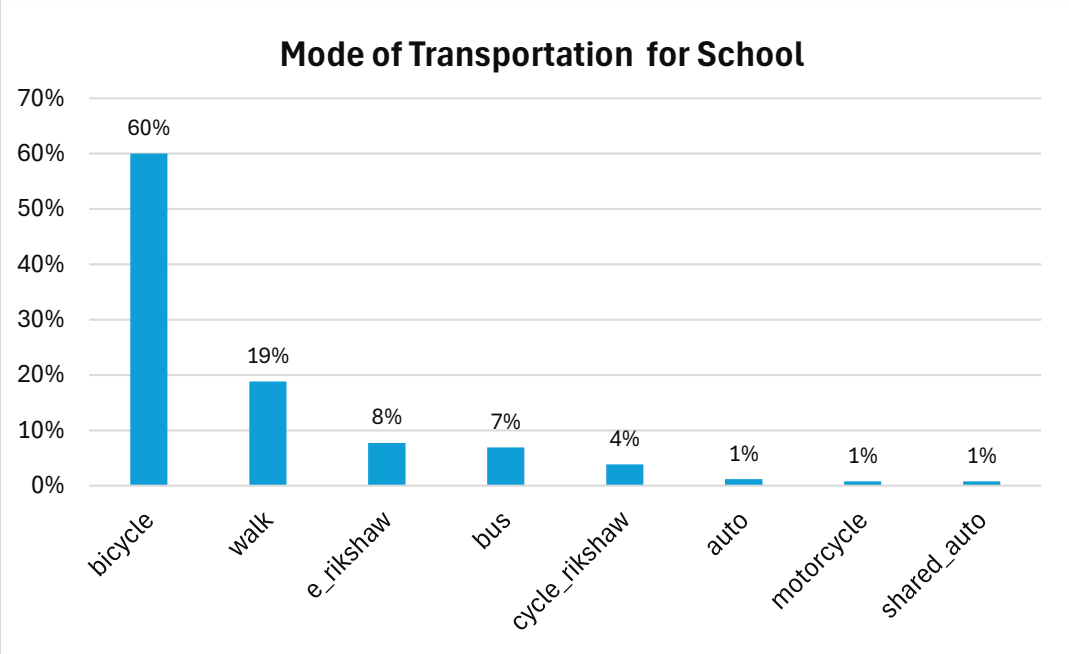

Figure 3-34 Mode of Transportation for School

Bicycles are the most prevalent mode, accounting for 60% of students. Walking is the second most common mode, with 19% of students using it. E-rickshaws and buses are used by 8% and 7% of students, respectively. Cycle rickshaws account for 4%, while auto-rickshaws, motorcycles, and shared autos are each used by only 1% of the student population.

3.5.1.5. Traffic Volume, Characteristics of Traffic and Transportation

3.5.1.6. Existing Transportation Infrastructure

While PMGSY roads have improved connectivity with adjacent areas, many internal roads remain kutcha or semi-pucca. Lack of proper bus stands, footpaths, and road signage limits accessibility and road safety. Dhangari village remains largely disconnected due to forest buffer and poor road conditions.

3.5.1.7. Freight Movement

There are no designated freight routes in the village, and trucks are the sole means of accessing the Krishi Mandi for loading and unloading agricultural produce. However, a road connecting the village to the nearby highway has been constructed under the Pradhan Mantri Gram Sadak Yojana (PMGSY), facilitating improved connectivity.

3.5.1.8. Key observations

- Roads are distributed equally across all villages, leading to fragmented and uncoordinated development.
- Forest-edge villages like Dhangari are severely underserved.
- Seasonal connectivity issues due to lack of bridges and all-weather roads.
- Women and students rely heavily on bicycles, but safety and comfort are compromised due to poor road and transport infrastructure.

3.5.1.9. Demand assessment for 2035 (as per RADPFI Guidelines)

By 2035, the GP will require the following:

- Upgradation of village roads to meet R1-R4 standards.
- Construction of Sitli-Murakata and Kelghai River bridges.
- Development of compact bus stops with seating, solar lights, and shelter.
- Provision of a designated public transport system with better frequency.
- Strengthening internal road networks, particularly in forest-adjacent villages like Dhangari.

3.5.1.10. Identified Issues

- Inadequate and uncoordinated road funding distribution.
- Poor last-mile connectivity in remote villages.
- Lack of bridge infrastructure causing seasonal inaccessibility.
- Absence of formal public transport and infrastructure.
- High cost of shared transportation.
- No provisions for vulnerable users like schoolchildren and women commuters.

3.5.2. Water Supply

3.5.2.1. Key observations

The water supply infrastructure in Makrampur Gram Panchayat relies primarily on public taps, submersible pumps, and handpumps. The primary water supply agency is the Panchayat, supported by the Jal Jeevan Mission and potentially other state government agencies.

Table 3-13 Water supply infrastructure

Capacity of Sump	5
No of ESR	7
Total No. Household (as on 01/04/2023, as per JJM report)	5869
No. of tap connections provided under JJM	1407
Water supply timing	4-5 hours a day
Age of network	ongoing
No. of Borewells	-
Source: Primary Survey, JJM report	

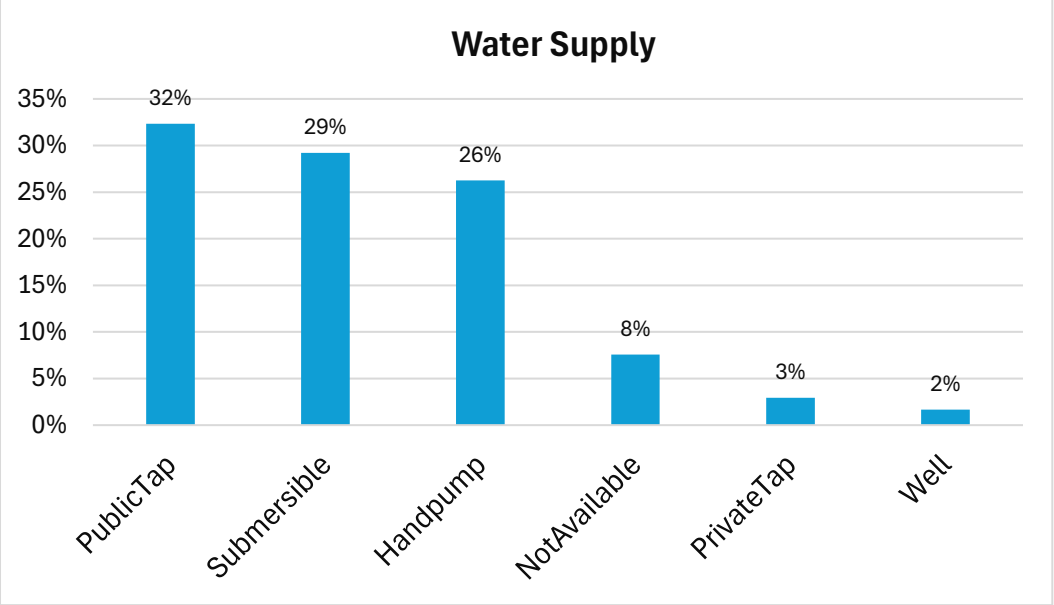

Figure 3-35 Source of water supply

3.5.2.2. Demand assessment for 2035 (as per RADPFI Guidelines)

As per RADPFI Guidelines, rural water supply norms recommend a minimum availability of 70-100 litres per capita per day (LPCD) for domestic use. For planning purposes, a mid-value of 85 LPCD is considered reasonable.

Based on the current Jal Jeevan Mission data for Makrampur Gram Panchayat, only 1407 household have received tap water connection it means only 24% of households have tap water connections, infrastructure expansion is essential. Projected future household numbers can guide the required tap connection targets

Basis of Calculation:

- Per capita water demand: 85 LPCD
- Population projections: Based on historical growth and Housing demand.
- Household size: Average of 4.7 persons/household from 2026 onwards

Table 3-14 Projection of Water Connection

Year	Population	Water Demand (LPCD)	Total Demand (MLD)	Projected Household	Required Tap Connections	Additional Connection Needed
2011	22340	85	1.8989	4753	4753	3346
2026	26960	85	2.2916	5736	5736	4329
2031	28500	85	2.4225	6064	6064	4657
2036	30040	85	2.5534	6391	6391	4984
2041	31580	85	2.6843	6719	6719	5312

**2035 population estimated by linear interpolation between 2031 and 2036*

3.5.2.3. Identified Issues

Public taps are the most prevalent source, serving 32% of the population, closely followed by submersible pumps at 29%. Handpumps provide water to 26% of the residents. However, 8% of the population reports that water is not available, while private taps and wells constitute a minimal fraction of the water supply infrastructure, accounting for 3% and 2% respectively.

Water table depths fluctuate, ranging from 40-70 ft in rainy season to 50-100 ft in dry season as summer and winter. Water is supplied once or twice daily limited to 4-5 hours This data highlights the need to address the water accessibility issues faced by the 8% of the population for whom water is not available and potentially explore expanding access to more reliable sources like public taps or submersible pumps.

3.5.3. Sewerage System

3.5.3.1. Key observations

Makrampur Gram Panchayat currently lacks a centralized sewerage network. Most households rely on individual sanitation systems such as septic tanks and pit latrines. The absence of proper drainage connectivity often leads to overflow and contamination of surrounding areas, especially during the monsoon. The limited coverage of existing

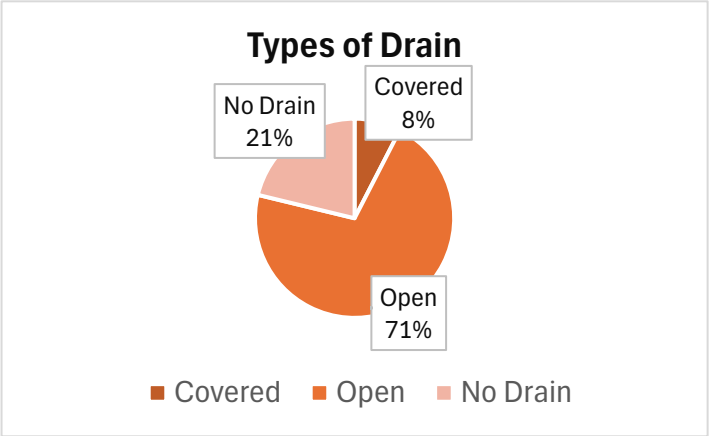

Figure 3-36 Types of drain

drainage infrastructure affects the safe disposal of greywater and wastewater, resulting in unhygienic conditions in several pockets of the GP.

3.5.3.2. Demand assessment for 2035 (as per RADPFI Guidelines)

As per the RADPFI Guidelines, it is essential to provide safe sanitation access to 100% of households by 2035. This would require upgrading existing sanitation systems and introducing decentralized wastewater treatment options. Given the projected population growth, the Gram Panchayat will require low-cost, environment-friendly solutions such as community-managed soak pits, twin-pit toilets, and the establishment of greywater reuse systems for irrigation or household utility use.

For wastewater generation 80% of total water used is taken into consideration

Table 3-15 Projection of Wastewater Generation

Year	Projected Population	Water Demand (LPCD)	Total Water Demand (MLD)	Wastewater Generation (MLD) (80%)
2026	26,960	85	2.29	1.83
2031	28,500	85	2.42	1.94
2035	29,770	85	2.53	2.02
2036	30,040	85	2.55	2.04

2041	31,580	85	2.68	2.14

As per the RADPFi Guidelines, 2021, rural liquid waste management should emphasize low-cost, low-maintenance, and community-managed solutions. The objective is to ensure proper collection, treatment, and safe reuse of wastewater with minimal environmental impact.

- **Wastewater Collection System:**
  - Shallow Surface Drains - for carrying greywater and stormwater.
  - Small Bore Sewers - for blackwater (sewage), supported by
  - Interceptor Tanks - at household or community level for initial treatment.

- **Treatment Options:**

For the projected wastewater generation of 2.14 million litres per day (MLD) by 2041 in Makrampur, the following are suitable:

- **Decentralised Wastewater Treatment System (DEWATS):**
  - Suitable for both grey and black water.
  - Low land requirement (approx. 0.3-0.5 hectares).
  - Low maintenance and suitable for water reuse in agriculture.

- **Stabilisation Pond System (SPS):**
  - Land requirement: approx. 2 hectares.
  - Capital Cost: ₹1.5-4.5 crore/MLD.
  - Operation & Maintenance (O&M) Cost: ₹6-10 lakh/year/MLD.
  - Suitable for warm climate and aquaculture integration.

- **Alternative Options (for limited land availability):**
  - Up flow Anaerobic Sludge Blanket (UASB): Land requirement: 0.2-0.3 ha/MLD.
  - Root Zone Treatment or Soakage Pits: For localized greywater treatment.

- **Effluent Disposal:**

Treated wastewater should be reused for horticulture or agriculture. Effluent must comply with Central Pollution Control Board (CPCB) standards:

- Biological Oxygen Demand (BOD) ≤ 30 mg/L
- Chemical Oxygen Demand (COD) ≤ 250 mg/L
- pH Range: 5.5-9.0

3.5.3.3. Identified Issues

- 21% of the area has no drainage system, which likely exacerbates waterlogging problems.
- 24% of the area experiences waterlogging, indicating a notable challenge in managing excess water.
- The absence of an integrated sewerage system results in the contamination of surface and groundwater.

3.5.4. Solid Waste Management

The Makrampur Gram Panchayat (GP) is grappling with significant challenges in solid waste management due to the lack of a systematic approach. Although a solid waste treatment plant has been established, it has not yet been made operational. There is no door-to-door waste collection system in place, leaving villagers to dispose of waste near their homes, which leads to localized accumulation of garbage. Additionally, street cleaning is not organized, resulting in unclean surroundings and further buildup of waste.

The problem becomes particularly severe after public gatherings such as melas or weekly markets, where large amounts of litter are left behind due to the absence of a structured clean-up process. While kitchen waste is managed individually by residents through composting, the overall lack of an integrated waste management strategy has led to environmental degradation and potential health hazards for the community.

3.5.4.1. Household Waste Management

Makrampur Gram Panchayat currently lacks a dedicated solid waste management system. There is no door-to-door waste collection service available at the GP level. As a result, most households dispose of their waste in nearby informal dumping sites or within their own backyard premises.

3.5.4.2. Agricultural Waste Management

In Makrampur Gram Panchayat, West Bengal, where rice mono-cropping prevails, farmers employ sustainable methods to manage rice residues. Rice straw is treated with urea to enhance its nutritional value and used as livestock feed for cows and buffaloes. This practice increases the protein content and digestibility of the straw,

making it a viable feed option. Additionally, rice straw serves as bedding material for cattle, providing comfort, reducing bacterial contamination, and minimizing the use of synthetic alternatives. The surplus straw is sold in nearby markets, offering farmers an additional income stream.

3.5.4.3. Dairy/Poultry Waste Management

In Makrampur GP, small-scale poultry farming generates various types of waste, including poultry droppings, litter materials (such as straw or wood shavings), excreta from cage systems (rich in nutrients like nitrogen, phosphorus, and potassium), feathers, broken eggs, and dead birds. Currently, many farmers burn these wastes, which contributes to air pollution and results in the loss of valuable resources. Additionally, wastewater from poultry operations is often discharged directly into nearby water bodies, leading to environmental contamination and potential health risks.

3.5.4.4. Key observations

- A solid waste treatment plant exists but is not operational.
- No structured system for door-to-door waste collection or street cleaning.
- Waste accumulates after public events like melas or markets, without follow-up cleaning.
- Organic household waste is managed to some extent through composting by individual households.
- No formal mechanism exists for processing agricultural or livestock waste in an eco-friendly manner.

3.5.4.5. Demand assessment for 2035 (as per RADPFI Guidelines)

As per RADPFI Guidelines, 2021 solid waste generation rate of 150 gm/capita/day (as a moderate estimate for rural areas) is taken. So, demand assessment for soild waste is as follows:

Table 3-16 Projection of Solid Waste Generation

Year	Projected Population	Solid Waste Generation (kg/day)	Solid Waste Generation (tons/day)
2026	26,960	4,044	4.04
2031	28,500	4,275	4.28

2035	29,770	4,466	4.47
2036	30,040	4,506	4.51
2041	31,580	4,737	4.74

Infrastructure Requirement for Solid Waste Management

- **Waste Segregation and Collection:**
  - At Source: Promote segregation at household level into biodegradable and non-biodegradable.
  - Collection System: Door-to-door collection using push carts or tricycles (at least 1 per 250 households).
  - Storage Bins: Separate bins at common points for biodegradable and recyclable waste.

- **Treatment Infrastructure:**
  - Composting Unit:
    - Method: Vermi composting or NADEP method at community level.
    - Land Requirement: 1 hectare for 83.33 TPD; for Makrampur (~4.74 TPD by 2041), approx. 600 sq. m. is sufficient.
    - Location Criteria: Away from habitation, near agricultural fields, and away from water bodies.
  - Recycling of Non-Biodegradable Waste:
    - Collection centre for plastics, glass, metals.
    - Engage local scrap dealers for transport to recycling chain.
  - Landfill Site (for residual waste):
    - Location: On village outskirts, in natural depression areas.
    - Size: Small-scale landfill (less than 0.2 ha) sufficient for inert/rejects.
    - Management: Involvement of SHGs or youth clubs for operations.

3.5.4.6. Identified Issues

- Non-operational solid waste treatment plant.
- Lack of regular waste collection and cleaning services.
- Environmental degradation due to unregulated dumping and burning of waste.
- No infrastructure for safe processing of dairy and poultry waste.
- Weak institutional and financial capacity to implement a comprehensive waste management system.

3.5.5. Storm Water Management

3.5.5.1. Key observations

Makrampur Gram Panchayat faces significant stormwater management challenges, particularly during the monsoon season. The most critical issue arises near the Keleghai River, where the bridge connecting villages like Binai, Belti, Dhangari and other villages in that side of the GP area frequently gets submerged during heavy rains, leading to temporary disconnection of these habitations from the main GP area. This seasonal isolation hampers access to basic services, emergency care, and markets.

The absence of a structured stormwater drainage system further aggravates the situation. Most areas depend on open earthen drains or lack any drainage facility, causing frequent waterlogging—as reported by multiple households—especially in low-lying settlements. Additionally, the lack of natural runoff management contributes to overflow of greywater systems and contamination near residential areas.

The proposal for a Keleghai Dam or Barrage has been identified as a potential long-term measure to control flooding, improve irrigation, and maintain year-round connectivity among disconnected hamlets.

3.5.5.2. Demand assessment for 2035 (as per RADPFI Guidelines)

In accordance with RADPFI norms and considering the projected population of 29,770 by 2035, the following infrastructure and planning measures are required:

- Development of an integrated stormwater drainage system, with appropriate gradient and connectivity, covering all residential clusters.
- Construction of culverts and raised pathways near the Keleghai river to ensure flood-resilient access.
- Introduction of stormwater recharge pits, especially near community buildings and open grounds.
- Restoration and deepening of local ponds and lowlands to act as natural retention basins.
- Regular de-silting and maintenance of water channels before monsoon seasons.

3.5.5.3. Identified Issues

- **Flood-prone river crossing:** Seasonal flooding at the Keleghai bridge cuts off access to peripheral villages.

- **Lack of engineered drainage:** The GP lacks a scientifically planned drainage layout, leading to poor runoff management.
- **Waterlogging in settlements:** Inadequate or non-functional roadside drains cause water accumulation near homes.
- **Absence of retention infrastructure:** Natural and constructed stormwater storage systems are either absent or insufficient.
- **No structured maintenance mechanism:** Existing open drains are not regularly cleaned or upgraded, leading to blockage and overflow.

3.5.6. Electricity and Solarization

3.5.6.1. Key observations

The West Bengal Power Development Corporation ensures a 24-hour electricity supply to the village, including provisions for agricultural connections.

Table 3-17 Electricity infrastructure

Electricity Infrastructure	
Particulars Availability Is the village electrified?	Yes
Number of connections for industrial purpose	--
Number of agricultural connections	--
Does the village get three-phase electricity?	Yes
Does the village get 24 hours of electricity for residential purposes?	Yes
Is the streetlight electrified?	Yes (mostly solar)
Does the village have solar streetlights?	Yes
Source: Village Survey, 2025	

Solar-powered streetlights and submersible pumps operate autonomously, significantly reducing the electricity expenses for the gram panchayat. Furthermore, the availability of three-phase electricity facilitates the development of renewable energy initiatives, particularly expanding solar energy projects.

3.5.6.2. Demand assessment for 2035 (as per RADPFI Guidelines)

3.5.6.3. Identified Issues

While a high percentage (96%) of the area has access to electric supply, the duration of that supply is severely limited for the vast majority of the population. The finding that 91% of the area receives only 0-7 hours of electricity per day indicates a critical infrastructure deficit. This limited access likely hampers various aspects of life, from household activities and education to economic productivity and healthcare. The small percentages of the population receiving 8-15 hours (7%) and 16-24 hours (2%)

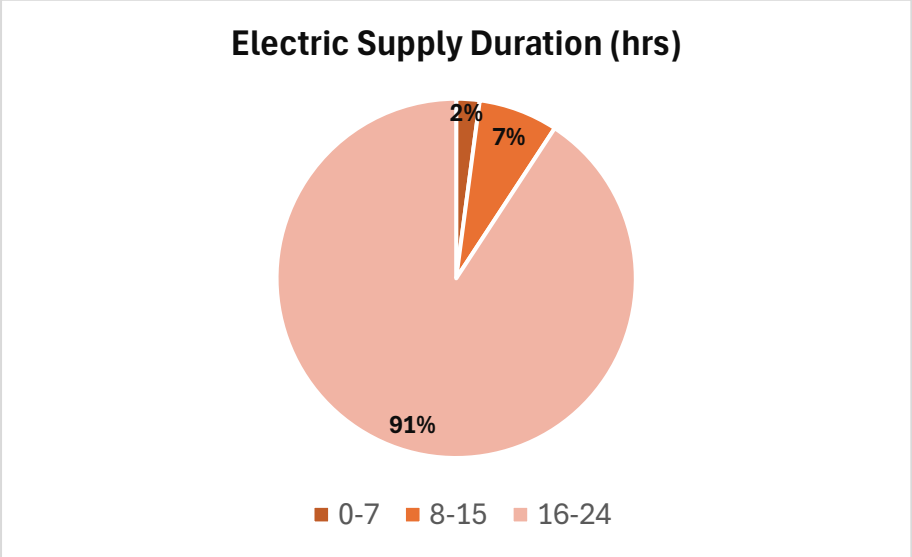

Figure 3-37 Electric supply duration

highlight a stark inequality in access to reliable electricity, potentially creating disparities in development and opportunities across the region.

3.5.7. Streetlights

3.5.7.1. Key observations

Street lighting coverage in Makrampur Gram Panchayat is significantly inadequate, particularly in remote and forest-adjacent villages such as Dhangari, which are located far from the GP headquarters. These areas lack basic lighting infrastructure, making night-time movement unsafe for residents. The village lies in close proximity to forested zones and along established elephant corridors, resulting in frequent human-wildlife conflicts, especially during late hours when visibility is poor.

In Dhangari, villagers must pass through jungle paths to reach their homes, increasing their vulnerability to elephant attacks and encounters with other wild animals. The absence of lighting also affects women's safety, restricts economic and social mobility after dark, and deters access to emergency services.

3.5.7.2. Demand assessment for 2035 (as per RADPFI Guidelines)

In line with RADPFI Guidelines and considering projected population growth and settlement expansion, the following streetlight infrastructure is required by 2035:

- Installation of solar-powered LED streetlights at a density of 10 streetlights per km of rural road length, especially in forest-adjacent and peripheral habitations.
- Prioritization of lighting in high-risk zones including Dhangari, Binai, and Belti, based on elephant movement routes and settlement dispersion.
- Coverage of all internal village paths, main roads, and access routes to public facilities like schools, health centres, and market areas.
- Integration with central/state schemes such as Deen Dayal Upadhyaya Gram Jyoti Yojana for rural electrification and lighting.
- Collaboration with NGOs and CSR initiatives to implement low-cost, decentralized lighting solutions in remote and economically weaker hamlets.

Table 3-18 Required Streetlights

Road type	Road Length	Number of Streetlight proposed
Internal and Main Road	1.6 km + 1.5 km	207

3.5.7.3. Identified Issues

- Absence of lighting infrastructure across most of the GP, especially in remote villages like Dhangari.
- High risk of wildlife encounters due to poor visibility in forest-bordering villages situated along elephant trails.
- Night-time safety concerns restricting mobility and access to services.
- Lack of electrification and poor maintenance of any existing lighting infrastructure.
- Limited local resources and technical capacity for installing and maintaining solar lighting systems.

3.5.8. Communication Facilities (Phone line, Mobile Tower, Internet, etc)

3.5.8.1. Key observations

One mobile tower has been observed during field survey

3.5.9. LPG & alternate Fuel (Gas) Facilities

3.5.9.1. Key observations

The energy profile of households in Makrampur Gram Panchayat highlights a mixed dependency on both clean and traditional fuels:

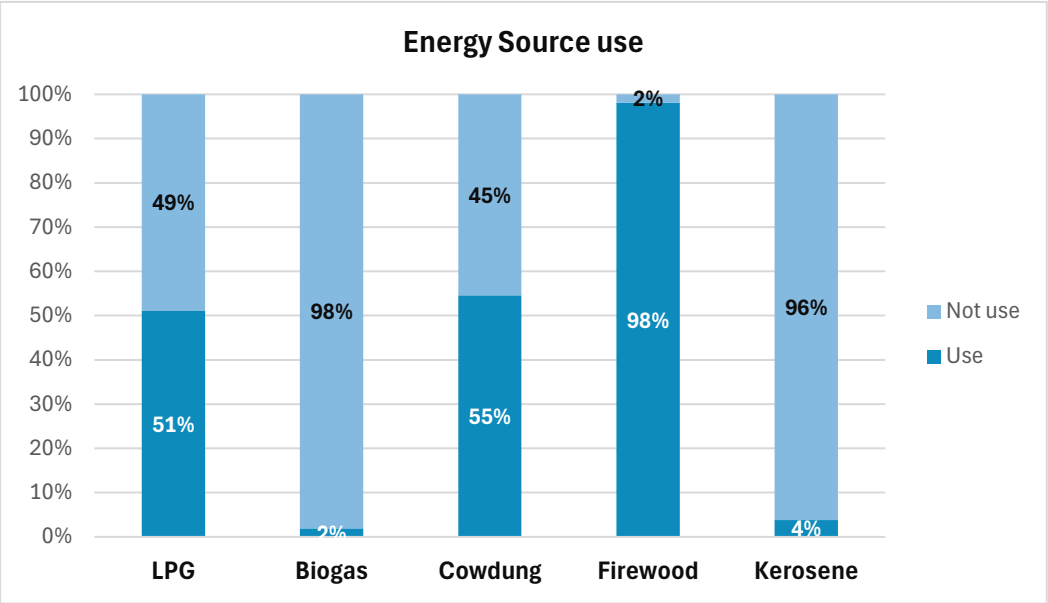

Figure 3-38 Energy Source Use

- LPG is used by 51% of households, reflecting partial success of clean fuel initiatives such as the Pradhan Mantri Ujjwala Yojana (PMUY).
- Biogas usage is minimal at only 2%, indicating a largely untapped potential for decentralized, sustainable energy generation.
- Cow dung and firewood remain the dominant traditional fuels, used by 55% and 98% of households respectively, particularly in tribal and economically weaker communities.
- Kerosene usage is also low (4%), largely retained for lighting or backup purposes.

This mixed pattern indicates that while over half of the population has shifted to LPG, traditional biomass fuels like firewood and cow dung continue to be heavily used, either due to affordability, cultural practices, or limited accessibility.

3.5.9.2. Demand assessment for 2035 (as per RADPFI Guidelines)

With a projected 6,227 households by 2035, the clean fuel demand for Makrampur GP will require the following:

- At least 6,227 LPG connections to achieve full coverage.

- Establishment of additional LPG supply points or delivery hubs in interior and forest-adjacent villages like Dhangari and Binai.
- Expansion of biogas units, particularly in areas with livestock presence, to diversify energy sources and support waste-to-energy practices.
- Promotion of awareness programs focused on health and environmental benefits of clean fuel, targeting the 49% still reliant on traditional sources.
- Integration of support through PMUY and coordination with NGOs to subsidize refills and infrastructure in low-income households.

3.5.9.3. Identified Issues

- High dependence on biomass (98% firewood, 55% cow dung) contributes to health risks and environmental degradation.
- Low penetration of biogas (2%) despite high suitability in rural settings.
- Economic constraints and refill costs hinder sustained LPG usage among BPL and tribal households.
- Logistical issues in remote villages reduce the regularity of LPG distribution.
- Limited public awareness of long-term health and environmental impacts of traditional fuels.

3.5.10. Postal Service

3.5.10.1. Key observations

The Gram Panchayat is served by three post offices located in Phulgeria, Makrampur, and Rampur villages, providing essential postal and communication services to the residents. Gram Panchayat is served by three post offices, present at Phulgeria, Makrampur and in Rampur village, ensuring that postal services and communication needs are met.

3.5.10.2. emand assessment for 2035 (as per RADPFI Guidelines)

The existing post office infrastructure is adequate to cater to the projected demand up to the year 2035.

3.5.10.3. Identified Issues

No significant issues have been identified in the postal service infrastructure assessment for Makrampur Gram Panchayat.

3.5.11. ICT Services and its adaptation in GP

3.5.11.1. Key observations

The adoption of Information and Communication Technology (ICT) in Makrampur Gram Panchayat (GP), located in Narayangarh Block, Paschim Medinipur District,

West Bengal, has been aimed at enhancing transparency, efficiency, and accessibility in governance. The implementation of the West Bengal Panchayat Management System (WBPMS) and various digital platforms has enabled better service delivery, record-keeping, and citizen engagement.

3.5.11.2. Demand assessment for 2035 (as per RADPFI Guidelines)

By 2035, the demand for ICT services is expected to grow significantly, requiring:

- Universal digital literacy among all age groups, with targeted training for youth and SHGs.
- Complete digitization of Gram Panchayat records and workflows.
- Establishment of Village Knowledge Centres and Common Service Centres (CSCs) in each major settlement.
- High-speed internet access in all villages, including remote areas like Dhangiri.
- Enhanced ICT capacity for local governance, health, education, and agricultural services.

3.5.11.3. Identified Issues

Despite the availability of digital platforms, the adoption of ICT in Makrampur GP faces several challenges:

- **Digital Literacy:** A significant portion of the rural population lacks awareness and skills to utilize online services effectively. As per primary survey only 4% people are digitally literate.
- **Willingness of GP Officials:** Some Gram Panchayat officials and staff still prefer traditional, paper-based processes due to familiarity and reluctance to transition fully to digital methods.
- **Infrastructure Gaps:** While digital services are available, issues such as internet connectivity and lack of adequate hardware hinder smooth implementation.

3.6. Housing Profile

3.6.1. Housing Stock

According to the 2011 Census, Makrampur GP has 5164 houses accommodating a population of 22340, resulting in an average household size of 4.32.

The age distribution of houses in Makrampur GP reveals a diverse housing stock. A substantial 39% of the houses are relatively new, having been built within the last 10-20 years, suggesting recent construction and potential growth in the area. Approximately 33% of the houses fall into the 20-50 year age bracket, indicating a significant proportion of middle-aged housing. Older houses, aged over 50 years, constitute 21% of the total, reflecting the area's historical development. The smallest segment, at 6%, represents the newest houses, built within the last 10 years. This distribution suggests a mix of old and new development, with a notable emphasis on houses built in the last two to five decades.

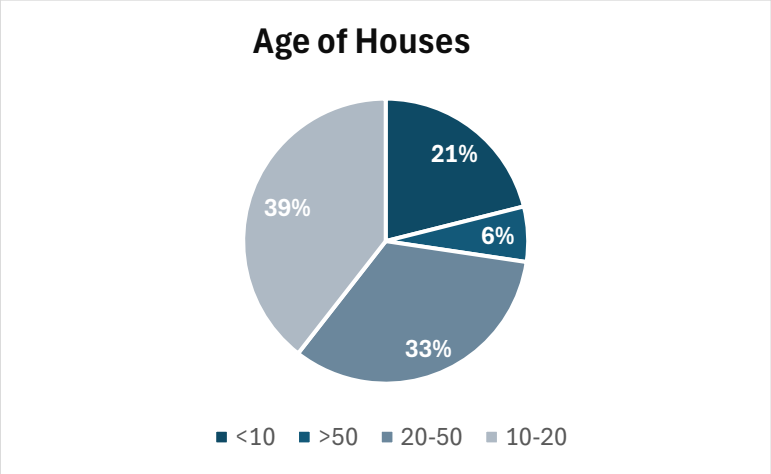

Figure 3-39 Age of houses

Spatial Unit	Population	No. of HH	HH Size
Paschim Medinipur (District Rural)	5190771		
Makrampur GP (Taluka Rural)			
Makrampur GP	22340	5164	4.32

3.6.2. Status of Occupied Houses

The data reveals significant disparities in housing types and conditions across Makrampur GP. Kachcha houses, the least durable type, constitute a notable portion of the housing stock, with 20% classified as dilapidated and 13% in good condition,

while 40% are livable. In stark contrast, Pucca houses, which are more permanent structures, show a greater proportion in good condition (13%) and only 1% are dilapidated. Semi-Pucca houses fall in between, with 6% in good condition and 1% dilapidated and 4% livable. The high percentage of Kachcha houses in dilapidated condition suggests a pressing need for housing improvement programs in Makrampur GP. The spatial development plan should prioritize upgrading Kachcha houses to Pucca or Semi-Pucca structures to improve living standards and resilience to environmental factors. Additionally, resources should be allocated to maintain and improve the existing Pucca and Semi-Pucca houses to prevent future deterioration.

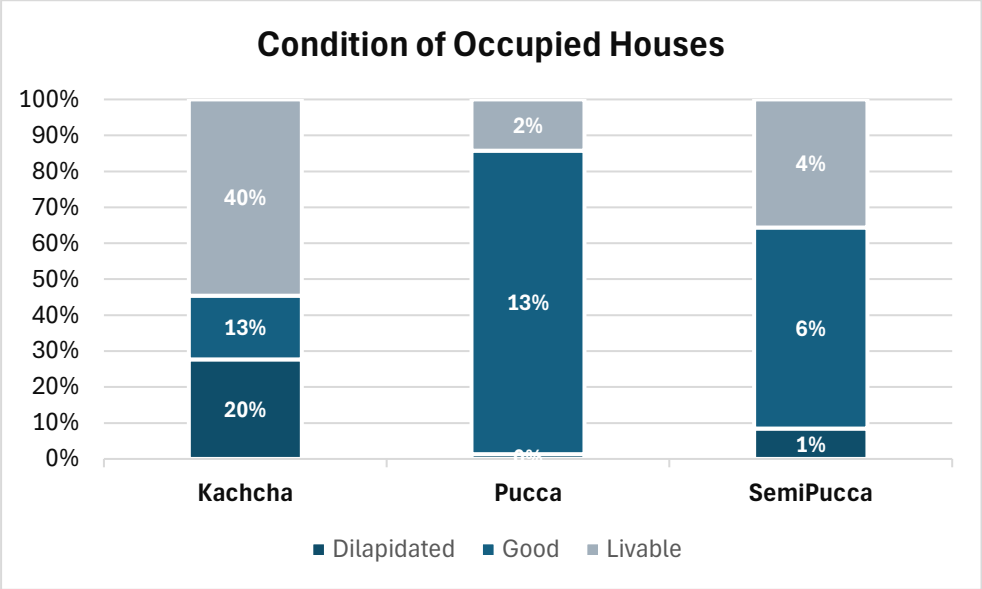

Figure 3-40 Condition of occupied houses

3.6.3. Construction Material of Houses

Mud is the predominant material used for wall construction, accounting for 70% of houses. This suggests a reliance on traditional and locally available materials. Pakka bricks are the second most common material, used in 16% of houses, indicating a move towards more durable construction in some areas. The use of unburned bricks and stone with mortar each account for 5%, while bamboo is used in 3% of houses. Concrete blocks are the least used material, accounting for only 1% of houses.

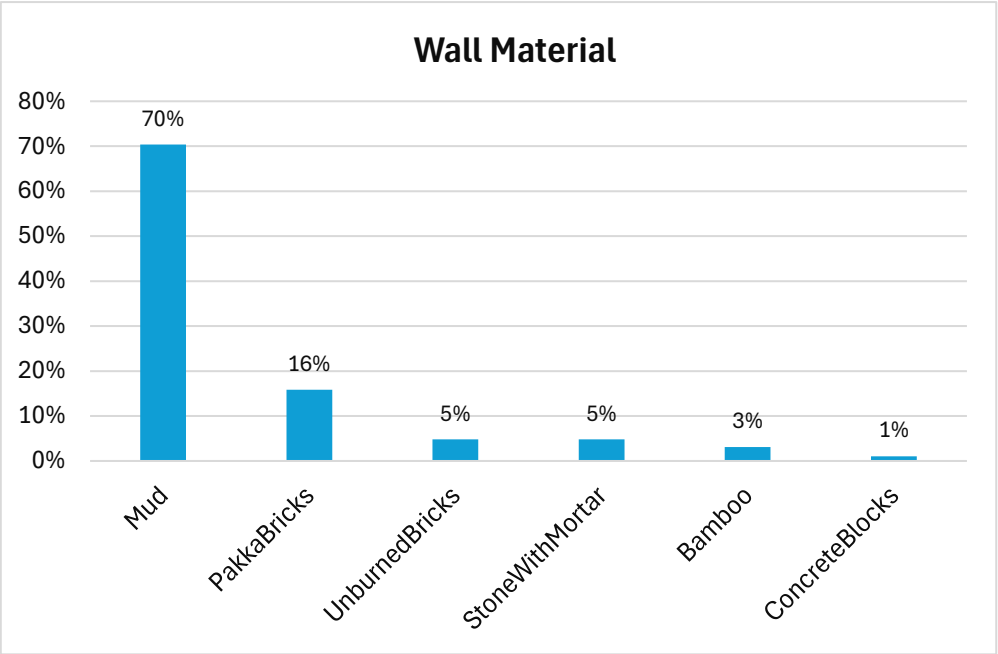

Figure 3-41 Construction material for wall

This distribution of wall construction materials highlights a disparity in housing quality within Makrampur GP. While a significant portion relies on mud, which may be more susceptible to weather damage and require frequent maintenance, a smaller percentage utilizes more durable materials like pakka bricks and concrete blocks.

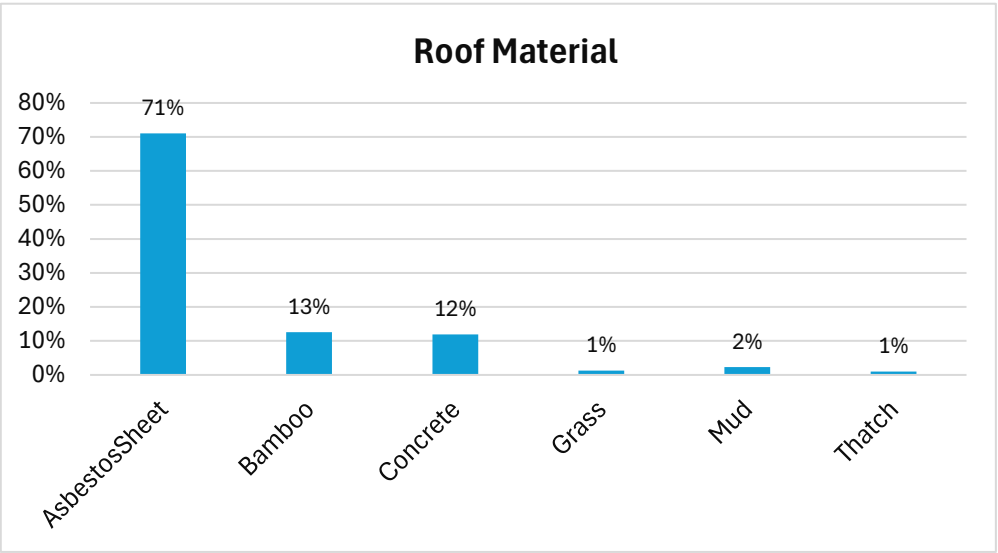

Figure 3-42 Construction material for roof

In Makrampur GP, asbestos sheets are by far the most prevalent roofing material, accounting for 71% of houses. This dominance suggests a widespread adoption of this material, likely due to its perceived affordability, durability, and ease of installation. However, it's crucial to consider the potential health hazards associated with asbestos,

which could pose long-term risks to the residents. Bamboo and concrete represent the next most common roofing choices, with 13% and 12% respectively. The use of bamboo indicates a continued reliance on locally sourced, natural materials, while the adoption of concrete signifies a preference for more permanent and robust construction. The minimal usage of traditional materials like grass, mud, and thatch (a combined 4%) signals a significant shift away from traditional building practices, possibly due to their limited lifespan, higher maintenance requirements, and vulnerability to weather-related damage.

3.6.4. Ownership Status

All the 450 households surveyed in Makrampur GP village are owner-occupied, with no rented properties present. This trend stems from the limited job opportunities in the region, which discourage rental housing demand. In cases of new immigration, newcomers build their own homes using locally available forest resources such as mud, wood, and thatch roofs made from rice husk.

3.6.5. Housing Demand Assessment for 2035 (as per RADPFI Guidelines)

Housing is one of the necessities of human sustenance deserves special attention in any kind of planning and policy level intervention. This section foresees the housing demand for the planning area. For this exercise, the following assumptions are adopted with the reference to the Census 2011 Housing Profile and primary survey for Makrampur GP:

- According to the primary survey, dilapidated houses account for 20%. However, for future housing demand planning, only 10% of these were considered.
- Average Household size taken as 4.7.

Table 3-19 Household size

Year	1991	2001	2011
Population	16180	19153	22340
No of Household	3211	3982	5165
HH size	5.04	4.81	4.33
Avg. HH size	**4.72**		

Source: Census data

For 2041 projection, 4.72 household size is considered, based on the historical data. The projected housing strokes for 2041 is 7,391 for the planning area. As per census

2011 data, total housing stock in the GP is 5165 out of which 1033 are dilapidated, which means additional residential area required accommodate additional 3,259 houses by the year 2041.

Table 3-20 Housing demand

Year	2011	2021	2026	2031	2036	2041
Population	22340	25420	26960	28500	30040	31580
Average HH size	4.33	4.7	4.7	4.7	4.7	4.7
No of Houses	5165	5409	5736	6064	6391	6719
Dilapidated House	1033	1082	574	606	639	672
Total No. of house required	6198	6490	6310	6670	7031	7391

Source: Census 2011, Primary survey, 2025

3.6.6. Supporting Housing Services

The analysis of average monthly expenditure in Makrampur GP reveals significant disparities across housing types. Households residing in "Pucca" houses in good condition exhibit the highest average monthly expenditure, standing at Rs 11,408, suggesting a higher socio-economic status within this group. In contrast, those in dilapidated "Pucca" houses report a significantly lower average expenditure of only Rs 2,000, highlighting potential economic challenges and vulnerabilities.

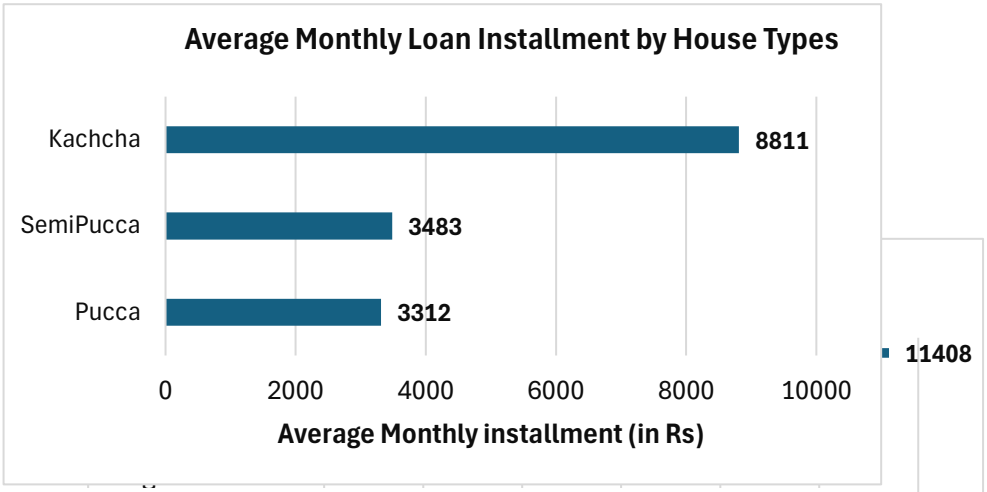

Figure 3-44 Average monthly loan instalment

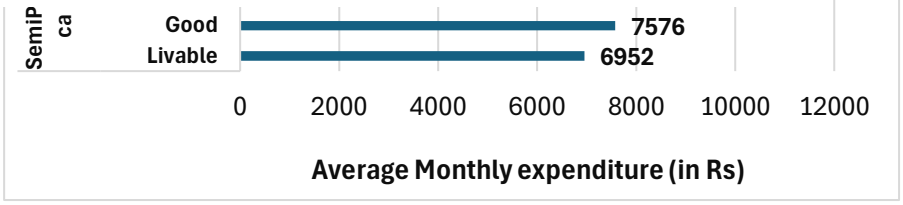

Figure 3-43 Average monthly expenditure

Notably, "Kachcha" houses, regardless of their condition, generally show lower expenditure levels compared to "Pucca" houses, with "Livable" Kachcha houses at Rs 8229, "Good" Kachcha houses at Rs 6795 and "Dilapidated" Kachcha houses at Rs 6417. "Semi Pucca" houses present intermediate expenditure levels, where "Dilapidated" Semi Pucca houses stand at Rs 8200, "Good" Semi Pucca houses stand at Rs 7576 and "Livable" Semi Pucca houses stand at Rs 6952

Monthly loan instalment: Women are obtaining business loans through self-help groups. Households residing in Kachcha houses have the highest average installment at Rs 8811, substantially exceeding those in Semi-Pucca (Rs 3483) and Pucca houses (Rs 3312). This suggests that residents of

Kachcha houses may face greater financial strain related to debt.The relatively similar installment amounts for Semi-Pucca and Pucca houses could indicate a comparable level of financial stability or access to credit under similar terms for these groups.

Status of Toilets: The data indicates that a significant majority of households (65%) in Makrampur GP have access to toilets, while 35% still lack this essential facility. Regarding the construction type of these toilets, there's a near split, with 33% being constructed under government schemes such as Swachh Bharat Mission or Nirmal Bangla Mission and 32% being built through individual efforts or

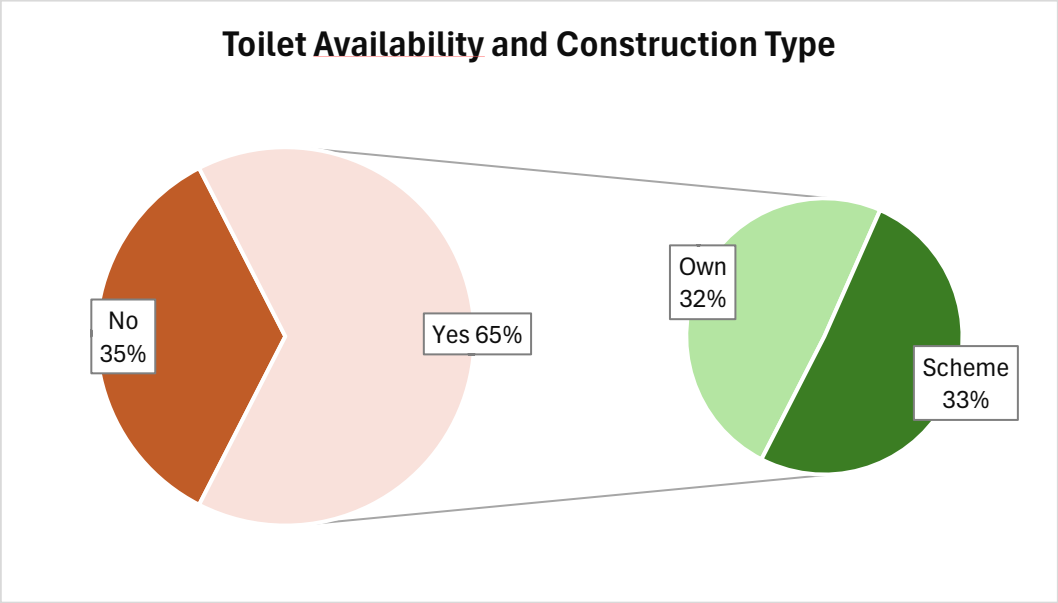

Figure 3-45 Toilet availability and construction type

own resources. This suggests that while government schemes have played a crucial role in promoting toilet construction, a considerable proportion of residents have also taken the initiative to build toilets independently. Despite the progress, the 35% of households without toilets highlights the need for continued efforts to achieve complete sanitation coverage in Makrampur GP. Further investigation into the reasons behind the lack of toilet access for this segment could help tailor interventions for maximum impact. Swachh Bharat Mission or Nirmal Bangla Mission.

Table 3-21 Type of Bathroom and Drainage Connectivity

Wastewater outlet connected to			**Households having latrine facility**	
Closed drainage	Open drainage	No drainage	Yes	No
8%	71%	21 %	65%	35%
Source: primary survey				

Means for Local Commute: In Makrampur GP, the transportation landscape reveals a significant reliance on non-motorized and public transit options for commuting. A substantial 42% of the working population uses bicycles, likely due to affordability for

long to moderate distances. Bus services cater to 28% of commuters for intracity connetivity, underscoring the importance of public transportation infrastructure in connecting residential areas with workplaces. However, the absence of public transport options after 7 PM creates a challenging situation, particularly for women and children who become heavily reliant on bicycles and motorcycles, even for emergency travel.

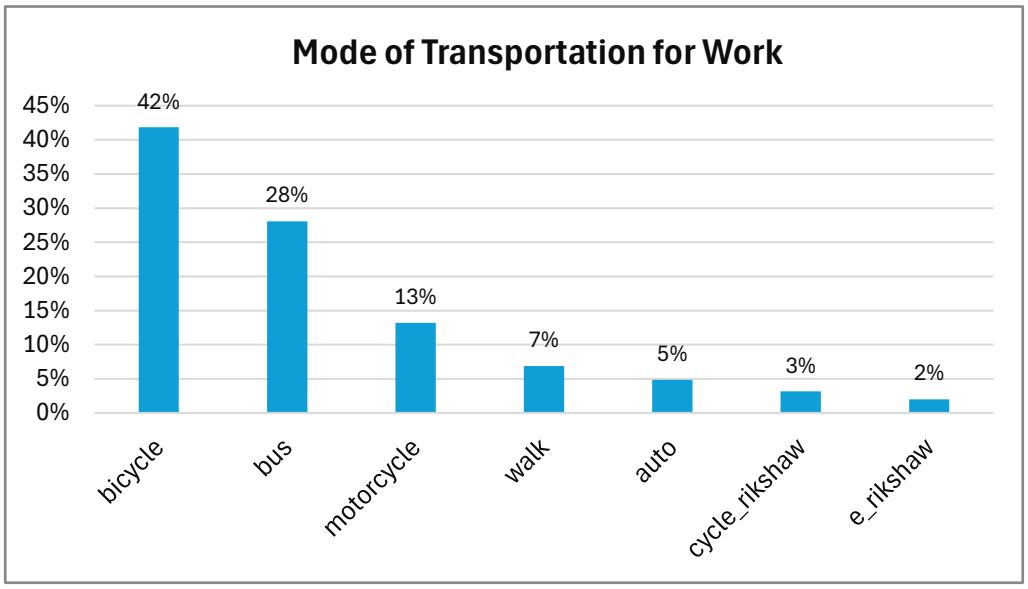

Figure 3-46 Mode of Transportation for Work

Motorcycle usage stands at 13%, reflecting a need for personal mobility, possibly due to longer commutes or the transportation of goods. Walking accounts for 7%, suggesting a segment of the population affordability of buying cycle. Autos are used by 5% with long intervals, cycle rickshaws by 3%, and e-rickshaws by only 2%, potentially due to cost and availability.

Critically, the lack of public transport in the evening necessitates exploring solutions such as on-demand services, community-based transport options, or extending public transportation service hours to ensure the safety and mobility of all residents, especially women and children, during emergencies and other essential travel needs.

Energy Source: The energy source use in Makrampur GP reveals significant reliance on traditional fuels. Firewood is the most used energy source, with 98% of households using it, indicating a heavy dependence likely due to its availability and affordability. LPG and cow dung are also used by 51% and 55% of households, respectively, suggesting a notable but lesser dependence. Biogas use is minimal, with only 2% of households utilizing it, which points towards a need for better infrastructure and awareness regarding biogas as a cleaner alternative. Kerosene has the lowest usage

at 4%, possibly because of the availability of other alternatives or a shift towards cleaner energy sources, however slow it may be.

Table 3-22 List of Additional Services and Facilities Available at HH Level

Type of Services	Level of Availability	Source
Additional List of Services Available at HH Level		
Main Source of Light	100% HH- Electricity	Primary Survey
Cooking Fuel	98% HH-firewood Remaining LPG and cow dung	HH survey, Primary Survey & FGDs
2-Wheeler	65 % HH	HH survey,
Mobile and Telephone	98 % HH	HH survey,
Television	50% HH	HH survey,
Source: HH Survey, Primary Survey, FDGs.		

3.6.7. Housing Services Demand Assessment for 2035 (as per RADPFI Guidelines)

Based on demographic growth, settlement expansion, and infrastructure planning criteria outlined under the Rural Area Development Plan Formulation and Implementation (RADPFI) guidelines, the projected housing requirement for Makrampur Gram Panchayat up to the year 2036 has been assessed as follows:

Year	2011	2021	2026	2031	2036	2041
Total No. of house required	6198	6490	6310	6670	7031	7391

The total projected housing requirement by 2036 is estimated at 7,031 units. This growth necessitates parallel infrastructure upgrades to maintain service standards and inclusivity across residential clusters.

Associated Service Demands for 2035:

To support the additional housing demand by 2036, the following complementary infrastructure and service provisions must be addressed:

- **Drainage & Sewerage Networks:** Extension of underground drainage systems and decentralized sewerage networks across emerging residential zones.
- **Street Lighting Infrastructure:** Installation of energy-efficient lighting in all habitation clusters to enhance public safety and urban mobility.
- **Rainwater and Greywater Management Systems:** Promotion of dual plumbing systems and rooftop rainwater harvesting, particularly for areas with high runoff.
- **Affordable Construction Material Access:** Establishment of Sanitation Hardware Marts to support low-cost, durable building components and hygienic sanitary fittings.
- **Community Sanitation Facilities:** Provision of shared toilet blocks and bathing units for households lacking plot space or financial ability to construct individual facilities.

3.6.8. Identified Issues

Based on the analysis of existing housing stock, services, and primary data, the following key issues have been identified in Makrampur GP:

- **Poor Housing Quality:** A significant number of houses are Kachcha and in dilapidated condition, making them vulnerable to natural hazards and unsuitable for healthy living.
- **Inadequate Sanitation:** About 35% of the households do not have access to any toilet facilities. The majority rely on open or no drainage, causing potential health hazards.
- **Unsafe Construction Materials:** A large portion of households use asbestos sheets for roofing (71%), which poses long-term health risks due to airborne fibers.
- **High Reliance on Firewood:** Around 98% of households depend on firewood for cooking, contributing to indoor air pollution and environmental degradation.
- **Limited Access to Evening Public Transport:** Lack of transport services after 7 PM limits the mobility of women, children, and emergency cases.
- **Financial Vulnerability:** Households in Kachcha houses bear higher average loan instalments, which reflects financial strain and potential debt traps.
- **Lack of Rental Housing:** All houses are owner-occupied; there is no rental housing stock, indicating limited housing options for migrants or low-income households.

- **Disparity in Services:** The quality and availability of services such as water supply, solid waste disposal, and roads vary significantly across different settlement pockets.

3.6.9. Possibility of Village Planning Scheme (As per RADPFI Guidelines)

3.7. Environment, Disaster Management and Climate Change

3.7.1. Pollution in Gram Panchayat

3.7.1.1. Drainage Pattern, Catchment Areas and Water Bodies

3.7.1.1.1. Waterbodies

Rivers and Streams

The Keleghai River flows through Makrampur GP, significantly influencing local water availability, irrigation, and flood risks. During heavy rainfall, the river often overflows, causing flooding and disconnection of certain regions from the Gram Panchayat, disrupting transport and daily activities. To mitigate these issues, there is a pressing need for a Keleghai Dam, which would serve dual purposes:

- **Irrigation Support:** A dam would provide a regulated water supply for agriculture, enhancing productivity and reducing dependence on erratic rainfall.
- **Flood Control:** It would help prevent excessive waterlogging and protect low-lying areas from seasonal inundation.

In addition to the Keleghai River, several canals and streams traverse Makrampur GP, supporting both irrigation and drainage. The Keleghai-Kapaleswari Interlinking Canal plays an important role in maintaining water flow and ensuring a stable irrigation supply for agriculture. Additionally, smaller seasonal streams help drain excess water during the monsoon season but often dry up in summer, leading to water shortages. These water channels are essential for maintaining local hydrology and agricultural productivity.

Ponds

Makrampur Gram Panchayat has a significant number of ponds that serve as essential water sources for local communities. These ponds are extensively used for daily activities such as washing clothes, cleaning utensils, and bathing cattle. However, a critical concern is the direct drainage of toilet wastewater into the ponds, which severely affects water quality. Despite the contamination, the same ponds are used for fish farming, and the fish caught from these water bodies are consumed by the villagers.

Challenges and Environmental Concerns:

- **Water Pollution and Public Health Risks:** The direct discharge of wastewater and the frequent human and cattle bathing in the ponds contribute to water pollution, posing severe health risks.
- **Lack of Infrastructure:** The absence of proper guard walls around the ponds leads to soil erosion, affecting the nearby roads and houses due to sliding mud.

- **Inadequate Maintenance:** Many ponds lack regular cleaning and maintenance, reducing their usability for fisheries and other activities.
- Interventions by UNOPS and Local Initiatives
- The United Nations Office for Project Services (UNOPS) is actively supporting Makrampur GP in training the local community on cleanliness and waste management. Key initiatives include:
- Conducting cleanliness drives to improve pond conditions.
- Promoting waste segregation at the village level to reduce contamination.
- Encouraging the 'Leave No One Behind' community approach to involve all villagers in maintaining hygiene and sustainability.

Figure 3-47 Absence of guard wall around the pond

Figure 3-48 Use of pond for daily human activity

Previously, the GP initiated guard wall construction around the ponds using concrete. However, due to government restrictions on concrete guard walls (further legal verification required), the funding for such structures has been discontinued. This has several ponds with only partially built concrete walls. The Gram Panchayat now distributes limited funds across villages, resulting in incomplete structures.

A major concern among villagers is the sliding mud around pond edges, which affects adjacent roads and houses. There is an urgent need to identify and implement sustainable construction techniques for guarding walls, preferably using locally available materials, to ensure long-term stability and environmental friendliness.

Economic Aspects and Community Engagement

The GP owns several ponds that are leased out for fisheries at a rental price of INR 25,000 per month. This generates revenue for local administration while supporting the livelihoods of fishermen. However, to enhance productivity and maintain water quality, further cleaning and rejuvenation efforts are necessary. This will not only improve pond usability but also contribute to the overall beautification of the village.

3.7.1.2. Forests, National Parks, Wildlife Sanctuaries, important migratory corridors, reserved forests or mangrove plantations

3.7.1.3. Other Environmental Sensitive or Eco-Sensitive Zones (ESZ)

3.7.1.4. Strategies to curb the pollution in GP and secure the environmentally sensitive areas

3.7.2. Identified Disaster Risks and Disaster Management Strategies

The district has historically been susceptible to natural disasters, notably floods and cyclones. In 2013, Paschim Medinipur experienced five successive floods due to heavy rainfall in upper catchment areas and substantial dam discharges. Additionally, the region has faced challenges such as droughts and other natural calamities.

According to the survey, 24% of respondents reported experiences of past disaster events, such as floods and cyclones

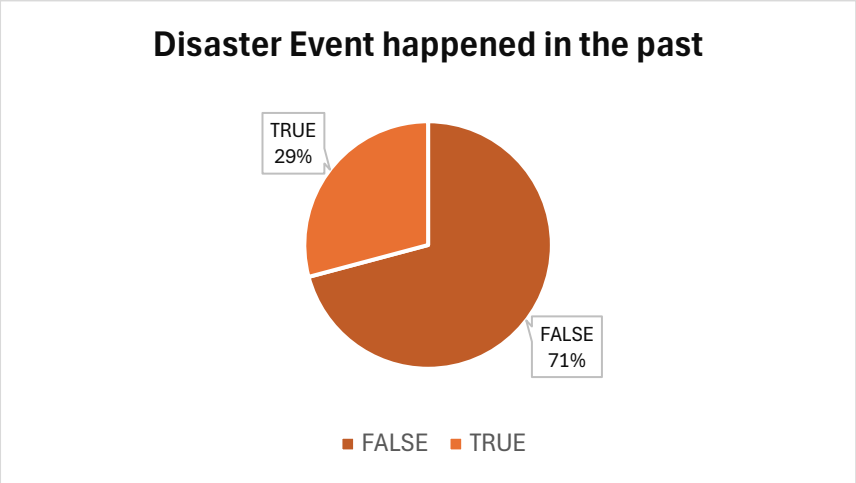

Figure 3-49 Disaster Event happened in the past in Makrampur GP

To address these vulnerabilities, the Paschim Medinipur District Disaster Management Plan (DDMP) provides a comprehensive framework for all disaster management phases, including risk reduction, mitigation, preparedness, response, recovery, and reconstruction. This plan aligns with the Disaster Management Act of 2005 and emphasizes a multi-hazard approach. Makrampur Gram Panchayat, as part of this initiative, is expected to establish the Disaster Management Committees responsible for:

- Early warning dissemination
- Evacuation and shelter management
- Coordination with district authorities

3.7.2.1.1. Flooding

Makrampur GP in Paschim Medinipur faces frequent flooding due to the Keleghai River overflowing during monsoons. Submerged roads and bridges cut off villages, disrupting daily life and essential services. Floodwaters damage infrastructure, destroys crops, and increase health risks due to water contamination. Key impacts of flooding:

- **Loss of Connectivity:** Bridges and roads get submerged, isolating villages and disrupting daily life.
- **Infrastructure Damage:** Roads, bridges, and embankments weaken due to prolonged water exposure.

- **Agricultural Losses:** Floodwaters destroy crops and reduce soil fertility, impacting farmers' income.
- **Health and Sanitation Issues:** Water stagnation increases the spread of diseases and contaminates drinking water sources.

To address these challenges, the government has implemented the Keleghai-Kapaleswari Drainage Scheme to improve water flow and reduce waterlogging. Relief measures, including shelters, food, and medical aid, are provided during severe floods. Infrastructure improvements, such as embankments and culverts, help control water levels, and proposals for a dam or barrage are under consideration to regulate the river's flow and mitigate future floods.

3.7.2.1.2. Disaster Preparedness

The disaster preparedness survey for Makrampur Gram Panchayat reveals significant gaps in awareness and readiness. While 46% of the population is aware of disaster risks, a concerning 54% still lack proper knowledge. Disaster training is relatively better, with 56% having undergone training, yet 44% remain untrained, posing a risk during emergencies. Awareness about disaster shelters is moderate, with 62% knowing their locations, but 38% still uninformed. The most critical issue lies in emergency communication and preparedness, as 73% of the population lacks access to emergency contact information, and a staggering 88% do not have emergency kits. These findings highlight the need for urgent interventions, including widespread awareness campaigns, expanded disaster training, improved shelter accessibility, enhanced emergency communication, and the promotion of emergency kit usage. Strengthening these areas will significantly enhance the resilience of Makrampur GP against future disasters.

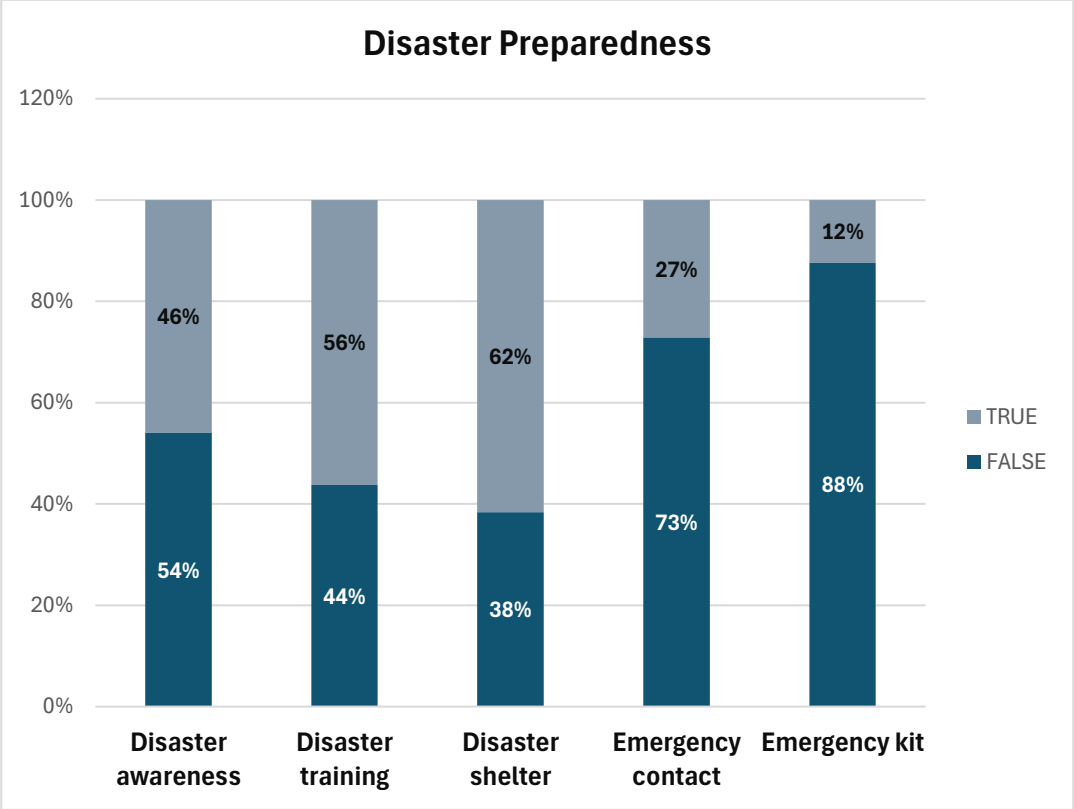

Figure 3-50 Disaster Preparedness

3.7.3. Climate Change resilient strategies for Gram Panchayats

3.8. Localisation of Sustainable Development Goals (SDG)

The state of West Bengal has formulated a comprehensive action plan for the Localisation of Sustainable Development Goals (LSDGs), integrating the 17 United Nations SDGs into its local governance framework through the Panchayat Development Plans (PDPs).

The Department of Planning, Statistics & Programme Monitoring is the nodal department for the Sustainable Development Goals (SDGs) in West Bengal. The state's core strategy for localising these goals involves systematically incorporating the nine themes, which are derived from the 17 SDGs, into the existing process of preparing Panchayat Development Plans for Gram Panchayats (GPs), Panchayat Samitis (PSs), Zilla Parishads (ZPs), and the Siliguri Mahakuma Parishad. The Society for Training & Research on Panchayats & Rural Development (STARPARD) acts as the nodal agency for LSDGs. Institutional Arrangements and Key Nodal Officers. The plan establishes a multi-tier institutional structure to facilitate SDG localisation:

- State Level: The Member Secretary of STARPARD is designated as the State Nodal Officer for LSDGs.
- District Level: The Additional Executive Officer (ZP) / Additional District Magistrate (Panchayat) leads initiatives, with the District Panchayats & Rural Development Officer serving as the District Nodal Officer.
- Block Level: The Block Development Officer (BDO) is the lead, supported by the Joint Block Development Officer (Jt. BDO) as the Block Nodal Officer. Other Extension Officers at this level are appointed as Facilitator Cum Charge Officers (FCCOs) for Gram Panchayats.
- Gram Panchayat Level: The Pradhan, Upa-Pradhan, Executive Assistant, and Secretary take the primary leadership roles. All Elected Representatives (ERs) and employees are actively engaged in the preparation and implementation of the GPDP.
- Committees: The framework includes five Sub-Committees at the Gram Panchayat level and ten standing committees at the Block Panchayat and District Panchayat levels. These committees are assigned roles and responsibilities in accordance with the 29 subjects specified in the 11th Schedule of the Constitution of India and are tasked with preparing draft plans aligned with their activities.

Localisation of SDG (LSDG) Themes and 'Sankalp' Prioritisation. The 17 SDGs have been converged into nine LSDG themes:

1. Poverty Free and Enhanced Livelihoods Village
2. Healthy Village
3. Child-Friendly Village
4. Water Sufficient Village
5. Clean and Green Village
6. Self-Sufficient Infrastructure in a Village
7. Socially Secured Village
8. Village with Good Governance
9. Woman-Friendly Village

Gram Panchayats are required to select at least one, but no more than two, of these themes as their "Sankalp" (resolution or commitment) for a particular year, based on local needs, gaps, and priorities. Historically, most GPs have focused on Theme-6 (Self-sufficient Infrastructure), Theme-5 (Clean & Green), and Theme-4 (Water sufficiency), with minimal adoption of the other six themes, and notably, no GP previously selected the "Woman-Friendly" Theme-9. To address this imbalance and promote holistic development, the Panchayats & Rural Development Department now

emphasises motivating GPs and PSs to adopt the underrepresented six themes on a rotational basis. It is also recommended that all Gram Panchayats within a particular Block adopt the same "Sankalp" Theme to ensure focused development.

For each theme chosen as "Sankalp," GPs must earmark 25% of the relevant activities listed under that theme and dedicate 25% of their total untied funds (including grants from the 15th Finance Commission, State Finance Commission, and Own Source Revenue). If two themes are selected, 50% of the untied funds are to be allocated

3.8.1. Current SDG Theme(s) GP is adapting

Following the implementation of LSDG in West Bengal, this year, Makrampur GP has been focused on activities under Theme 5 - Clean and Green Village, Theme 6 - Self-sufficient Infrastructure in Village, Theme 7 - Socially Just and Socially Secured Village and Theme 8 - Village with Good Governance. From 2024-25 onwards, Makrampur GP has been diversifying its SDG Localisation activities into other themes as shown in the table below.

Table 3. 3-23. LSDGs Theme-based activities as undertaken at Aguibani GP

S.No.	Output Type	2023-24	2024-25	2025-26
1	Theme 1 - Poverty Free and Enhanced Livelihoods Village	NA	NA	0
2	Theme 2 - Healthy Village	NA	NA	0
3	Theme 3 - Child Friendly Village	NA	NA	0
4	Theme 4 - Water Sufficient Village	NA	NA	0
5	Theme 5 - Clean and Green Village	NA	NA	18
6	Theme 6 - Self-sufficient Infrastructure in Village	NA	NA	60
7	Theme 7 - Socially Just and Socially Secured Village	NA	NA	36
8	Theme 8 - Village with Good Governance	NA	NA	5
9	Theme 9 - Women Friendly Village	NA	NA	0

3.8.2. Progress towards SDG

The following matrix outlines key SDG linkages based on proposed activities:

Table 3-24 Themes and proposed activities and projects

S.No.	Theme Types	Proposed Projects and Activities
1	Theme 1 - Poverty Free and Enhanced Livelihoods Village	Creation of community run stalls, skill based workshops, mobile oil extraction unit, Branding Hub, Eco-tourism center and artisan outlets enhancing rural livelihoods
2	Theme 2 - Healthy Village	Upgradation of football grounds and sanitation infrastructure
3	Theme 3 - Child-Friendly Village	Community event grounds including Birhandi Durga Puja Mela and multi-purpose playground
4	Theme 4 - Water Sufficient Village	Water body rejuvenation and piped water supply proposals
5	Theme 5 - Clean and Green Village	Nature trail development, plantation drives, Solid waste management provisions under SBM and drain construction proposals

6	Theme 6 - Self-sufficient Infrastructure in Village	Piped water supply, water tanks at hilly areas, borewells, Upgraded internal roads and Footpath
7	Theme 7 - Socially Just and Socially Secure Village	Tribal representation through cultural spaces, fair (event) space
8	Theme 8 - Village with Good Governance	Use of GIS in zoning and Transparent budgeting structure
9	Theme 9 - Women-Friendly Village	Economic spaces for women-led enterprises and Inclusion in workshops and capacity-building sessions

3.8.3. Identified Roadblocks/Gaps in achieving the SDG

Key roadblocks identified are:

- Skewed Theme Prioritisation: There has been a significant imbalance in the selection of "Sankalp" (resolutions or commitments) by Gram Panchayats at the State Level.
- Over-emphasis on Infrastructure and Basic Services: The majority of Gram Panchayats have predominantly focused on just three of the nine LSDG themes. At the state level, approximately 92% of GPs selected "Sankalp" themes related to Infrastructure (Theme-6), Clean & Green (Theme-5), and Water Sufficiency (Theme-4). Specifically, 74% of GPs emphasised "Self-sufficient Infrastructure" (Theme-6), while 10% focused on "Clean & Green Village" (Theme-5), and 8% on "Water Sufficient Village" (Theme-4). This selection pattern was also true in the case of Aguibani GP.
- Neglect of Social and Governance Themes: A very small percentage of GPs, only 8%, adopted the remaining six LSDG themes as their "Sankalp." These neglected themes include Poverty-free (Theme-1), Healthy (Theme-2), Child-friendly (Theme-3), Socially Secured (Theme-7), Good Governance (Theme-8), and Women-friendly (Theme-9).
- Complete Omission of "Woman-Friendly Village" Theme: Notably, no Gram Panchayat had previously selected the "Woman-Friendly Village" (Theme-9) as a "Sankalp" at the state level. This indicates a significant gap in addressing gender-specific development at the local level. Aguibani GP has proactively selected Theme-9 in 2024-25 onwards.
- Modification of "Sankalp": It has also been observed that the "Sankalp" (commitment) taken by Gram Panchayats is sometimes modified at a later stage, suggesting potential challenges in consistent implementation or adherence to initial plans.
- To address these issues and promote holistic development with equitable distribution of "Sankalp" themes, the Panchayats & Rural Development Department now emphasises motivating Gram Panchayats and Panchayat Samitis

to adopt the underrepresented six themes on a rotational basis. It is also suggested that all Gram Panchayats within a particular Block adopt the same "Sankalp" Theme to ensure focused development. Further, there is a need for capacity building and training initiatives for activity planning.

3.9. Gram Panchayat Finance Profile

3.9.1. Assessment of Gram Panchayat Finance

3.9.1.1. Accounting and budgeting system

This section analyses Makrampur GP's financial management across six fiscal years (2020-21 to 2025-26), including fund allocation, revenue sources, expenditure trends, and implementation capacity. All data is derived directly from (egramswaraj.gov.in).

Key Characteristics

Multi-Scheme Integration.

Budget estimates and actual allocations are disaggregated across over 13 schemes as listed in below table.

Table 3-25 Fund Allocations from Schemes

	Sr.No.	Scheme Name
Makrampur, Narayangarh, Paschim Medinipur	1	4th State Finance Commission (West Bengal)
	2	5th State Finance Commission (West Bengal)
	3	Contingency (West Bengal)
	4	GP Staff Salary (West Bengal)
	5	Grant for Five Year Plan (West Bengal)
	6	Grant In Aid Establishment (West Bengal)
	7	MG National Rural Employment Guarantee Act
	8	National Social Assistance Programme
	9	Own Funds
	10	Rashtriya Gram Swaraj Abhiyan
	11	SAHAY (West Bengal)
	12	Swachh Bharat Mission
	13	XV Finance Commission

(Source: https://egramswaraj.gov.in)

For each scheme, allocations were recorded separately for every financial year, indicating the Panchayat's use of a disaggregated and traceable budgeting model.

Year-wise Budgeting Consistency

Budget entries were maintained consistently over six years, with the following trends:

- XV Finance Commission showed the highest and most consistent allocations every year: ₹10.746 Cr (2020-21) to ₹10.46 Cr (2025-26).

- MGNREGA received substantial allocations in the first three years: ₹ 2.361 Cr (2020-21), ₹ 2.499 Cr (2021-22), and ₹10.857 Cr (2022-23), with no budgeted funds in subsequent years.
- Own Funds remained steady at around ₹ 0.12-₹ 0.15 Cr annually throughout the six-year period.
- Schemes like SAHAY and Rashtriya Gram Swaraj Abhiyan had negligible and non-recurring allocations.
- 5th State Finance Commission (WB) allocations started in 2024-25, with ₹ 0.4 Cr and ₹ 0.41 Cr budgeted for 2025-26.

This demonstrates the Panchayat's ability to forecast and record scheme-specific allocations systematically, even as fund availability fluctuated across years.

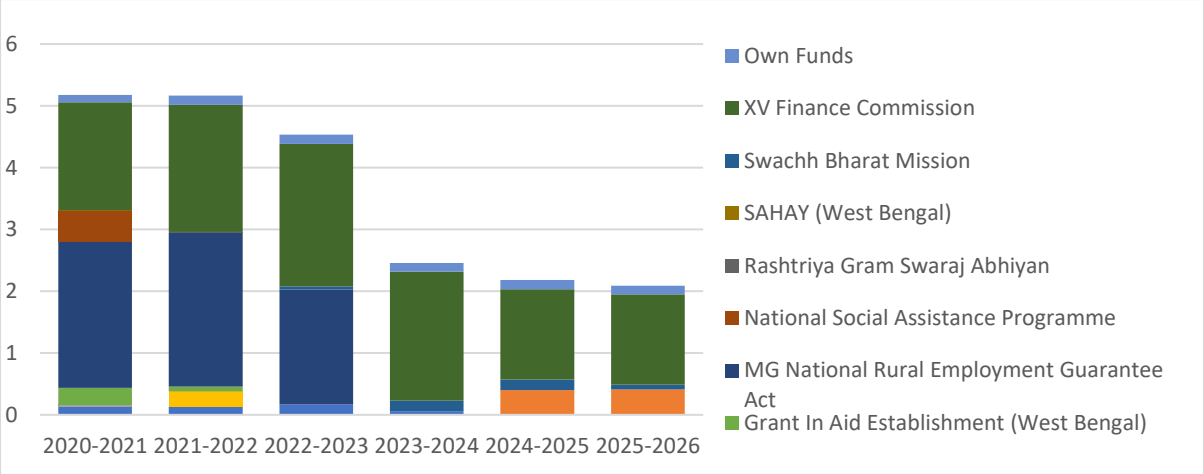

Figure 3-51 Scheme-wise Budgeted Allocation Trend (2020-2026)

(Source: https://egramswaraj.gov.in)

Observations on Budget Utilization Capacity:

Some schemes, including Swachh Bharat Mission, showed delayed budget appearance first appearing with ₹ 0.054 Cr in 2022-23 and increasing to ₹ 0.17 Cr in subsequent years. Others like GP Staff Salary, budgeted at ₹ 0.24 Cr in 2021-22, appeared only once in the six-year cycle.

Table 3-26 Actual Fund Allocation

Actual Allocation (In Crore)							
S. No.	Scheme Name	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
1	4th State Finance Commision(West Bengal)	0.137	0.1366	0.1689	0.06	0	0
2	5th State Finance Commission(West Bengal)	0	0	0	0	0.4	0.41
3	Contingency(West Bengal)	0.02	0	0	0	0	0
4	GP Staff Salary(West Bengal)	0	0.24	0	0	0	0

5	Grant for Five Year Plan(West Bengal)	0.001	0	0	0	0	0
6	Grant In Aid Establishment(West Bengal)	0.2803	0.0803	0	0	0	0
7	MG National Rural Employment Guarantee Act	2.3606	2.4991	1.8566	0	0	0
8	National Social Assistance Programme	0.504	0	0	0	0	0
9	Own Funds	0.12	0.15	0.15	0.1416	0.1501	0.138
10	Rashtriya Gram Swaraj Abhiyan	0	0.005	0.0000	0	0	0
11	SAHAY(West Bengal)	0.01	0	0	0	0	0
12	Swachh Bharat Mission	0	0	0.054	0.17	0.17	0.08
13	XV Finance Commission	1.4598	1.4598	1.4598	1.4598	1.4598	1.4598

(Source: https://egramswaraj.gov.in)

3.9.1.2. Panchayat Fund Statement

The fund statement of Makrampur Gram Panchayat for the period 2020-2021 to 2025-2026 presents a detailed overview of scheme-wise financial inflows. The funds were received under central, state, and local sources, with varied consistency across years.

Total Funds Received (in ₹ Crore):

Table 3-27 Total Fund Received by Makrampur GP

Financial Year	Total Inflow
2020-2021	5.18
2021-2022	5.17
2022-2023	4.53
2023-2024	2.46
2024-2025	2.18
2025-2026	2.09

(Source: https://egramswaraj.gov.in)

There is a consistent decrease in total fund inflow from 2021-22 to 2025-26, primarily due to the phasing out of high-volume schemes like MGNREGA and Grant-in-Aid Establishment.

Major Contributors:

Across the six-year period, the highest cumulative allocations were received from:

- XV Finance Commission: 1.11 Cr
- MGNREGA:.72 Cr
- Own Funds:.85 Cr

- Grant-in-Aid Establishment (State): ₹.36 Cr
- Swachh Bharat Mission:.47 Cr

Other schemes contributed smaller or irregular amounts, such as SAHAY, Rashtriya Gram Swaraj Abhiyan, and Contingency Funds.

3.9.1.3. Annual Financial Demand Estimated by the Gram Panchayat

Makrampur Gram Panchayat's annual financial planning reflects a multi-sectoral approach grounded in core service delivery needs. The estimated demand comprises allocations proposed across priority sectors such as drinking water, roads, sanitation, education, and social welfare. The annual outlay suggests a gradual contraction in the size of financial estimates over the years, in line with declining fund inflow trends post-2021-22.

Top Sectors Receiving Estimated Allocations:

Over six years, the following sectors consistently received significant budgetary attention:

- Roads:.39 Cr (highest cumulative allocation across years)
- Drinking Water:.41 Cr
- Sanitation:.18 Cr
- Administrative & Technical Support: 65 Cr
- Social Welfare & Women Development Combined:.05 Cr

Smaller allocations were made in sectors such as education, water conservation, and GP office infrastructure, tailored to year-specific requirements.

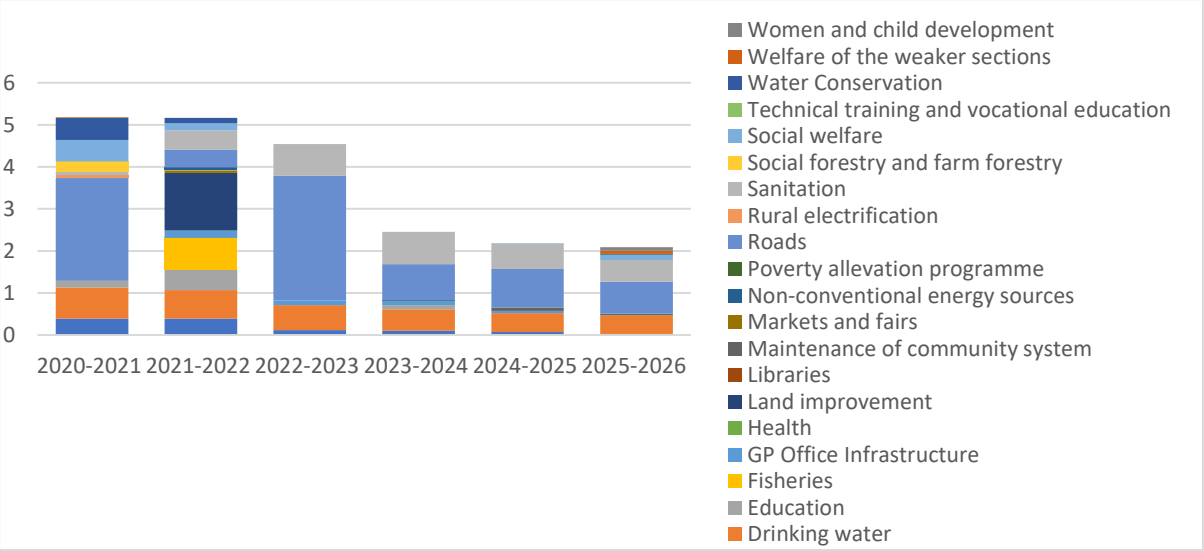

Figure 3-52 Sectoral Plan Outlay (Fund Allocation in crore)

(Source: https://egramswaraj.gov.in)

3.9.1.4. Panchayat Capital & Revenue Income (including collection efficiency)

Makrampur Gram Panchayat's income sources over the six-year period comprise a blend of central and state transfers (considered capital grants), own-source revenues (largely recurring and revenue-based), and non-tax income under welfare schemes. These financial inflows form the foundation for service delivery, asset creation, and administrative operations. Total Income is shown in Table 3-26 Actual Fund Allocation and Table 3-27 Total Fund Received by Makrampur GP.

3.9.1.4.1. Income from Taxes

Own-source revenues remained a small but consistent component of the GP's total income. Recorded under the "Own Funds" head, these include taxes and fees collected locally, etc.

Table 3-28 Year wise own fund

Year	Own Funds
2020-2021	0.12
2021-2022	0.15
2022-2023	0.15
2023-2024	0.142
2024-2025	0.15
2025-2026	0.138

(Source: https://egramswaraj.gov.in)

The values indicate near-flat performance in tax collection, averaging ~14 Cr per year, reflecting modest own-revenue generation capacity.

3.9.1.4.2. Non-Taxable Income

Non-tax income includes recurring and non-recurring inflows from centrally and state-sponsored schemes:

- XV Finance Commission: Highest contribution across all years—.746 Cr (2020-21) to.46 Cr (2025-26).
- MGNREGA: High allocations in first three years—0.361 Cr (2020-21),.499 Cr (2021-22), 857 Cr (2022-23)
- Swachh Bharat Mission: Began in 2022-23 with 0.054 Cr, gradually increasing to ₹0.17 Cr by 2024-25.

These transfers accounted for over 80% of total income, signifying high dependence on external support for both asset-based and welfare-linked programs.

3.9.1.5. Panchayat Expenditure (including O&M Expense and Establishment Expense)

The expenditure profile of Makrampur Gram Panchayat reflects targeted spending across priority service sectors, operations & maintenance (O&M), and administrative establishment heads. The year-wise data confirms alignment between fund receipt and disbursement, with gradual shifts in spending toward sanitation, drinking water, and asset maintenance post-2022-23.

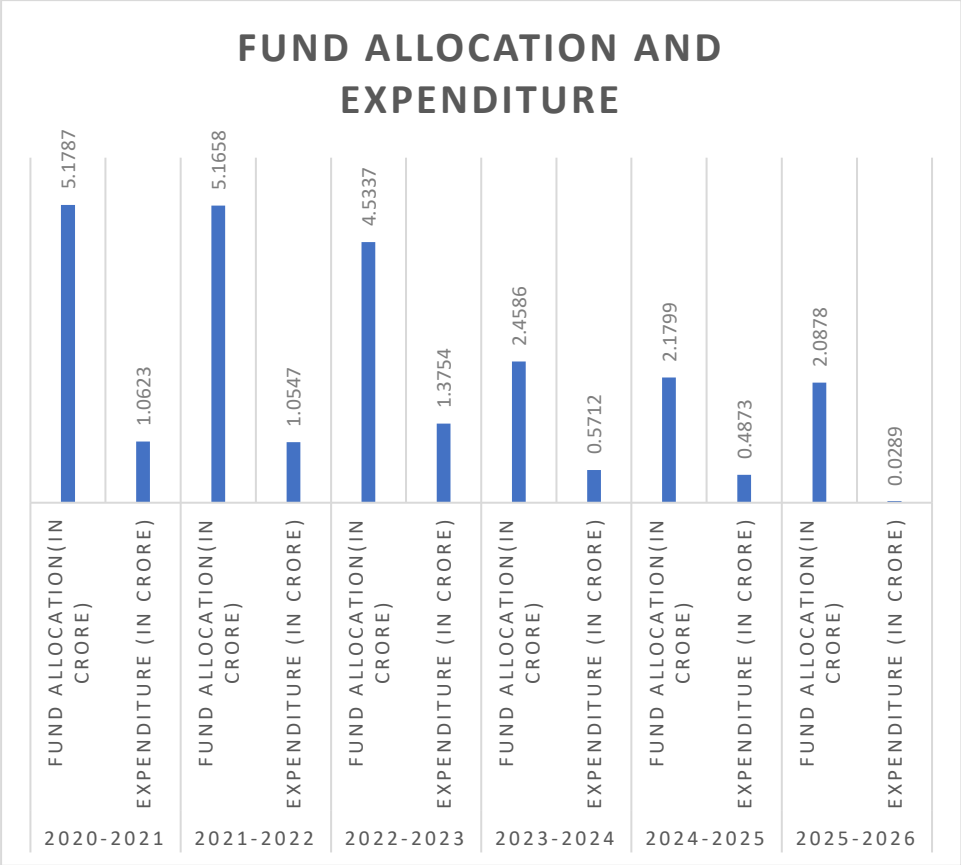

Figure 3-53 Comparison between Fund Allocation and Expenditure

(Source: https://egramswaraj.gov.in)

While fund allocations remained above ₹ 2 Cr annually, actual expenditure ranged between ₹ 0.49-₹1.38 Cr, indicating partial absorption and implementation capacity.

Sectoral Expenditure Highlights:

Table 3-29 Major Sectoral Fund allocations

Sector	Cumulative Spending (2020-2026)
Roads	₹6.32 Cr

Drinking Water	₹3.41 Cr
Sanitation	₹3.14 Cr
Admin & Technical Support	₹1.15 Cr
Social Welfare & Women Dev.	₹1.02 Cr
GP Office Infrastructure	₹0.54 Cr

(Source: https://egramswaraj.gov.in)

The majority of spending was directed toward **physical infrastructure** (roads, water, sanitation), supplemented by basic administration, social programs, and establishment expenses.

3.9.1.6. Financial Capacity of the Gram Panchayat to implement the projects each year

The financial capacity of **Makrampur Gram Panchayat** has been analysed through comparative trends in yearly fund allocations and actual expenditures. This analysis provides insight into the Panchayat's ability to absorb financial inflows and execute development projects efficiently.

Comparison between Allocation and Expenditure (2020-2026):

Table 3-30 Fund Utilization Rate

Financial Year	Allocated Funds (₹ Cr)	Actual Expenditure (₹ Cr)	Utilization Rate (%)
2020- 2021	5.18	1.06	20%
2021-2022	5.17	1.05	20%
2022-2023	4.53	1.38	30%
2023-2024	2.46	0.57	23%
2024-2025	2.18	0.49	22%
2025-2026	2.09	0.03	~1%

(Source: https://egramswaraj.gov.in)

Although allocated funds averaged more than ₹2 crore annually during the later years, utilization remained below one-third in most years, revealing a moderate implementation capacity.

Executable Capacity Estimate

From FY 2023-24 onwards, allocation levels stabilized at approximately **₹2 crore annually**, largely supported by consistent inflows from the **XV Finance Commission** and **Own Funds**. If administrative execution improves, and fund releases are timely, it is reasonable to estimate that the Gram Panchayat holds the capacity to implement **projects worth ₹2 crore per year**.

This threshold assumes:

- Full scheme convergence.
- Timely project approval and fund disbursement.
- Active monitoring and staff availability.

Such an estimate can be used to phase capital-intensive modules and prioritize high-impact proposals under the GPSDP framework.

3.9.1.7. Key observations

Based on the Panchayat's six-year financial data, several notable trends and operational insights have emerged:

- **Reliance on Central Funds:**

The XV Finance Commission remains the most stable and substantial funding source, contributing ₹1.46 Cr annually across all years. This heavy dependency on central transfers indicates limited financial autonomy and vulnerability to policy shifts or delayed releases.

- **Stagnant Own Source Revenue (OSR)**

Income from Own Funds averaged just ₹0.14 Cr annually, with negligible year-on-year growth. Despite continuous local activity, there has been no significant increase in tax or fee collection, pointing to constrained internal resource mobilization.

- **Underutilization of Allocated Funds**

Fund utilization ranged from 20-30% in most years, except a sharp drop to ~1% in 2025-26, highlighting issues with fund absorption capacity. Multiple schemes recorded partial or zero expenditure despite receiving allocations. E.g., MGNREGA, SAHAY, Swachh Bharat Mission suggesting implementation or administrative bottlenecks.

- **Sectoral Prioritization**

Roads, drinking water, and sanitation together accounted for over 70% of total financial demand. Welfare sectors such as education, health, and women's development received lower allocations, highlighting potential service gaps.

- **Transition Toward Maintenance Focus**

Post-2022-23, the Panchayat's financial demand and spending progressively shifted toward maintenance-heavy sectors (e.g., sanitation, water conservation), rather than new asset creation. This reflects a maturity in planning, but also a need to ensure sustainability and upkeep of existing infrastructure.

- **Estimated Execution Threshold**

With fund allocations stabilizing at ~₹2 Cr annually from FY 2023-24 onward, and consistent XV Finance Commission support, the Panchayat holds potential to implement projects worth ₹2 Cr per year, assuming administrative and release conditions are optimized.

3.9.1.8. Identified Issues

The financial analysis of Makrampur Gram Panchayat (2020-2026) reveals several structural, operational, and execution-related challenges that may hinder the effective implementation of GPSDP modules and future development plans.

- **Low Utilization Rates**

Despite consistent annual allocations—averaging over ₹2 crore in recent years—the Panchayat utilized only 20-30% of available funds in most years, with a sharp decline to ~1% in FY 2025-26. This underutilization reflects bottlenecks in administrative execution, fund absorption, or implementation scheduling.

- **Fragmented Resource Mobilization**

Own Funds remain stagnant at ~₹0.14 crore per year, indicating limited internal tax generation, fee collection, or resource innovation. This creates long-term dependency on external grants and restricts financial autonomy.

- **Inconsistent Scheme Implementation**

Schemes such as SAHAY, GP Staff Salary, and Rashtriya Gram Swaraj Abhiyan show either non-recurring allocations or zero expenditure. This pattern points to inefficiencies in sanction procedures, fund release timing, or relevance in local context.

- **Lack of Prioritization for Social and Institutional Sectors**

Sectors like education, health, women and child development, and vocational training consistently received the lowest allocations, despite policy emphasis. The Gram Panchayat's sectoral plan outlay shows disproportionate focus on infrastructure, leaving essential human development modules underfunded.

- **Absence of Performance-linked Budgeting**

There is no evidence of budget adjustments based on prior year's utilization or achievement, resulting in a static planning cycle and recurring inefficiencies.

- **Declining Demand Projection**

Annual demand reduced from ₹5.18 Cr in FY 2020-21 to ₹2.09 Cr in FY 2025-26, potentially signalling lower capacity or limited vision for scaling development initiatives.

3.10. Capacity Building of the Gram Panchayat

3.10.1. Need for Capacity Building of the GP

The GP SHGs have highlighted the need to update the residents and train them in areas such as:

• Digital awareness and inclusion.

• Skill development and employment support.

• Revival of traditional livelihoods.

• Better irrigation, roads, and healthcare.

• Skilling for Housing and sanitation upgrades.

• Wildlife conflict management.

3.10.2. Current Status and Identified Capacity Building Requirements of the GP

At present, there are initiatives undertaken to upskill people through the GP office.

3.11. Gram Panchayat Development Plan (GPDP) and People's Plan Campaign

(please refer to **https://gpdp.nic.in/** or kindly discuss with GP)

3.11.1. Record of meetings held under PPC & GPDP preparation

3.11.2. Frequency of meetings held and departments that attended the meetings

3.11.3. Brief Analysis of prepared GPDP

3.11.4. Key observations

3.11.5. Identified Issues

4. NOISE Analysis

The NOISE (Needs, Opportunities, Improvements, Strengths, and Exceptions) analysis provides a strategic assessment of Makrampur Gram Panchayat (GP) by evaluating key development aspects across multiple sectors. This analysis helps in identifying priorities and planning sustainable improvements for the region.

4.1. Needs (N)

- **Demography & Culture:** Strategies for managing population growth, promoting cultural integration, and enhancing gender equity in governance and employment.
- **Socioeconomic Development:** Employment diversification, skill development programs, women's workforce participation, and strengthening Self-Help Groups (SHGs).
- **Economic Profile:** Improved market access, financial literacy, and structured economic activities to boost income levels.
- **Agriculture & Irrigation:** Expansion of irrigation facilities, crop diversification, and soil conservation initiatives.
- **Housing & Infrastructure:** Upgradation of kachcha houses, improved sanitation, better water supply, and electricity infrastructure enhancement.
- **Transportation & Road Network:** Road widening, better public transport connectivity, dedicated freight routes, and pedestrian infrastructure.
- **Social Infrastructure:** Expansion of education, healthcare, financial, and cultural facilities, along with improved fire safety measures.
- **Heritage & Culture:** Documentation and preservation of historical sites, beautification of Hawai Mahal, and establishment of a tribal cultural centre.
- **Environment & Disaster Management:** Flood mitigation, pond conservation, forest protection, and disaster preparedness programs.

4.2. Opportunities (O)

- **Government Schemes & Institutional Support:** Leveraging programs like PMAY, DDU-GKY, Jal Jeevan Mission, and rural entrepreneurship schemes for infrastructure and economic growth.
- **Economic Expansion:** SHGs, microfinance, and cooperative models to enhance employment and business opportunities.
- **Sustainable Agriculture & Market Linkages:** Introduction of climate-resilient crops, organic farming subsidies, and establishment of Farmer Producer Organizations (FPOs).

- **Infrastructure Development:** Renewable energy solutions, improved transport networks, and expanded digital infrastructure for education and healthcare.
- **Cultural Promotion & Tourism:** Strengthening local festivals, historical site conservation, and tribal heritage documentation to attract visitors.
- **Environmental Sustainability & Disaster Resilience:** Strengthening flood control structures, community-based waste management, and eco-friendly construction practices.

4.3 Improvements (I)

- **Demographic & Social Planning:** Conducting regular surveys, promoting awareness programs, and implementing gender-inclusive policies.
- **Economic Strengthening:** Encouraging entrepreneurship, developing digital marketing for SHGs, and integrating local businesses into regional markets.
- **Agricultural Advancements:** Expanding irrigation networks, introducing modern farming techniques, and ensuring structured financial support for farmers.
- **Housing & Public Infrastructure:** Upgrading houses, implementing structured waste collection, strengthening electricity distribution, and improving sanitation systems.
- **Transport & Connectivity Enhancements:** Upgrading roads, introducing organized public transport schedules, and expanding pedestrian safety measures.
- **Social & Cultural Development:** Renovation of schools, upgrading healthcare centres, and promoting cultural and heritage initiatives.
- **Environmental Conservation:** Flood protection, afforestation, and waste management improvements to protect local ecosystems.

4.4 Strengths (S)

- **Cultural & Social Cohesion:** High community participation, diverse cultural traditions, and active involvement in governance.
- **Existing SHG Networks & Economic Foundations:** Over 370 operational SHGs and strong local market presence.
- **Agricultural & Natural Resources:** Fertile land, existing farmer cooperatives, and local fisheries contributing to the economy.
- **Infrastructure & Connectivity:** Defined Road networks, PMGSY roads, and solar-powered solutions for energy efficiency.

- **Educational & Health Facilities:** Presence of Anganwadi's, playgrounds, primary health centres, and banking services.

4.5. Exceptions (E)

- **Urbanization vs. Traditional Practices:** While traditions continue, modernisation is shifting social structures and economic activities.
- **Infrastructure Gaps:** Some government programs exist but have limited coverage, such as housing schemes, public transport, and waste management.
- **Seasonal Employment Challenges:** Job opportunities fluctuate, and SHGs need institutional support for long-term sustainability.
- **Environmental Concerns:** Flooding remains an issue despite mitigation efforts, and water contamination affects public health and fisheries.

5. Development VISION of the GP

To build an inclusive, self-reliant, and resilient Gram Panchayat with improved basic services, sustainable livelihoods, and strong community participation, ensuring equitable development and environmental conservation for all.

Makrampur Gram Panchayat envisions becoming a model rural community by enhancing infrastructure, promoting diversified and sustainable livelihoods, ensuring social equity, and strengthening disaster resilience.

6. Land Suitability Analysis

6.1. Factors/Criteria considered for Land Suitability Analysis

The land suitability assessment was carried out using a multi-criteria evaluation approach, specifically the Analytic Hierarchy Process (AHP). Key factors considered in this analysis include:

- **Proximity to Roads (51.6% weightage):** Critical for access, logistics, and infrastructure development.
- **Proximity to Waterbodies (22.9%):** Ensures availability of water to encourage and support development.
- **Proximity to Settlements (12.6%):** Encourages compact and efficient urban expansion, minimizing urban sprawl.
- **Distance from Forests (9.0%):** Avoids encroachment and protects ecological zones.

Table 6-1 Pairwise Comparison Matrix

Pairwise Comparison Matrix				
	Roads	**Water**	**Settlement**	**Forest**
Roads	1	6	2	6
Water	1/6	1	1/6	1
Settlement	1/2	6	1	4
Forest	1/6	1	1/4	1
Consistency Index: 0.017				

(Source: Author)

The Consistency Index (CI) for the AHP model was calculated at 0.03, confirming a high level of consistency and reliability in the criteria weighting process.

6.2. Land Suitability Analysis

6.2.1. Identifying Land Environmental/Ecological Sensitive

To protect environmentally significant areas, the following buffer zones were applied:

- **500-meter buffer from all forest areas.**

These areas were designated as environmentally sensitive and non-developable zones. The exclusion of these zones from the suitability analysis helps in preserving critical ecosystems, preventing degradation, and complying with sustainable land-use planning principles.

6.2.2. Identifying Land Suitable for Agriculture and Allied Activities

A land suitability analysis was conducted using GIS-based multi-criteria evaluation methods to determine the areas that are most suitable for agriculture and allied rural livelihoods within Makrampur Gram Panchayat. This analysis considered factors such as road, land cover, and proximity to water sources and settlements.

As represented in the map, areas have been classified into four suitability categories. The most productive land is concentrated around the central and western parts of the GP, often in proximity to existing agricultural clusters and irrigation sources. These zones are recommended to be preserved and promoted for food production, horticulture, and allied activities.

Table 6-2 Pairwise Comparison Matrix

Pairwise Comparison Matrix			
	Roads	**Water**	**Settlement**
Roads	1	1/2	1
Water	2	1	1
Settlement	1	1	1
Consistency Index: 0.046			

(Source: Author)

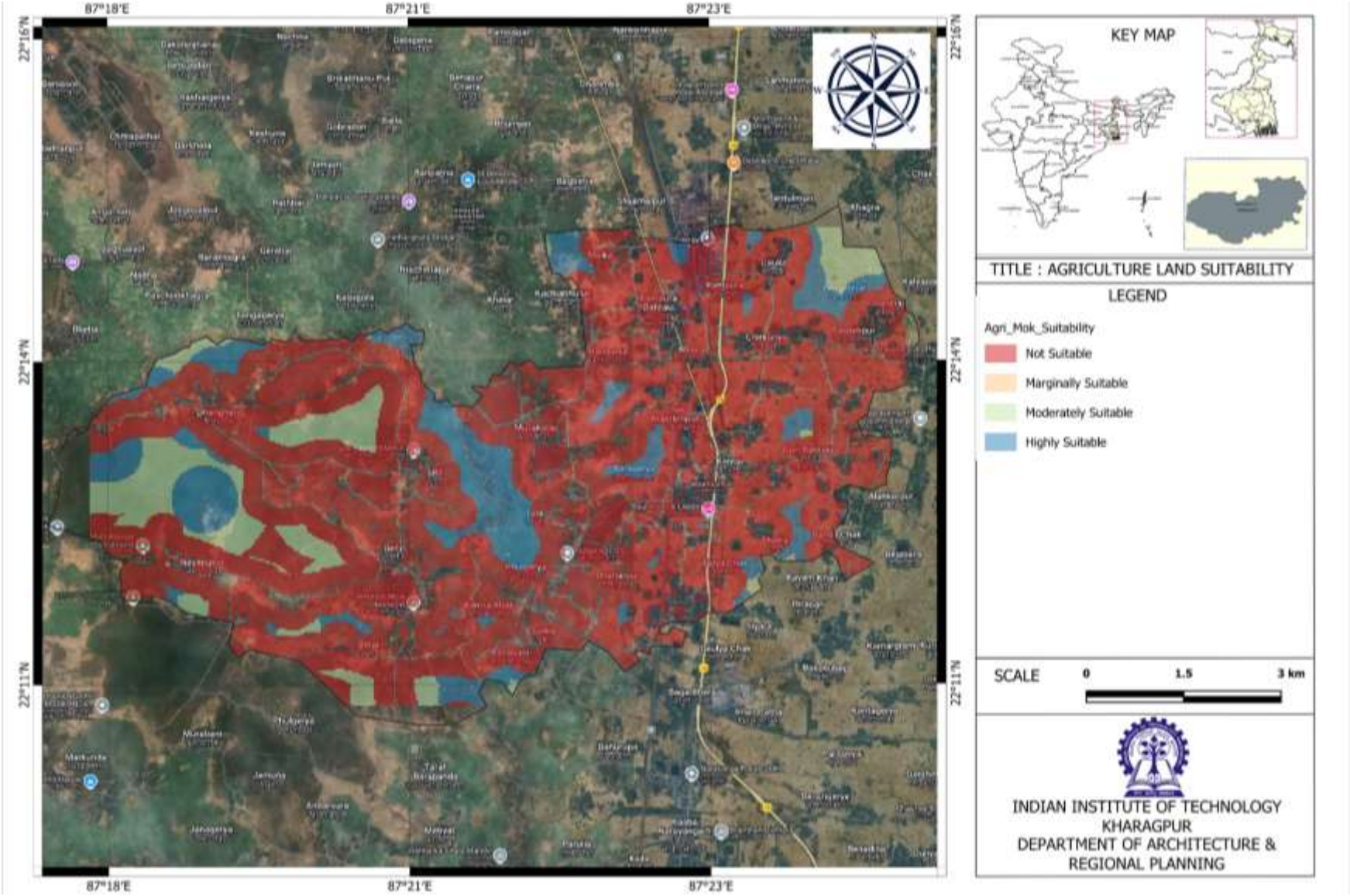

Figure 6-1 Land Suitability map for Agriculture and Allied Activities

6.2.2.1. Assessment of how much Agri-Land can be considered for development with time and how much should be conserved for food security

6.2.3. Identification of Land Suitable for Development Purposes

The final Land Suitability Map for Development was generated using weighted overlays in GIS, applying the AHP-derived weights.

Key considerations:

- Development suitability increases with proximity to roads, waterbodies and settlements.
- Environmentally sensitive (forest) areas were excluded to maintain ecological integrity.
- Suitable land was categorized into Highly Suitable, Moderately Suitable, Marginally Suitable, Unsuitable and highly unsuitable potential for development

Figure 6-2 Land suitability Map aids in identifying spatial priorities for future urban growth, infrastructure planning, and zoning regulations.

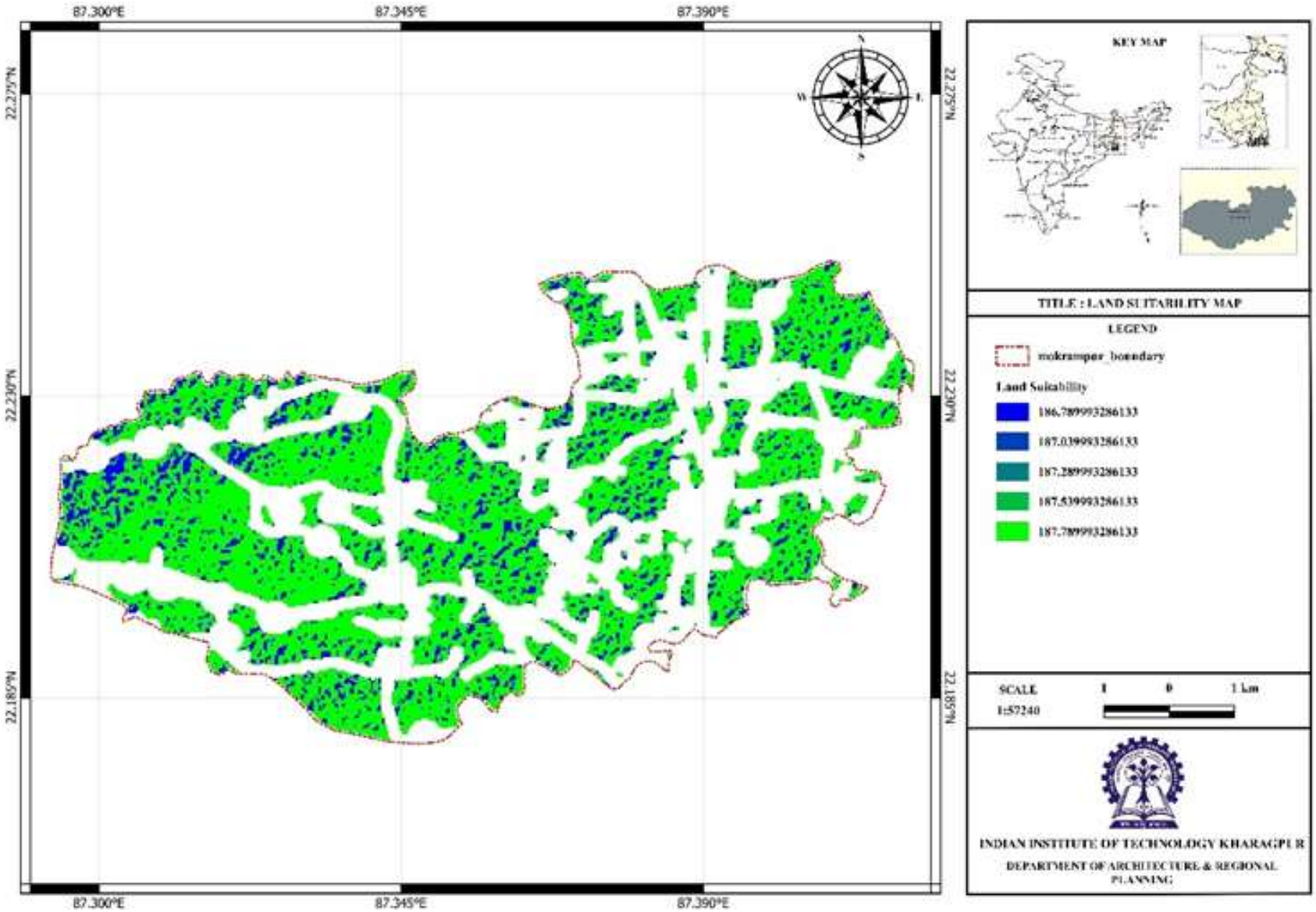

Figure 6-2 Land suitability Map

7. Proposed Land Zoning and Land Use Plan

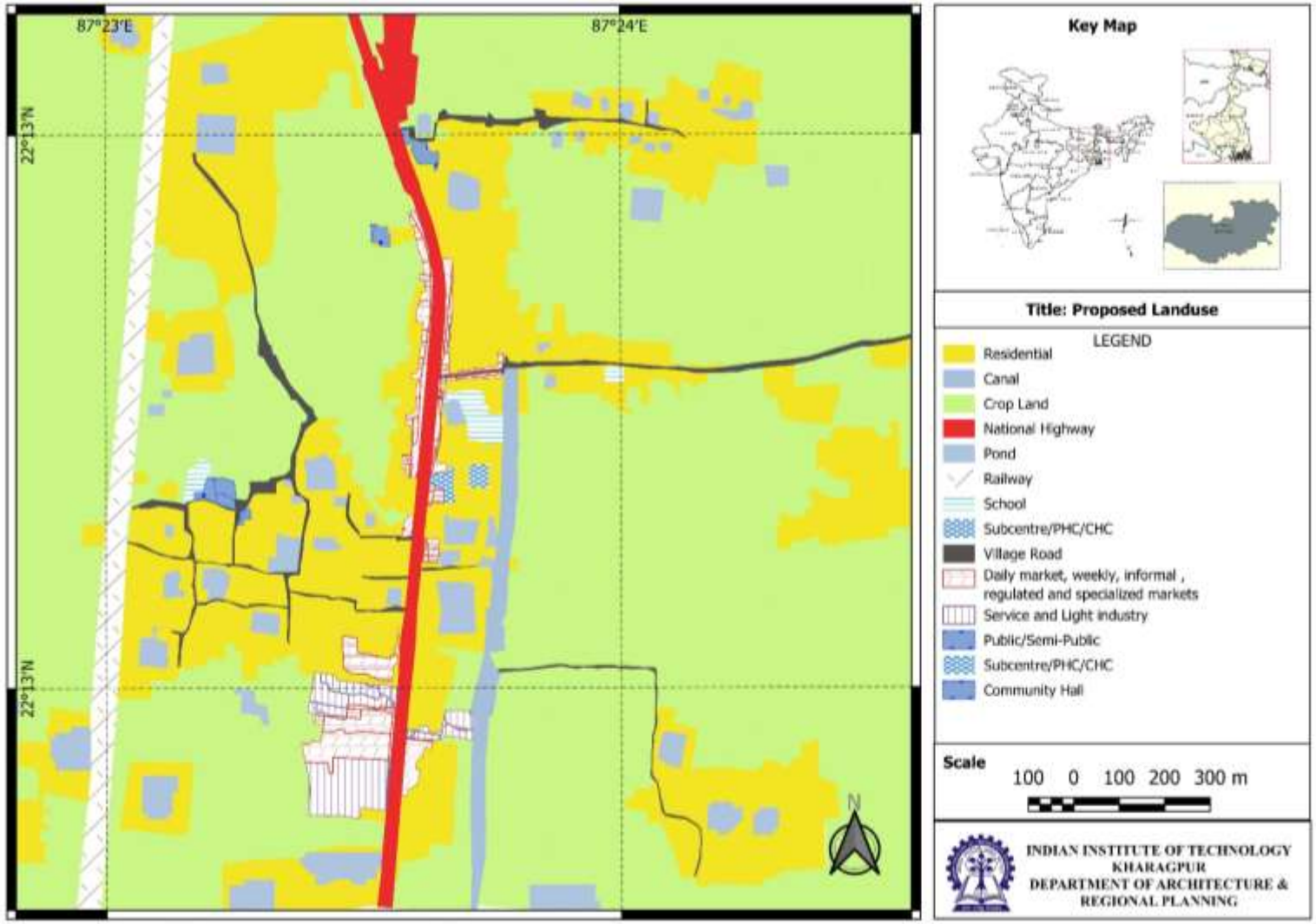

Figure 7-1 Proposed Land Use

The proposed land zoning and land use strategy for Makrampur Gram Panchayat presents a spatial framework for inclusive development, ecological sustainability, and service accessibility. It integrates identified priority projects across GP and Block levels into land-use categories that support infrastructure, livelihoods, heritage conservation, and environmental resilience. The zoning plan has been prepared based on GIS-based land suitability analysis, stakeholder consultations, and project feasibility assessments.

Gram Panchayat-Level Projects

These projects focus on heritage enhancement and environmental regeneration, with localized impacts on tourism, ecology, and community aesthetics.

1. **Belti Old Queen Palace Development**

- Zoning Category: Cultural-Heritage Zone
- Location: Southern-central region near Keleghai River
- Purpose: Restoration of heritage structures, development of eco-trails and interpretation signage
- Planning Notes: Positioned to activate tourism, promote cultural identity, and create livelihood opportunities through heritage-linked enterprises

2. **Lake Rejuvenation**

- Zoning Category: Ecological & Water Body Zone
- Location: Lakes and ponds around Belti, Binai, and central habitations
- Purpose: Improve water quality, enhance flood mitigation, restore biodiversity
- Planning Notes: Includes edge protection, desilting, guard wall retrofitting, and landscape integration

Block-Level Projects

These projects aim to strengthen health, education, economic infrastructure, and cultural engagement at a wider scale, benefiting multiple Gram Panchayats within Narayangarh Block.

1. **Primary School**

- Zoning Category: Institutional Zone
- Purpose: Close service gaps in primary education access
- Location Criteria: Centrally placed for connectivity and catchment efficiency

2. **Primary Health Center (PHC)**

- Zoning Category: Institutional and Health Services Zone
- Purpose: Provide basic and emergency healthcare services at the block level

- Location Criteria: Core settlement area with linkages to regional referral centres

3. **Pond Rejuvenation**

- Zoning Category: Ecological Preservation Zone
- Purpose: Support sanitation, climate resilience, and groundwater recharge
- Location Criteria: Low-lying and flood-prone zones identified in GIS analysis

4. **Village Haat and Agro-Processing Hub**

- Zoning Category: Commercial and Agro-Industrial Zone
- Purpose: Promote SHG-led commerce, sal-leaf processing, and rural entrepreneurship
- Location Criteria: Southern quadrant near NH-16 junction and Shah Marbles

5. **Cultural Center**

- Zoning Category: Public and Recreational Zone
- Purpose: Enable community events, tribal festivals, skill training, and social inclusion
- Location Criteria: Adjacent to heritage sites and high-footfall open spaces

Spatial Planning Considerations

Buffer zones around forest-edge villages (e.g., Dhangari) to restrict unregulated development

Application of AHP-weighted land suitability overlays for project siting

The proposed land zoning and land use plan establishes a cohesive spatial development strategy that aligns project implementation with functional zones, community priorities, and ecological safeguards. It guides both short- and long-term infrastructure investments under the GPSDP, ensuring that Makrampur transitions into a well-serviced, resilient, and heritage-aware rural governance unit.

8. Development Themes, Modules and Detailed Proposals Identification

Infrastructure Module (Physical/Social/Environmental)

- Planning solid waste management through door-to-door collection, provision of segregation bins, establishment of community composting units, recycling centers, and a small-scale landfill.
- Developing decentralized sewerage infrastructure, including shallow drains, bore sewers, DEWATS, SPS, UASB, and soak pits to ensure effective sanitation.
- Providing universal access to water supply by expanding tap connections to all households, ensuring equitable and safe drinking water.
- Allocating land for key infrastructure needs such as 600 sq.m compost units, 0.3-0.5 ha DEWATS, 2 ha SPS, and <0.2 ha landfill to support sustainable service delivery.
- Enhancing environmental resource management through initiatives like wastewater reuse, composting, and recycling of non-biodegradable waste to minimize ecological impact.
- Upgrading health infrastructure by improving SHCs, establishing Maternity & Child Centres, Trauma Care Centres, Emergency Referral Facilities, and Mobile Health Units.
- Developing educational infrastructure including a Vocational Training Centre, Model Primary School, Satellite College, and a Teacher Training Centre to foster skill development.
- Providing multifunctional social spaces like a multi-purpose community park, cultural and recreational centre, upgraded cremation grounds, and public greens.
- Developing economic infrastructure by establishing a village haat, agro-processing units, storage facilities, and skill development hubs to promote rural enterprise.
- Strengthening transportation networks through improved internal roads, bus stops, and walkable pathways to ensure safe and inclusive mobility.
- Planning renewable energy infrastructure including solar-powered street lighting and energy-efficient public buildings.
- Enhancing disaster management capacity with early warning systems, community training programs, and resilient shelter infrastructure.

- Improving livelihood and skill development services by strengthening SHGs, promoting market linkages, and supporting rural entrepreneurship.

Beautification / Place Making

- Beautifying public spaces through landscaped community parks, recreational areas, and enhanced public open spaces to create vibrant social hubs.
- Rejuvenating ponds, planting native species, and installing eco-friendly lighting and trails around Belti Queen Palace for environmental and aesthetic enhancement.
- Laying out heritage walking trails, murals, shaded seating, and craft kiosks to enhance visual appeal and promote cultural identity.
- Designing community marketplaces with local materials, shaded structures, and vibrant signage to boost economic activity and community pride.
- Streetscaping with local art, directional signage, and shaded walkways to improve the pedestrian experience and promote local character.

Preserving Heritage and Culture / Tourism

- Restoring Hawai Mahal and promoting local historical narratives for cultural continuity.
- Documenting the British era bombing site as a marker of collective memory and historical significance.
- Establishing a Cultural Centre for the Lodha and Sabar communities to celebrate and preserve tribal traditions.
- Promoting tribal festivals and partnering with research institutions for cultural documentation and knowledge exchange.
- Restoring the Belti Old Queen Palace by developing an interpretation centre and supporting infrastructure for annual cultural festivals.
- Engaging communities in tourism through SHG-led services, craft promotion, and heritage-based skill training.
- Celebrating local identity through craft exhibitions, farmer festivals, and traditional signage in marketplaces.

Disaster Preparedness & Resilience

- Mitigating flood and health risks through integration of solid waste and drainage systems.
- Building resilient sanitation systems that can withstand climate-related challenges.

- Ensuring hygiene resilience by securing reliable water access during emergencies.
- Avoiding hazard-prone zones through strategic land use and site planning.
- Supporting ecological restoration efforts like pond rejuvenation for climate mitigation.
- Establishing emergency medical and trauma care systems for disaster response.
- Creating village-level disaster preparedness units with trained community members and equipped shelters.
- Providing livelihood-based resilience by diversifying income sources and enhancing local skills.
- Ensuring safe evacuation and flood-resilient roadways through improved transport infrastructure.

Clean Energy Adaptation

- Promoting composting to reduce dependence on synthetic fertilizers.
- Utilizing low-energy DEWATS and UASB systems to minimize operational energy consumption.
- Encouraging energy-efficient water supply infrastructure to lower environmental impact.
- Installing solar lighting and hybrid renewable energy systems for energy security and sustainable operation of public services.
- Incorporating clean technologies in agro processing to ensure environmental sustainability.
- Supporting energy-aware educational environments through green buildings and passive design features.

ICT Initiatives

- Installing digital monitoring systems such as WBPMS for effective waste and sanitation tracking.
- Digitizing public service delivery and maintaining accessible online records.
- Utilizing GIS-based tools for infrastructure planning and land use decisions.
- Launching digital literacy programs and e-learning platforms to build community knowledge.

- Promoting heritage tourism through online platforms, social media, and digital campaigns.
- Building capacity through virtual training modules for SHGs and tourism-related services.
- Establishing e-market platforms for local produce and crafts.
- Implementing smart mobility tools such as bus tracking apps and digital transport services.
- Offering online training and digital support systems for SHG networks and rural enterprises

Suggested List of Proposals are divided under 6 sectors from 2026 to 2036: (For detailed list of projects and finance refer to section 10.1 Financial Phasing Sectorwise.

Infrastructure Projects (IP)	Beautification & Public Spaces (B & PS	Heritage, Cultural and Eco-tourism (HCEt	Disaster Preparedness & Climate Resilience (DP & CR)	Clean Energy Projects (CEP)	Employment Support (ES)
• Expansion of piped water supply network • Plan solid waste management: door-to-door collection, segregation bins, composting units • Internal village road strengthening & widening • Building Highway crossover • Developing multifunctional social spaces (parks, cremation grounds, cultural centres). • Developing educational infrastructure. • Upgrading health infrastructure by improving SHCs, establishing Maternity & Child Centers, Trauma Care Centers	• Beautify public spaces: landscaped parks, recreational zones, open-air community areas • Rejuvenating ponds, planting native species, eco-lighting and trails around Belti Queen Palace. • Restoring Belti Queen Palace with interpretation centre • Beautifying public spaces through landscaped community parks, recreational areas, and enhanced public open spaces. • Designing community marketplaces with local materials and shaded structures	• Cultural Center for the Lodha and Sabar communities to celebrate and preserve tribal traditions. • Restoring the Belti Old Queen Palace by developing an interpretation centre and supporting infrastructure for annual cultural festivals. • Celebrating local identity through craft exhibitions, farmer festivals, and traditional signage in marketplaces. • Promote SHG-led cultural tourism and guided visitor experiences	• Build resilient sanitation systems • Supporting ecological restoration efforts like pond rejuvenation • Creating village-level disaster preparedness units • Establishing emergency medical and trauma care systems • Providing livelihood-based resilience and skill diversification • Providing livelihood-based resilience by diversifying income sources and enhancing local skills.	• LED solar-powered street lighting • Incorporating clean technologies in agro-processing • Encouraging energy-efficient water infrastructure • Supporting energy-aware educational environments **ICT Initiatives (ICT)** • Digital literacy programs • Digital training for SHG • e-market platforms for local produce and crafts	• Developing a village haat, agro-processing units, storage facilities, and skill development hubs to promote rural enterprise. • Capacity building program for crop diversification and multi cropping. • Forest produce aggregation & branding. • Local products stalls next to NH16.

Suggested Projects which can be initiated in 2026 are:

Sr. No	Infrastructure Module	Beautification/ Place Making	Preserving Heritage and Culture, Tourism	Integrating disaster preparedness and resilience	Clean Energy Adaptation	ICT Initiatives
1.	Providing universal access to water supply by expanding tap connections to all households.	Beautifying public spaces through landscaped community parks, recreational areas, and enhanced public open spaces.		Mitigating flood and health risks through integration of solid waste and drainage systems.	Promoting composting to reduce dependence on synthetic fertilizers.	Installing digital monitoring systems such as WBPMS for effective waste and sanitation tracking.
2.	Planning solid waste management through door-to-door collection, segregation bins, and community composting units.	Rejuvenating ponds, planting native species, eco-lighting and trails around Belti Queen Palace.	Documenting the British-era bombing site as a marker of historical significance.	Building resilient sanitation systems that can withstand climate-related challenges.	Encouraging energy-efficient water supply infrastructure to lower environmental impact.	Digitizing public service delivery and maintaining accessible online records.

Suggested Projects which can be initiated in 2027 are:

Sr. N	Infrastructure Module	Beautification / Place Making	Preserving Heritage and Culture, Tourism	Integrating disaster preparedness and resilience	Clean Energy Adaptation	ICT Initiatives
1.	Developing decentralized sewerage infrastructure (DEWATS, soak pits, SPS)	Rejuvenating ponds, native plantations, eco-lighting at Belti Queen Palace		Supporting ecological restoration efforts like pond rejuvenation	Encouraging energy-efficient water infrastructure	Utilizing GIS-based tools for planning and land use
2.	Providing universal access to water supply	Designing community marketplaces with local materials and shaded structures	Engaging communities in tourism through SHG-led services	Ensuring hygiene resilience through reliable water access	Supporting energy-aware educational environments	Launching digital literacy programs and e-learning platforms

Suggested Projects which can be initiated in 2028 are:

Sr. N	Infrastructure Module	Beautification/ Place Making	Preserving Heritage and Culture, Tourism	Integrating disaster preparedness and resilience	Clean Energy Adaptation	ICT Initiatives
1.	Enhancing environmental resource management (reuse, compost, recycle)	Laying heritage trails, murals, shaded seating, and craft kiosks	Establishing a Cultural Center for Lodha and Sabar communities	Building resilient sanitation systems	Incorporating clean technologies in agro processing	Promoting heritage tourism via online platforms
2.	Developing economic infrastructure: village haat, storage, agro-processing, skill hubs		Celebrating local identity through exhibitions, festivals, signage	Creating village-level disaster preparedness units		Building capacity through virtual SHG training

Suggested Projects which can be initiated in 2029 are:

Sr. N	Infrastructure Module	Beautification / Place Making	Preserving Heritage and Culture, Tourism	Integrating disaster preparedness and resilience	Clean Energy Adaptation	ICT Initiatives
1.	Upgrading health infrastructure (SHCs, Maternity Centre, Trauma Care)		Restoring Belti Queen Palace with interpretation centre	Establishing emergency medical and trauma care systems	Installing solar lighting and hybrid systems	Establishing e-market platforms for local produce and crafts
2.	Strengthening transportation: roads, bus stops, walkable paths			Ensuring flood-resilient roads and evacuation routes		Implementing smart mobility tools and transport services

Suggested Projects which can be initiated in 2030 are:

Sr.N	Infrastructure Module	Beautification/ Place Making	Preserving Heritage and Culture, Tourism	Integrating disaster preparedness and resilience	Clean Energy Adaptation	ICT Initiatives
1.	Developing multifunctional social spaces (parks, cremation grounds, cultural centres)			Providing livelihood-based resilience and skill diversification		Offering digital training for SHG and rural enterprises
2.	Planning renewable energy infrastructure (solar public lighting, green buildings)					

Example of Module Details

Infrastructure Module	
Sector Goals	• 100% Household with Piped Water Connections with treated water supply. • 100% covered drainage system with sewerage treatment before disposal. • 100% Door-to-Door Collection and Solid Waste segregation • 100% of Roads in Panchayats to be all-weather Roads • 100% Roads Panchayats to have LED Streetlights • Separation of Storm water drainage • Provision of and equitable distribution of sufficient community centre, recreational open areas and health care as per RADPFI guidelines. • Introduction of Rain water harvesting at community level.
Design Parameters	• As recommended by **RADPFI Guidelines,** the availability of Water should be 70-100 LPCD. • As recommended by **RADPFI Guidelines,** One hectare of composting site can handle 83.33 tonnes per day. A composting site for biodegradable waste collected in the village can be accordingly built on a site away from the habitation as well as water body, close to the agricultural fields, where the manure generated can be put to use. • As recommended in **RADPFI Guidelines** the Streetlighting Space should be 30m between the Poles.
SDG Themes Covered	• Goal 3: Good health and well-being • Goal 4: quality eduation • Goal 6: Clean water and sanitation • Goal 7: Affordable and clean energy • Goal 8: Decent work and economic growth

	• Goal 11: Sustainable cities and communities • Goal 12: Responsible consumption and production • Goal 13: Climate action

Demand-Gap Assessment	Components	2023	Ongoing Projects	Current Gap	2026 (Short Term)		2028 (Medium Term) (2033-Long Term)	
					Demand	Gap	Demand	Gap
Piped Water Connections	Tap Connections	200	Har Ghar Jal (Jal Jeevan Mission)	3000	4000 (Based on Household Projections)	3800	4100 (Based on Household Projections)	3900
Streetlights	Streetlights	30	By GP	150	200 (Based on Road Length Projections)	170	230 (Based on Road Length Projections)	200
…..	…..	….	…..	….	…..	….	….	….

Projects	Details
Piped Water Connections	• At present there is a gap of 3000 Piped Water Connections. As per the projections, the demand will rise to 4000 connections by year 2026, 4100 connections by year 2028 and 4500 connections by year 2033. • Under Har Ghar Jal Yojana 100% Tap connections shall be provided till 2026. As per projections, with the increase in Households the Increased Demand should be met by the GP through planned approach. • It is proposed that the GP's Residential Part will grow in the East direction. Thus, a Secondary Trunk line for Water Connections may be extended towards East along with the main road.

	• Apart from the provision of Piped Water Connections the GP should also focus on the requirements of O&M of the Water Connections which will be required in upcoming years. • For OSR, the GP should install Water Meters to all the Piped Connections.

Unit Rates	Component	Unit	Year*	Unit Cost Considered (in 2025) (In Rs.)
	Laying Water Pipes	Per Km	2023	50 Lakhs
	LED Street Lights	Per Unit	2023	20,000

*The Units Cost of the Components to be adjusted as per the year of implementation of the Projects

Capital Invest Plan	Project	Sub-Projects	Investment Required
	Piped Water Connections	1. Laying Water Pipes 2. Providing Door-to-Door Connections	1. Rs. 25 Lakhs 2. Rs. 10 Lakhs
	LED Street Lights	1. Conducting Survey for Street Lights Location Identification 2. Procurement of Street Light Poles & Solar Equipment 3. Converting Existing Street Lights into LED & Solar Operated	1. Rs. X lakhs 2. Rs.X2 Lakhs 3. Rs. X3 Lakhs

Action Plan	Activities	Department	Government Scheme or Possibility of PPP
Piped Water Connections	• **Expansion of piped water network in unserved areas.** • **5866 new individual water connections to be added to meet demand.**		• Under Har Ghar Jal Yojana 100% Tap connections shall be provided till 2026.

	• **Repair of existing pipe connections to reduce leakage problems.** • **Water treatment plants for treatment of water supplied through piped connection.** • **Seeration of storm water drainage at community level.** • **Provision of rain water harvesting tanks along with community centre.**		• After 2026, PPP Possibility can be explored by allowing Private Players to collect water charges and sharing of water revenues along with Gram Panchayat.
LED Street Lights	• **Provision of LED street lights along the road network near Belti Haat, Queen's palace and park.** • **Provision of LED street lights along major road network**		

Sub-Project Phasing	2023	Remarks	2026	Remarks	2028	Remarks	2033	Remarks
Laying Water Pipes	6.6%	Present Condition	100 %	As per Demand	100 %	As per additional Demand	100 %	As per additional Demand
Providing Door-to-Door Connections	6.6%	Present Condition	100 %	As per Demand	100 %	As per additional Demand	100 %	As per additional Demand
Conducting Survey for Street Lights	100 %	Survey of all the Locations to be finished by 2024	-		-		-	

Location Identification								
Procurement of Street Light Poles & Solar Equipment	20%	Procurement and Installation of 20% of the Project to be completed by 2024	40 %	Procurement and Installation of 40% of the Project to be completed by 2026	100 %	Procurement and Installation of 100% of the Project to be completed by 2028	100 %	Procurement and Installation of additional Project Component (if any) to be completed by 2033

Sr.No	Suggestive Implementation Strategy for the Module
1.	For the 1st Year, it is suggested that Government Funded Projects may be prioritized for Implementation from 2024. Following are the Government Funded Projects/Sub-Projects/Components: 1) Piped Water Connections under Har Ghar Jal by Water Supply Department. 2) Roof Top Solar Panels under Central Government Rooftop Solar Subsidy Programme by ……. Department 3) Solar Street Lights under Atal Jyoti Yojana(AJAY) by…….. Department
2.	For…….. Project/Sub-Project/Component, additional demand till 2033 can be met by…….
3.	Project/Sub-Project/Component can be initiated from 2025: 1) Expansion of individual piped water connections 2) Repair of leakages in pipe water network. 3) Covering of existing open drainage systems. 4) Provision of community vats to prevent dumping of solid waste in open drains. 5) Construction of community level rain water harvesting tanks. 6) Provision of storm water drainage along major roads and footpaths. 7) Provision of solar infrastructure on market shades and bus stopss.
4.	Project/Sub-Project/Component can be initiated from 2026:

	1) Provision of piped water connection to all pending households. 2) Provisio of door to door waste collection in all unserved areas. 3) Provision of community level compositing units. 4) Rejuvenation of open areas and landscaping around Belti queen's palace, picnic ground/park with solar lights, shaded seating and public conveniences. 5) Encouraging crop diversification and provision of veterinary support.
5.	Project/Sub-Project/Component can be initiated from 2027: 1) Provision of household level sewage disposal infrastructure. 2) Rejuvenation of local ponds and other water bodies using ecologically sensitive methods and utilization in irrigation. 3) Development of community market places using local materials. 4) Popularization of e-learing and digital literacy programs. 5) Formalization of community self-help groups.
6.	Project/Sub-Project/Component can be initiated from 2028: 1) Provision of sanitation system at household level 2) Village level floor relief centre construction. 3) Resource recovery and management by introduving vermi-composting and community level recycling centre. 4) Development of economic infrastructure like village haat with storage, grainary and skill development centre. 5) Provision of sahed seating, craft kiosks and heritage trail development aroung Belti Queen's palace and park. 6) Online promotion of heritage tourism. 7) Cultural centre for Lodha and Sabar communities. 8) Provision of fair ground for local exhibition and provision of signages. 9) Promotion of clean technologies for agro-based industries.
7.	Project/Sub-Project/Component can be initiated from 2029: 1) Construction of 5 new community centres 2) 2 new maternity and child welfare centres 3) Restoration of Belti Queen's Palace with interpretation centre 4) Provision of footpath along Belti park, Belti Haat and Belti Queen's Palace along with public conveniences for visitors. 5) Provision of Bus stops along major areas.

	6) Food resilient roads near Belti crossing and flyover construction in water logged area.
8.	Project/Sub-Project/Component can be initiated from 2030: 1) Provson of additional parks, cremation grounds and cultural centre. 2) Expansion of renewable energy infrastructure inaddition to solar LED streetlights like solar infrastructure on bus stop sheds and Belti Haat market sheds. 3) Community level livelihood diversification initiatives and capacity building. 4) Skill development programs and introduction to E-Marketing platforms.

9. Financing Strategies and Resource Planning

9.1. Financial Plan

DEVELOPMENT OF PHC AT MOKRAMPUR, PASCHIM MEDINIPUR ABSTRACT OF COST					
S.No.	**DESCRIPTION OF ITEMS**	**UNIT**	**Qty.**	**Rate**	**AMOUNT IN LACS**
1	Civil Work	Sqm	760	16000	121.6
2	Electrical	Rs		12.50%	15.20
3	Plumbing	Rs		5%	6.08
4	Site Development & external lighting			5%	6.08
5	Medical Equipments	As per detail			10
				TOTAL	**158.96**
				Contingency(1%)	1.59
				G. TOTAL	**160.55**

POND REJUVENATION AT MOKRAMPUR, PASCHIM MEDINIPUR ABSTRACT OF COST					
S.No.	**DESCRIPTION OF ITEMS**	**UNIT**	**Qty.**	**Rate**	**AMOUNT IN LACS**
1	Cleaning of pond	sqm	3000	171	5.13
2	Benches	Rs	10	100000	10.00
3	MS Railing around pond	Kg	342	130	0.4446

S. No.	Projects	Amount in lacs
1	Development of Primary School	155.20
2	Development of Primary Health Center	160.55
3	Pond Rejuvenation	25.43
	Total	**341.18**

9.1. Phase wise Financial Plan:

Phase 1 (in Lakhs):

	Sr. No.	Projects	Total Cost in lakhs
1(2026)	1	Providing universal access to water supply by expanding tap connections to all households.	272.91
	2	Beautifying public spaces through landscaped community parks, recreational areas, and enhanced public open spaces.	27.23
	3	Mitigating flood and health risks through integration of solid waste and drainage systems.	33.00
	4	Promoting composting to reduce dependence on synthetic fertilizers.	10.45
	5	Installing digital monitoring systems such as WBPMS for effective waste and sanitation tracking.	11.48
2 (2026)	6	Planning solid waste management through door-to-door collection, segregation bins, and community composting units.	14.80
	7	Rejuvenating ponds, planting native species, eco-lighting and trails around Belti Queen Palace.	10.40
	8	Documenting the British-era bombing site as a marker of historical significance.	6.00
	9	Building resilient sanitation systems that can withstand climate-related challenges.	33.00
	10	Encouraging energy-efficient water supply infrastructure to lower environmental impact.	20.90
	11	Digitizing public service delivery and maintaining accessible online records.	3.85
Total Finance Phase 1 (in lakhs)			**444.01**

Phase 21 (in Lakhs):

	Sr. No.	Projects	Total Cost in lakhs
3(2027)	12	Developing decentralized sewerage infrastructure (DEWATS, soak pits, SPS)	231.00
	13	Rejuvenating ponds, native plantations, eco-lighting at Belti Queen Palace	19.24
	14	Supporting ecological restoration efforts like pond rejuvenation	15.05
	15	Encouraging energy-efficient water infrastructure	11.00
	16	Utilizing GIS-based tools for planning and land use	11.00
4(2027)	17	Providing universal access to water supply	6.60
	18	Designing community marketplaces with local materials and shaded structures	15.40
	19	Engaging communities in tourism through SHG-led services	0.55
	20	Ensuring hygiene resilience through reliable water access	16.50
	21	Supporting energy-aware educational environments	15.40
	22	Launching digital literacy programs and e-learning platforms	132.00
Total Finance Phase 2 (in lakhs)			**473.74**

Phase 3 (in Lakhs):

	Sr. No.	Projects	Total Cost in lakhs
5(2028)	23	Enhancing environmental resource management (reuse, compost, recycle)	3.85
	24	Laying heritage trails, murals, shaded seating, and craft kiosks	28.71
	25	Establishing a Cultural Center for Lodha and Sabar communities	11
	26	Building resilient sanitation systems	12.65
	27	Incorporating clean technologies in agro-processing	8.8
	28	Promoting heritage tourism via online platforms	2.2
6(2028)	29	Developing economic infrastructure: village haat, storage, agro-processing, skill hubs	46.2
	30	Celebrating local identity through exhibitions, festivals, signage	7.7
	31	Creating village-level disaster preparedness units	2.2
	32	Building capacity through virtual SHG training	1.1
Total Finance Phase 3 (in lakhs)			**124.41**

Phase 4 (in Lakhs):

	Sr. No.	Projects	Total Cost in lakhs
7(2029)	33	Upgrading health infrastructure (SHCs, Maternity Centre, Trauma Care)	33.00
	34	Restoring Belti Queen Palace with interpretation centre	11.00
	35	Establishing emergency medical and trauma care systems	27.50
	36	Installing solar lighting and hybrid systems	24.75
	37	Establishing e-market platforms for local produce and crafts	3.08
8(2029)	38	Strengthening transportation: roads, bus stops, walkable paths	27.28
	39	Ensuring flood-resilient roads and evacuation routes	49.50
	40	Implementing smart mobility tools and transport services	11.00
Total Finance Phase 4 (in lakhs)			**187.11**

Phase 5 (in Lakhs):

	Sr. No.	Projects	Total Cost in lakhs
9(2030)	41	Developing multifunctional social spaces (parks, cremation grounds, cultural centres)	34.13
	42	Providing livelihood-based resilience and skill diversification	4.4
	43	Offering digital training for SHG and rural enterprises	7.32
10(2030)	46	Planning renewable energy infrastructure (solar public lighting, green buildings)	55.44
Total Finance Phase 5 (in lakhs)			**101.29**

9.2. Funding Schemes

Proposal-to-Scheme Mapping for 2026

Sr. No.	Sector	Proposal	Likely Funding Schemes
1	Infrastructure	Expand tap connections to achieve universal water access	XV Finance Commission, 5th State Finance Commission (WB), Grant for Five Year Plan (WB)
2		Plan solid waste management: door-to-door collection, segregation bins, composting units	Swachh Bharat Mission, XV Finance Commission, 5th SFC (WB)
3	Beautification / Place Making	Beautify public spaces: landscaped parks, recreational zones, open-air community areas	5th SFC (WB), Own Funds
4		Rejuvenate ponds and trails around Belti Queen Palace with native species and eco-lighting	Own Funds, 5th SFC (WB)
5	Heritage & Culture, Tourism	Document and mark British-era bombing site as local heritage	Rashtriya Gram Swaraj Abhiyan, Own Funds
6	Disaster Preparedness & Resilience	Integrate drainage and solid waste systems to mitigate flood and health risks	MGNREGA, Swachh Bharat Mission, XV Finance Commission
7		Build resilient sanitation systems to withstand climate-related hazards	Swachh Bharat Mission, MGNREGA
8	Clean Energy Adaptation	Promote composting to reduce chemical fertilizer dependence	Swachh Bharat Mission, Own Funds
9		Encourage energy-efficient water supply infrastructure	XV Finance Commission, 5th SFC (WB)
10	ICT Initiatives	Install digital monitoring tools (e.g., WBPMS) for waste and sanitation tracking	Rashtriya Gram Swaraj Abhiyan, Own Funds
11		Digitize public service delivery; maintain accessible online records	Rashtriya Gram Swaraj Abhiyan, Own Funds

Proposal-to-Scheme Mapping for 2027

Sr. No.	Sector	Proposal	Likely Funding Schemes
1	Infrastructure	Develop decentralized sewerage systems (e.g. DEWATS, soak pits, SPS)	Swachh Bharat Mission, XV Finance Commission, Grant for Five Year Plan (WB)
2		Continue expanding household water supply access	XV Finance Commission, 5th State Finance Commission (WB), Grant for Five Year Plan (WB)
3	Beautification / Place Making	Rejuvenate ponds, eco-lighting, native plantations around Belti Queen Palace	5th SFC (WB), Own Funds
4		Design community marketplaces using local materials and shaded structures	5th SFC (WB), Own Funds
5	Heritage & Culture, Tourism	Promote SHG-led cultural tourism and guided visitor experiences	Rashtriya Gram Swaraj Abhiyan
6	Disaster Preparedness & Resilience	Restore local ecosystems (e.g., pond rejuvenation) for climate resilience	MGNREGA, Swachh Bharat Mission, 5th SFC (WB)
7		Ensure hygiene resilience through reliable water infrastructure	XV Finance Commission, Swachh Bharat Mission
8	Clean Energy Adaptation	Encourage energy-efficient water infrastructure	XV Finance Commission, Grant for Five Year Plan (WB)
9		Support energy-efficient and climate-conscious school infrastructure	5th SFC (WB), XV Finance Commission
10	ICT Initiatives	Launch GIS tools for planning, resource mapping, and land management	Rashtriya Gram Swaraj Abhiyan
11		Initiate digital literacy and e-learning platforms (youth, SHGs, school support)	Rashtriya Gram Swaraj Abhiyan

Proposal-to-Scheme Mapping for 2028

Sr. No.	Sector	Proposal	Likely Funding Schemes
1	Infrastructure	Enhance environmental resource management (reuse, compost, recycle)	Swachh Bharat Mission, XV Finance Commission
2		Develop economic infrastructure: village haat, storage units, skill hubs	5th State Finance Commission (WB), Grant for Five Year Plan (WB), MGNREGA
3	Beautification / Place Making	Lay heritage trails, murals, shaded seating, and craft kiosks	5th SFC (WB), Own Funds
4	Heritage & Culture, Tourism	Establish Cultural Center for Lodha and Sabar communities	Rashtriya Gram Swaraj Abhiyan, Grant In Aid Establishment (WB)
5		Celebrate local identity through exhibitions, festivals, signage	Rashtriya Gram Swaraj Abhiyan, Own Funds
6	Disaster Preparedness & Resilience	Build resilient sanitation systems	Swachh Bharat Mission, MGNREGA
7		Create village-level disaster preparedness units	SAHAY (WB), Grant for Five Year Plan (WB)
8	Clean Energy Adaptation	Incorporate clean technologies in agro-processing	XV Finance Commission, Grant for Five Year Plan (WB),
9	ICT Initiatives	Promote heritage tourism through online platforms	Rashtriya Gram Swaraj Abhiyan, Own Funds, SAHAY (WB)
10		Build SHG capacity through virtual skill training platforms	Rashtriya Gram Swaraj Abhiyan

Proposal-to-Scheme Mapping for 2029

Sr. No.	Sector	Proposal	Likely Funding Schemes
1	Infrastructure	Upgrade health infrastructure: SHCs, maternity center, trauma care	XV Finance Commission, Grant In Aid Establishment (WB), 5th SFC (WB)
2		Strengthening transportation: roads, bus stops, walkable paths	MGNREGA, XV Finance Commission, 5th SFC (WB)
3	Heritage & Culture, Tourism	Restore Belti Queen Palace with interpretation centre	Rashtriya Gram Swaraj Abhiyan, Own Funds
4	Disaster Preparedness & Resilience	Establish emergency medical and trauma care systems	XV Finance Commission, Own Funds
5		Ensure flood-resilient roads and evacuation routes	MGNREGA, Swachh Bharat Mission, Contingency (WB)
6	Clean Energy Adaptation	Install solar lighting and hybrid systems	XV Finance Commission, Grant for Five Year Plan (WB)
7	ICT Initiatives	Establish e-market platforms for local produce and crafts	Rashtriya Gram Swaraj Abhiyan, Own Funds
8		Implement smart mobility tools and digital transport services	Rashtriya Gram Swaraj Abhiyan, Own Funds

Proposal-to-Scheme Mapping for 2030

Sr. No.	Sector	Proposal	Likely Funding Schemes
1	Infrastructure	Develop multifunctional social spaces (parks, cremation grounds, cultural centres)	5th State Finance Commission (WB), Grant In Aid Establishment (WB), Own Funds
2	Clean Energy Adaptation	Plan renewable energy infrastructure: solar public lighting, green buildings	XV Finance Commission, Grant for Five Year Plan (WB)
3	Disaster Preparedness & Resilience	Provide livelihood-based resilience and skill diversification	XV Finance Commission
4	ICT Initiatives	Offer digital training for SHGs and rural enterprises	Rashtriya Gram Swaraj Abhiyan, Own Funds

Project Financing Strategy (Capital Investment)

Project/Sub-Project	Total Cost of the Project/Sub-Project	2023						2024						
		Central Government/ Scheme	State Government/ Scheme	PPP	Own Source	FC Grants	Other Source	Total Cost of the Project/Sub-Project	Central Government/ Scheme	State Government/ Scheme	PPP	Own Source	FC Grants	Other Source
Project 1	**Rs 25 Lakhs**	Rs.15 Lakhs	Rs. 5 Lakhs	--	Rs. 1 Lakhs	Rs. 1 Lakhs	Rs. 3 Lakhs	**Rs 25 Lakhs**	Rs.15 Lakhs	Rs. 5 Lakhs	--	Rs. 1 Lakhs	Rs. 1 Lakhs	Rs. 3 Lakhs
	100%	60%	20%		4%	4%	12 %	**100%**	60%	20%		4%	4%	12 %
Remarks		Under Scheme... by ..... Department	Under Scheme... by ..... Department						Under Scheme... by ..... Department	Under Scheme... by ..... Department				

(Example) Project Financing Strategy (Operation & Maintenance)

Project/Sub-Project	Total Cost of the Project/Sub-Project	2023						2024						
		Central Government/ Scheme	State Government/ Scheme	PPP	Own Source	FC Grants	Other Source	Total Cost of the Project/Sub-Project	Central Government/ Scheme	State Government/ Scheme	PPP	Own Source	FC Grants	Other Source
Project 1								**Rs 1 Lakhs**					Rs. 1 Lakhs	
								100%					100 %	
Remarks												by GP with assistance from..... Department		

Project Financing Strategy (Total) (Capital Investment + O&M)

Project/Sub-Project	Total Cost of the Project/Sub-Project	2023						2024						
		Central Government / Scheme	State Government / Scheme	PPP	Own Source	FC Grants	Other Source	Total Cost of the Project/Sub-Project	Central Government / Scheme	State Government / Scheme	PPP	Own Source	FC Grants	Other Source
Project 1	**Rs 25 Lakhs**	Rs.15 Lakhs	Rs. 5 Lakhs	--	Rs. 1 Lakhs	Rs. 1 Lakhs	Rs. 3 Lakhs	**Rs 26 Lakhs**	Rs.15 Lakhs	Rs. 5 Lakhs	--	Rs. 1 Lakhs	Rs. 2 Lakhs	Rs. 3 Lakhs
	100%	60%	20%		4%	4 %	12 %	**100%**	60%	20%		4%	6%	10 %

10. Annual Action Plan

Projects Taken Up Yearwise and required Financial Plan:

IP	B&PS	HCEt	DP&CR	CEP	ES	ICT	2025-26 (in lacs)
Water Supply	Beautification of public space	Document heritage sites	Mitigate flood risk	Promote composting	Capacity building program for crop diversification and multi cropping	Digital monitoring tools	458.36
SWM	Rejuvenate ponds		Resilient sanitation	Energy efficient water supply		Online records	
287.71	46.47	6.00	66.00	31.35	5.5	15.33	

IP	B&PS	HCEt	DP&CR	CEP	ES	ICT	2026-27 (in lacs)
DEWATS, soak pits	Design community marketplaces using local materials and shaded structures	Engaging communities in tourism through SHG	Restore local ecosystem	Climate conscious school	Build SHG capacity through virtual skill training platforms	Digital literacy program e-learning platforms	487.12
Water Supply			Resilient sanitation	Energy efficient water supply		Resource mapping using GIS	
237.60	46.47	0.55	32.00	26.40	1.1	143.00	

IP	B&PS	HCEt	DP&CR	CEP	ES	ICT	2027-28 (in lacs)
Strengthening transportation: roads, bus stops, walkable paths, highway crossover	Lay heritage trails, murals, shaded seating, and craft kiosks	Tribal Cultural centre	Resilient sanitation	Clean technologies in agro-processing	Develop economic infrastructure: village haat, skill hubs	Promote heritage tourism through online platforms	433.53
		Celebration of Festival & exhibitions	village-level disaster preparedness units				
314.25	28.71	18.7	14.67	8.8	46.2	2.2	

IP	B&PS	HCEt	DP&CR	CEP	ES	ICT	2028-29 (in lacs)
Primary school	Rejuvenate ponds, eco-lighting, native plantations around Belti Queen Palace	Restore Belti Queen's Palace with interpretation centre	emergency medical care	Install solar lighting and hybrid systems	Forest produce aggregation & branding.	e-market platforms	489.05
Primary health centre			flood-resilient roads			smart mobility tools	
315.75	16.47	11.00	77.00	24.75	30.00	14.08	

IP	B&PS	HCEt	DP&CR	CEP	ES	ICT	2029-30 (in lacs)
Develop multifunctional social spaces (parks, cremation grounds)	Rejuvenate ponds, eco-lighting, native plantations around Belti Queen Palace	Restore Belti Queen's Palace with interpretation centre	Provide livelihood-based resilience and skill diversification	Renewable energy infrastructure (solar lighting, green buildings)	Local products stalls next to NH16.	Digital training for SHGs and rural enterprises	447.79
Upgradation of Belti bridge							
289.63	30.00	11.00	4.40	55.44	50.00	7.32	

10.2 Implementation Strategies:

- Projects which have low Capital and O&M Costs but can generate good revenue for Panchayat may be suggested to be prioritized for implementation.
- Options for PPP may be explored for projects to make them more feasible for the Panchayats and at the same time attractive for the Private Venture to invest in.
- Bsed on the Rural-Rural/Rural-Urban linkages, if some part of capital investment can be pooled in from neighboring Rural/Urban Areas to augment revenue-generating infrastructure services used commonly by the Rural and Urban Areas. Eg. Some hygienic hostel/lodge facilities for people working in urban areas at the daytime but staying in rural areas at night. Or thed evelopment of better public transportation between the Urban-Rural areas. Any bicycle sharing scheme or development of safe bicycle infrastructure, etc.
- Monetization of Panchayat Assets for ensuring Enhancement of Own Source of Revenue. (eg. Providing Plug Play Infrastructure Solution for Commercial/Non-Polluting Industries to setup in Vacant Panchayat Land at suitable location or leasing out vacant panchayat bhawan area to Banks/SHGs.)
- Land with high real estate potential (especially near Highways) can be utilised for enhancing the direct/indirect revenue sources of the Panchayats.
- Mapping of resources along with the financial resources and the resource pooling (including human resources) for effective implementation of GPSDP by the Panchayat.
- suggest possible integration of Panchayat-Private Participation for the creation and maintenance of Infrastructure and Services.
- suggest points towards Prevention, Mitigation, Preparedness, Response and Recovery against possible Disasters.

11 3D Representation/Visualizations of the Projects

Figure 11.1 Primary School

Figure 11.2 PHC

Figure 11.3 Pond Rejuvenation

ANNEXURES

Annexure-1

Research/Documentation 1: Topic 1

Annexure-2

Research/Documentation 2: Topic 2

Annexure-3

Research/Documentation 3: Topic 3