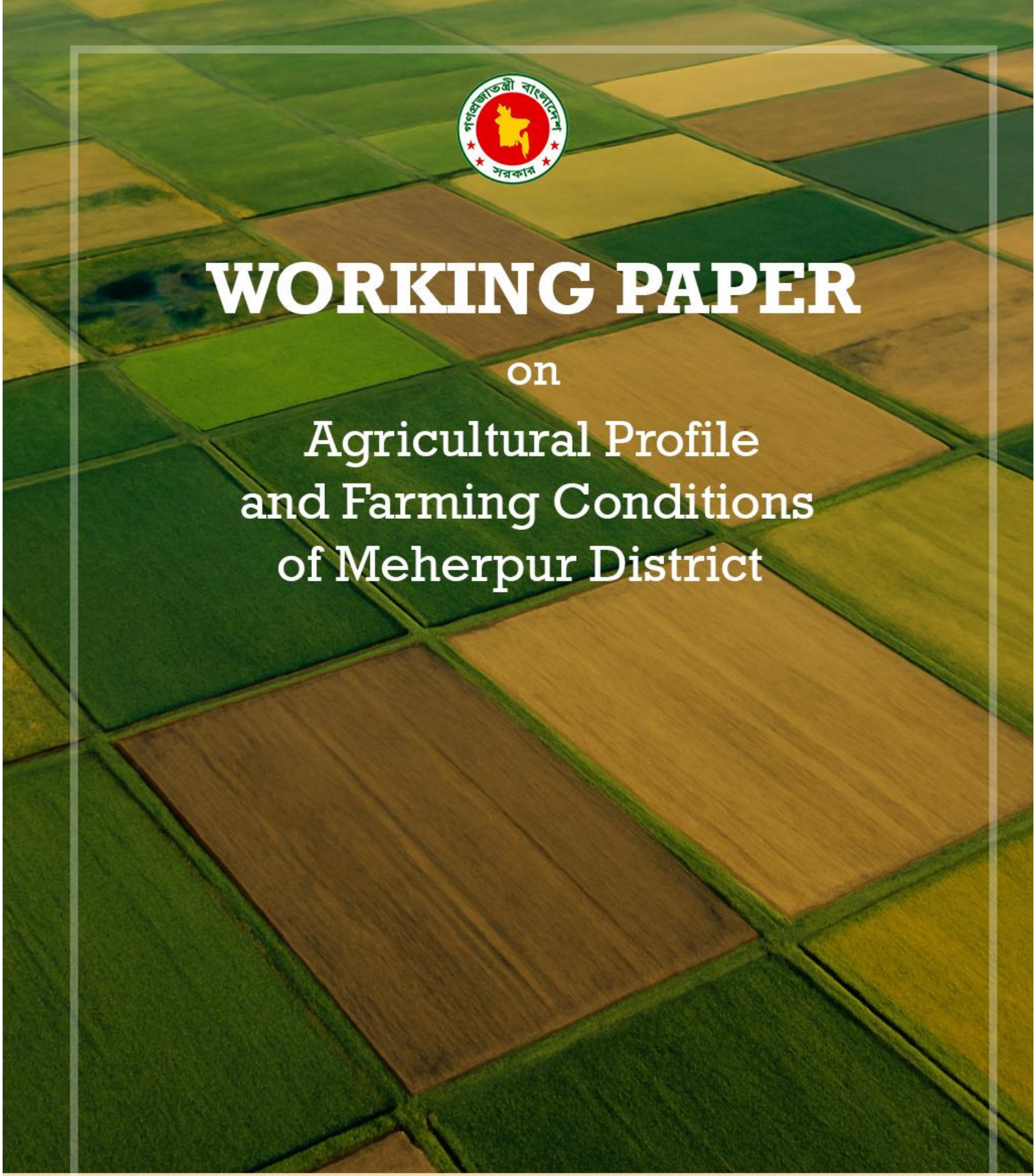

WORKING PAPER

on

Agricultural Profile and Farming Conditions of Meherpur District

CLIENT

Preparation of Development Plan for Mehrpur Zilla (MZDP)

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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Urban Development Directorate (UDD)

Working Paper
On
Agricultural Profile and Farming Conditions of Meherpur District

Under
Preparation of Development Plan for Meherpur Zilla Project

Submitted to

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August 2025

Executive Summary

The Farming Condition Survey (FCS) was conducted in Meherpur District under the *Preparation of Development Plan for Meherpur Zilla Project* by the Urban Development Directorate (UDD). Using the KoboToolbox platform for accurate and geo-referenced data collection, the survey captured a detailed picture of the district's agricultural practices, land use, irrigation systems, market access, transport modes, storage facilities, and challenges faced by farming households.

The primary objective of the survey was to gather reliable, field-based data to guide agricultural development planning. Specifically, it aimed to assess farming practices, evaluate land ownership and irrigation patterns, examine input usage and mechanization, analyze marketing and transportation systems, and identify key constraints limiting productivity and profitability.

A total of 75 respondents — including landowners, tenant farmers, sharecroppers, and day laborers — were interviewed across diverse locations in Meherpur. Data was collected through structured questionnaires on smartphones/tablets, ensuring accuracy through built-in skip logic and GPS tagging. The collected dataset included both quantitative indicators and qualitative observations.

The survey revealed that farming is the main occupation for 69% of respondents, with 24% working as day laborers. Landholdings are generally small to medium-sized, with mixed use of own and leased land. Irrigation is heavily dependent on shallow tube wells (39%) and combinations of deep and shallow tube wells (35%). Farmers rely on government and private seed sources, with Urea as the most widely used fertilizer. Mechanization is common in land preparation but rare in harvesting. Most farmers transport goods to markets within 3–10 km, using vans/pushcarts (68%) or small trucks (9%), and face challenges such as poor road conditions, high transport costs, and lack of cold storage.

When compared with findings from the Seasonal Transport Load–Unload Survey, several common challenges emerge — poor rural roads, limited storage facilities, dependency on rented vehicles, and seasonal congestion. While FCS focuses on the origin of the supply chain, the comparison highlights how farm-level constraints and long-haul transport issues are interconnected, requiring integrated solutions.

The Farming Condition Survey provides a comprehensive evidence base for agricultural planning in Meherpur. It underscores the need for sustainable irrigation management, increased mechanization (especially in harvesting and post-harvest stages), improved feeder road connectivity, expanded cold storage facilities, and better market linkages. These priorities align with national strategies such as the National Agriculture Policy (2018), National Agricultural Mechanization Policy (2020), and Bangladesh Delta Plan 2100, offering a clear roadmap for policy alignment and local development interventions.

Table of Contents

List of Figures

List of Tables

List of Maps

Chapter 1
Introduction

Chapter 1: Introduction

Agriculture is the cornerstone of Meherpur District's economy, providing livelihoods for the majority of its population and playing a vital role in food production, employment generation, and rural income. The district's fertile land, favorable agro-climatic conditions, and access to irrigation have enabled diverse cropping patterns, yet its farming sector faces persistent challenges related to infrastructure, market access, and post-harvest management.

The Farming Condition Survey (FCS) was conducted under the Preparation of Development Plan for Meherpur Zilla Project by the Urban Development Directorate (UDD) to collect accurate, field-based data on the district's agricultural practices, resource use, marketing systems, and constraints. This survey is a critical step in developing evidence-based policies and targeted interventions aimed at improving agricultural productivity, enhancing farmers' incomes, and promoting sustainable resource management.

The FCS utilized the KoboToolbox digital platform for efficient, geo-referenced data collection, ensuring high data quality through GPS tagging, skip logic, and real-time monitoring. A total of 75 respondents, including landowners, tenant farmers, sharecroppers, and agricultural laborers, were interviewed across different unions and villages. The data gathered covers multiple dimensions — land use, irrigation, crop choices, input usage, mechanization, storage and transportation, market access, and key socio-economic factors influencing agricultural performance.

By analyzing this information, the report aims to provide a comprehensive picture of farming conditions in Meherpur District, identify the major bottlenecks in production and marketing, and propose actionable strategies that align with national agricultural and rural development policies. The insights from this survey will serve as a foundation for integrated planning, ensuring that agricultural growth in Meherpur is both inclusive and sustainable.

1.1 The Project Location

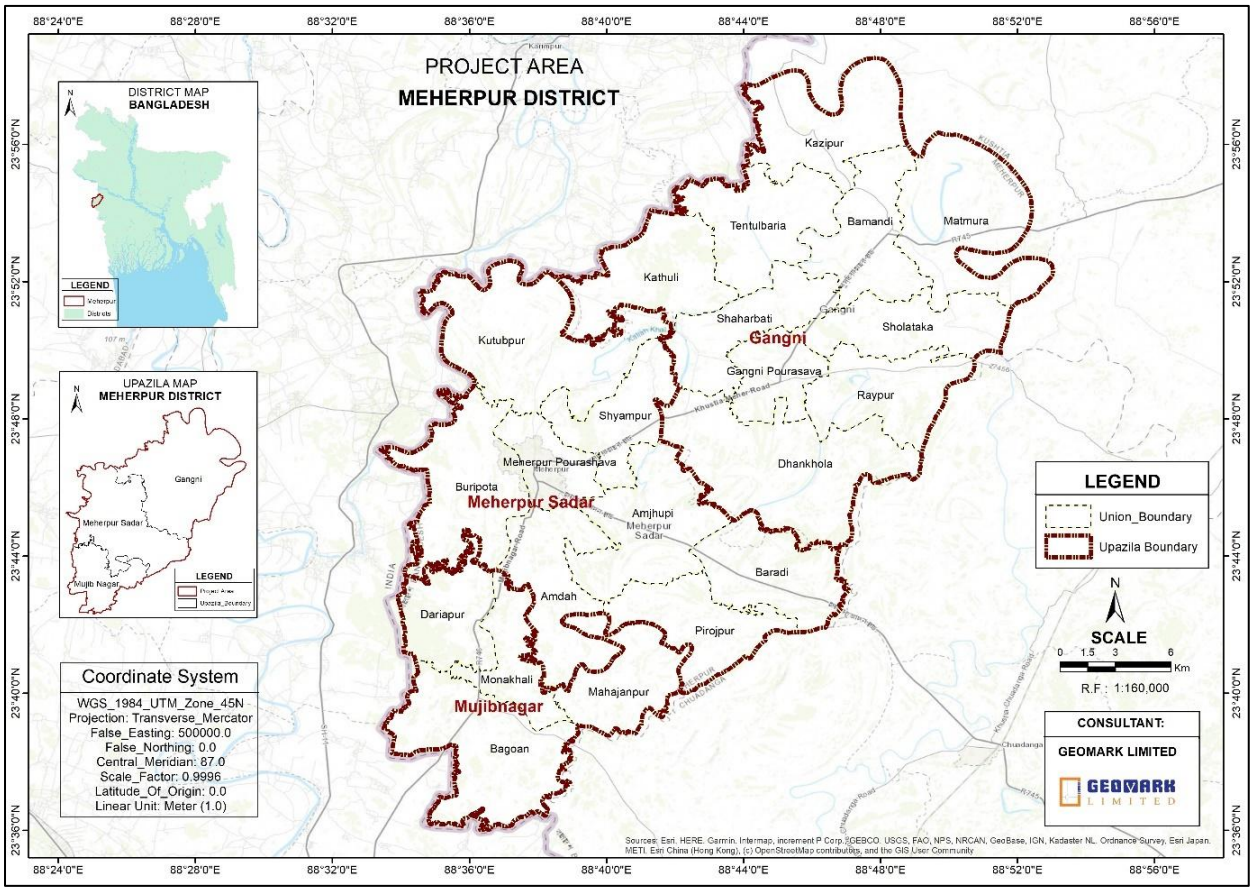
Meherpur is a district in southwest Bangladesh that lies in the northwest of Khulna Division. Its borders are to the east and west, respectively, with the districts of Chuadanga and Kushtia in Bangladesh and the Indian state of West Bengal. Meherpur was a Nadia district subdivision prior to independence. The district is 716.08 square kilometers (276.48 square miles) in size.

Meherpur Sadar Upazila, Mujibnagar Upazila, and Gangni Upazila are the three upazilas that make up Meherpur district. Meherpur, which is home to more than 0.7 million people, is a significant hub for trade and agriculture in the area. The district headquarters is located in the town of Meherpur, which is also the largest town in the district.

Meherpur's historical significance and rich cultural legacy are well-known. There are numerous historic sites and ruins in the area. The yearly Baruni Mela, which is conducted in honor of the Hindu god Shiva, is one of Meherpur's most colorful and bright celebrations.

Meherpur's economy is based mostly on agriculture, with a sizable section of people working in farming and associated fields. Rice, wheat, and jute are just a few of the crops that may be produced in the area because of its rich soil and temperate temperature. The non-agricultural sector has grown significantly in the region in recent years, as evidenced by the opening of a number of small and medium-sized businesses. With a profusion of picturesque lakes and rivers, verdant forests, and undulating hills, Meherpur is renowned for its natural beauty. Numerous wildlife sanctuaries, such as the Kanaighat Wildlife Sanctuary, which is home to a wide variety of species, are located in the district.

Meherpur's public services and infrastructure are both deficient. Additionally, the district is vulnerable to frequent natural catastrophes like cyclones and floods, which can result in significant damage and fatalities.



Map 1-1: Project Area

1.2 Objectives and Purpose of the Project

The primary objective of this survey was to assess the current farming conditions, agricultural practices, and livelihood patterns of farmers in Meherpur District. The study aimed to collect quantitative and qualitative data that would support informed decision-making for agricultural development and rural planning.

Specific objectives include:

- **Assess farming practices** – Identify dominant cropping patterns, land use, and irrigation sources.
- **Evaluate economic conditions** – Analyze farmers' income levels, production costs, and market access.
- **Understand transportation and storage facilities** – Examine goods transportation modes and usage of storage or cold storage for crops and agricultural residues.
- **Identify challenges and constraints** – Highlight problems faced in production, transportation, and marketing of agricultural products.
- **Support planning and policy formulation** – Provide evidence-based insights for local and regional agricultural development strategies.

Chapter 2
Background Studies and Policy Review

Chapter 2: Background Studies and Policy Review

Agriculture in Bangladesh remains a central pillar of rural livelihoods, food security, and employment, despite the gradual diversification of the economy. National and district-level surveys consistently highlight the interplay between landholding patterns, irrigation sources, input accessibility, market structures, and socio-economic constraints as key determinants of agricultural productivity and farmer welfare.

2.1 Overview of Literature, Regulations, and Development Strategies.

2.1.1 Agricultural Structure and Farming Systems in Bangladesh

Bangladesh's agriculture is characterized by a **smallholder-dominated structure**. The **BBS Agriculture Census 2019** confirms that most holdings are under 1 hectare, often fragmented into multiple plots. Nationally, **land tenure diversity** — with a mix of owner-operated, leased, and sharecropped lands — shapes cropping decisions and profitability (Rahman & Salim, 2018). Studies have noted that tenancy arrangements can both **enable landless farmers** to participate in production and **limit incentives** for long-term soil fertility investment.

In Meherpur, the **BBS Community Report 2022** shows a farming workforce that includes **landowners, tenant farmers, sharecroppers, and agricultural laborers**, reflecting this national mosaic. The diversity of tenure systems in the district aligns with wider patterns seen in Bangladesh's western agricultural zones, where irrigation access and soil fertility make crop production more intensive but also more competitive.

2.1.2 Irrigation Patterns and Water Resource Management

National literature (Hossain et al., 2018; WARPO, 2021) identifies irrigation as the **single most transformative factor** in Bangladeshi agriculture over the past three decades, enabling boro rice expansion and higher cropping intensity. However, this expansion has been **heavily groundwater-dependent**, with shallow tube wells (STWs) dominating in western regions. The **Bangladesh Delta Plan 2100 (BDP2100)** warns that unregulated groundwater extraction risks long-term aquifer depletion.

Meherpur's profile fits this pattern precisely:

- **Domestic water source:** 96.8% of households use tubewells (rural 99.7%, urban 86.3%).
- **Irrigation:** Dominated by STWs and combined DTW+STW systems. These figures suggest both **strengths** (high irrigation coverage) and **risks** (over-dependence on a single water source). Literature recommends diversifying irrigation portfolios through **surface water lifting**, **rainwater harvesting**, and **drip/sprinkler technologies** to increase water-use efficiency.

2.1.3 Agricultural Inputs and Mechanization Trends

The **National Agriculture Policy (2018)** and **National Agricultural Mechanization Policy (2020)** promote mechanization and modern input use to counteract labor shortages, increase efficiency, and reduce post-harvest losses. Research (Kabir & Rahman, 2019) finds that mechanization has progressed unevenly:

- High adoption of tractors, power tillers, and irrigation pumps.
- Low adoption of **combine harvesters** and **mechanized threshers**, due to high upfront costs and lack of custom hiring services in some areas.

The Meherpur context reflects this national picture: tillage and irrigation are mechanized, but harvesting and post-harvest mechanization are limited. Seed sourcing is mixed — government distribution, private dealers, and saved seeds — with quality variability noted in multiple studies (BRRI, 2020). Fertilizer use follows the national trend: heavy reliance on urea, supplemented by TSP, DAP, MOP, and some organic inputs.

2.1.4 Market Access, Post-Harvest Management, and Value Chains

Market systems in rural Bangladesh remain **fragmented and intermediary-driven** (Rahman & Salim, 2018). Farmers often sell to middlemen at the farmgate, especially for perishable goods, due to transport and storage limitations. The **NAP 2018** emphasizes the need for rural storage infrastructure, aggregation centers, and farmer cooperatives to reduce dependency on intermediaries and stabilize prices.

The Meherpur findings are consistent:

- Local haats and middlemen dominate the sales chain.
- Cold storage facilities are scarce, forcing distress sales at harvest time.
- Poor road connectivity in some unions increases transport costs and post-harvest losses.

These constraints match the challenges identified in **FAO's (2021)** review of Bangladesh's horticulture value chains, which stresses the need for **integrated storage–transport–market linkage solutions**.

2.1.5 Socio-Economic and Livelihood Indicators

Farming viability is intertwined with broader rural development indicators — **education, energy, health, financial access, and ICT penetration**. The **BBS Community Report 2022** provides a granular snapshot for Meherpur:

- **Electricity:** 99.4% access, near-universal.
- **Clean cooking fuels:** Only 5.7% use LPG; biomass (wood, straw, bran) still dominant.
- **Mobile ownership:** ~63.7% of population aged 5+ have a mobile phone.
- **Internet use:** ~36.4% (urban higher than rural).
- **Financial accounts:** ~23.8% have a bank or mobile money account.

National studies (World Bank, 2020) link **digital inclusion** and **financial access** to better market participation, adoption of new technologies, and resilience to shocks. The relatively low rates in Meherpur indicate untapped potential for **digital extension services** and **mobile-based market platforms**.

2.1.6 Policy Context and Research Gaps

Multiple national strategies intersect with the challenges observed in Meherpur:

- **8th Five Year Plan (2020–25):** Calls for climate-resilient agriculture, improved irrigation efficiency, rural infrastructure upgrades, and agri-value chain development.
- **National Agricultural Extension Policy (2020):** Promotes ICT-based, gender-sensitive extension services, directly relevant to Meherpur's low digital uptake among farmers.
- **Good Agricultural Practices (GAP) Policy 2020:** Links better post-harvest handling to food safety and export readiness.

While these frameworks are comprehensive, the literature identifies **implementation bottlenecks** at the local level — insufficient farmer training, weak institutional coordination, and low private investment in rural storage and logistics. Research gaps remain in **district-level irrigation sustainability analysis**, **post-harvest loss quantification**, and **digital agriculture adoption patterns**.

Synthesis for the Current Survey

The Farming Condition Survey in Meherpur directly engages with several of these literature themes:

- **Irrigation sustainability:** Matching BDP2100's groundwater concerns.

- **Mechanization gaps:** Reflecting national-level slow adoption in harvesting stages.
- **Market and storage constraints:** Aligning with NAP 2018's call for value-chain infrastructure.
- **Digital and financial inclusion:** Critical for NAEP 2020's extension goals.

By providing **fresh, micro-level evidence** on these dimensions, the survey can both **validate** and **extend** the existing literature, offering practical entry points for district-specific interventions.

2.2 Plans and Policy Review

2.2.1 National Water Policy (NWP, 1999)

The National Water Policy remains Bangladesh's principal framework for integrated water resources management (IWRM). Its core aims include:

- Ensuring **equitable and sustainable** access to water for all sectors.
- Protecting **groundwater quality** and preventing over-extraction.
- Improving rural water supply and sanitation services.

Relevance to Meherpur Survey Findings:

The Farming Condition Survey confirms Meherpur's overwhelming dependence on **groundwater irrigation** and tubewell-based domestic water supply (96.8% of households). This mirrors the NWP's focus areas, particularly the need to regulate and monitor extraction rates to prevent aquifer stress. The limited presence of alternative sources (surface water irrigation, rainwater harvesting) suggests opportunities to implement NWP strategies such as **water-use zoning**, **conjunctive use** of surface and groundwater, and **farmer-led water management committees**.

2.2.2 Bangladesh Delta Plan 2100 (BDP2100, 2018)

The BDP2100 provides a **long-term, climate-resilient water, food, and energy security strategy**. It integrates environmental management, disaster risk reduction, and socio-economic development goals up to the year 2100. Key agricultural priorities under BDP2100 include:

- Increasing **irrigation efficiency** and shifting to **low-water crops** in stress-prone zones.
- Promoting **climate-smart agriculture**.
- Investing in **surface water infrastructure** to reduce groundwater dependence.

Relevance to Meherpur:

Given the district's location in the southwest agro-ecological zone, where seasonal water table fluctuations are significant, Meherpur falls under BDP2100's "hotspot" category for sustainable water management. Integrating **micro-irrigation systems**, **solar-powered pumps**, and **water-user associations** would directly align with both BDP2100 and the survey's findings on irrigation concentration.

2.2.3 8th Five Year Plan (8FYP, 2020–2025)

The 8FYP builds on previous plans and is heavily aligned with the **Sustainable Development Goals (SDGs)**, focusing on inclusive growth, poverty reduction, and climate resilience. Agriculture-specific priorities include:

- Modernizing irrigation and mechanization.
- Expanding rural road networks for market access.
- Developing **agri-value chains**, including cold storage and processing facilities.
- Strengthening digital infrastructure for agricultural extension.

Relevance to Meherpur:

The Farming Condition Survey highlights persistent constraints in **transport**, **market linkage**, and **post-harvest storage**. These are direct targets under 8FYP's agricultural productivity and market competitiveness pillars. Implementing **union-level cold rooms**, upgrading **feeder roads**, and piloting **digital market platforms** would fulfill both the plan's mandates and local needs.

2.2.4 National Agriculture Policy (NAP, 2018)

The NAP's vision is to ensure food and nutrition security through a **profitable, sustainable, and diversified agricultural sector**. Its key focus areas include:

- Efficient use of natural resources (land, water, soil).
- Enhancing productivity through improved seeds, inputs, and technology.
- Developing marketing and value chains.
- Promoting safe and nutritious food production.

Relevance to Meherpur:

The survey's evidence of **input variability**, heavy **urea dependence**, and limited **harvest mechanization** point toward the need for NAP-aligned interventions. These include promoting **balanced fertilizer use**, **certified seed adoption**, and **custom hiring centers (CHCs)** for smallholder access to costly machinery.

2.2.5 National Agricultural Extension Policy (NAEP, 2020)

The NAEP aims to create an **inclusive, pluralistic extension system** that incorporates public, private, and NGO actors. It emphasizes:

- **ICT-based extension services**.
- Gender responsiveness.
- Climate-smart farming practices.
- Linkages between research, extension, and farmers.

Relevance to Meherpur:

The survey reveals gaps in digital engagement: only **~36.4% of residents use the internet**, and mobile ownership is **~63.7%**. Expanding ICT-enabled extension (e.g., SMS advisory, mobile apps, interactive voice response) could deliver market prices, weather forecasts, and pest alerts directly to farmers. This aligns with NAEP's goal of "last-mile" advisory services.

2.2.6 National Agricultural Mechanization Policy (NAMP, 2020)

NAMP addresses the mechanization bottlenecks identified in both the survey and national studies. Core strategies include:

- Facilitating access to machinery via **rental/hiring services**.
- Providing subsidies and credit for mechanization.

- Promoting environment-friendly technologies.

Relevance to Meherpur:

Given low uptake of harvesters and threshers in the survey, introducing **district-level machinery banks** or **leasing schemes** could reduce labor dependency during peak seasons and limit post-harvest losses.

2.2.7 Good Agricultural Practices (GAP) Policy (2020)

The GAP Policy focuses on improving food safety, quality, and traceability. This includes better **post-harvest handling**, **storage**, and **processing infrastructure**.

Relevance to Meherpur:

The survey's finding of **very limited cold storage use** highlights the need for GAP-compliant handling facilities. This would allow farmers to extend shelf-life, meet quality standards, and explore **higher-value markets**.

2.2.8 National Food and Nutrition Security Policy (NFNSP, 2020) and Plan of Action (2021–2030)

NFNSP integrates agriculture, health, and social protection to ensure **access to safe, nutritious, and affordable food**. The Plan of Action emphasizes:

- Diversifying diets and production systems.
- Strengthening food safety regulations.
- Coordinating agriculture, nutrition, and education sectors.

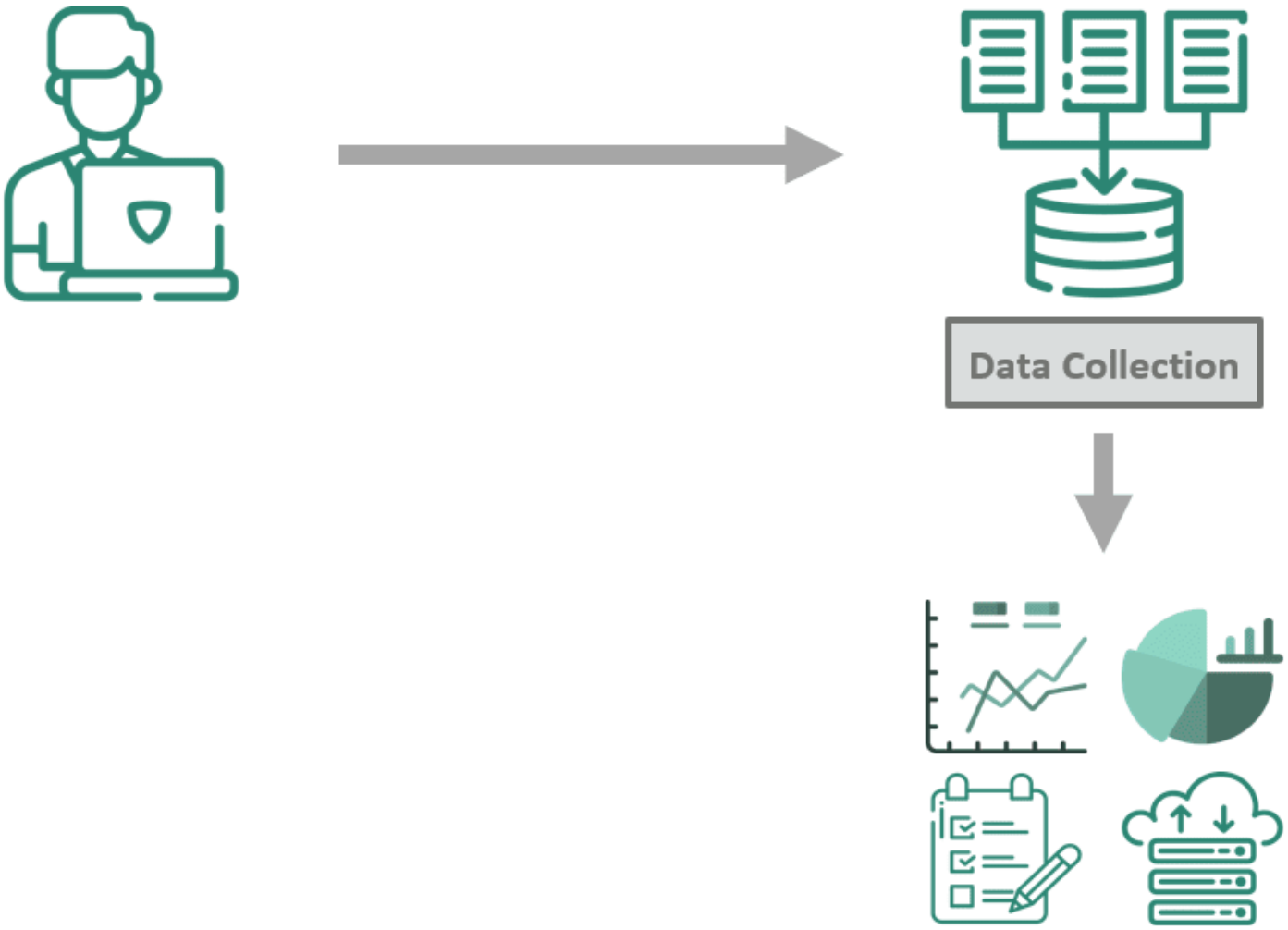
Relevance to Meherpur:

By improving **value addition** and **processing capacity**, Meherpur farmers could contribute to both local nutrition security and income diversification, fulfilling NFNSP objectives.

Synthesis

The **Farming Condition Survey** findings are not isolated observations; they fit squarely within **national policy objectives**. Meherpur can serve as a **pilot district** for integrated interventions that draw simultaneously from NWP, BDP2100, 8FYP, NAP, NAEP, NAMP, GAP, and NFNSP. This alignment increases the feasibility of securing funding, technical support, and inter-agency coordination for initiatives such as:

- **Water-smart agriculture** (NWP + BDP2100).
- **Mechanization service hubs** (NAMP + NAP).
- **Cold storage and value chain infrastructure** (8FYP + GAP).
- **Digital advisory and e-markets** (NAEP + 8FYP).



Chapter 3
Methodology of the Survey

Chapter 3: Methodology of the Survey

The methodology for the Farming Condition Survey in Meherpur District was developed to ensure that the findings accurately reflect the realities of agricultural practices, economic conditions, and infrastructural challenges faced by local farmers. A multi-stage approach combining structured questionnaires, digital data capture, and field verification was implemented.

The survey was guided by three key principles:

- Reliability – ensuring data consistency through standardization of tools and training of enumerators.
- Representativeness – capturing diversity across farmer types, crop systems, and geographic areas.
- Policy Relevance – aligning the survey scope with national agricultural strategies and local development priorities, ensuring results are directly useful for planning and decision-making.

3.1 Survey Design and Rationale

The survey followed a **descriptive cross-sectional research design**, enabling data collection at a single point in time to describe the prevailing farming conditions in Meherpur District. This design was chosen because:

- It provides a detailed snapshot of the current situation, ideal for planning and policy assessment.
- It minimizes time and cost compared to longitudinal surveys.
- It allows integration with **secondary datasets** from government and research institutions for broader comparative analysis.

The questionnaire was **thematically structured** into eight key sections:

1. **General Information** – survey date, location (Union/Mouza), GPS coordinates, enumerator ID.
2. **Demographics** – age, gender, household size, education level, farming experience.
3. **Landholding Patterns** – farm size, ownership status, tenancy agreements, and land use types.
4. **Crop Production** – types of crops cultivated, seasonal variations, planting/harvesting cycles.
5. **Agricultural Inputs** – sources and types of seeds, fertilizers, pesticides, machinery usage, and irrigation methods.
6. **Output and Marketing** – production quantity, selling points (local haat, village market, home), transportation modes.
7. **Post-Harvest Practices** – storage systems, use of cold storage, and losses due to inadequate facilities.
8. **Challenges** – infrastructural issues, market fluctuations, access to credit, and climate-related risks.

The questionnaire was **pre-tested** with 5–7 farmers in a pilot survey. Feedback from the pilot helped in:

- Refining technical terms into locally understood language.
- Adjusting question sequence for better flow.
- Adding prompts to capture more accurate estimates of income and yield.

3.2 Digital Data Collection

To ensure efficiency, accuracy, and real-time monitoring, data collection was conducted using **KoboToolbox**, an open-source platform optimized for field surveys in rural areas. Enumerators used **Android-based tablets and smartphones** equipped with the KoboCollect application.

This system offered multiple advantages:

- **Offline data capture** allowed uninterrupted work in remote areas with no internet coverage.

- **GPS tagging** ensured accurate geolocation of each interview, enabling spatial mapping of farming activities.
- **Automated data validation** prevented entry errors by restricting inputs to acceptable ranges and applying logical skip patterns.
- **Instant upload** to the central server facilitated daily supervision and immediate feedback to enumerators.

3.3 Sampling Framework

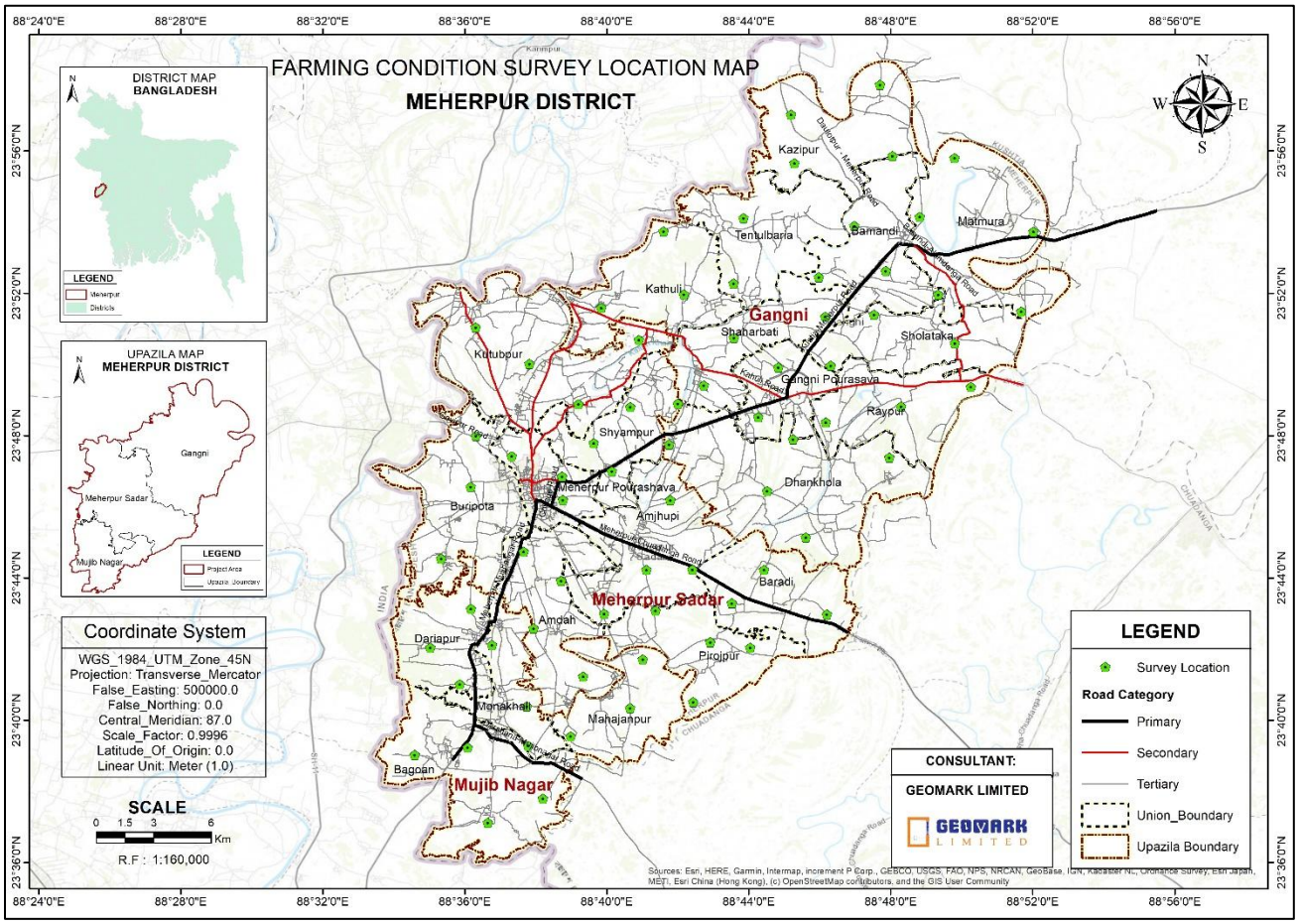
The survey adopted a **purposive sampling approach**, ensuring representation of different agricultural conditions, land sizes, and geographic locations within Meherpur District.

A total of **75 locations** were selected as survey location, drawn from various unions to capture diversity in soil quality, irrigation access, and proximity to markets.

The sample included:

- Smallholders cultivating less than one acre of land.
- Medium-scale farmers with 1–3 acres.
- Larger-scale commercial farmers with more than 3 acres.

Local agricultural extension officers assisted in identifying representative villages, after which enumerators approached households systematically to avoid selection bias.



Map 3-1: Survey Location Map

3.4 Enumerator Training and Ethical Considerations

The quality of any survey depends largely on the skills of the enumerators. For this study, a **two-day intensive training program** was organized before fieldwork commenced. Training sessions covered:

- Detailed explanations of each questionnaire section.
- Hands-on practice with KoboCollect, including GPS logging and multimedia capture.
- Role-playing exercises to simulate farmer interviews and build rapport.
- Ethical guidelines for research, including **informed consent**, privacy protection, and respect for respondents' time.

Before beginning each interview, enumerators clearly explained the survey's purpose, assured respondents that their information would remain confidential, and obtained verbal consent to proceed.

3.5 Field Data Collection Process

The fieldwork took place over a **seven-day period**. Enumerators were assigned to different unions each day, with supervisors providing maps and GPS-marked target areas. Interviews were conducted at farmers' homes, fields, and sometimes at local markets when farmers were more easily accessible.

During each interview:

1. The enumerator introduced themselves and obtained consent.
2. Responses were recorded directly into the KoboCollect form.
3. GPS coordinates were logged to verify location.
4. If needed, photographs of equipment, crops, or facilities were taken to support data accuracy.
5. At the end of the day, data was uploaded to the central server for supervisor review.

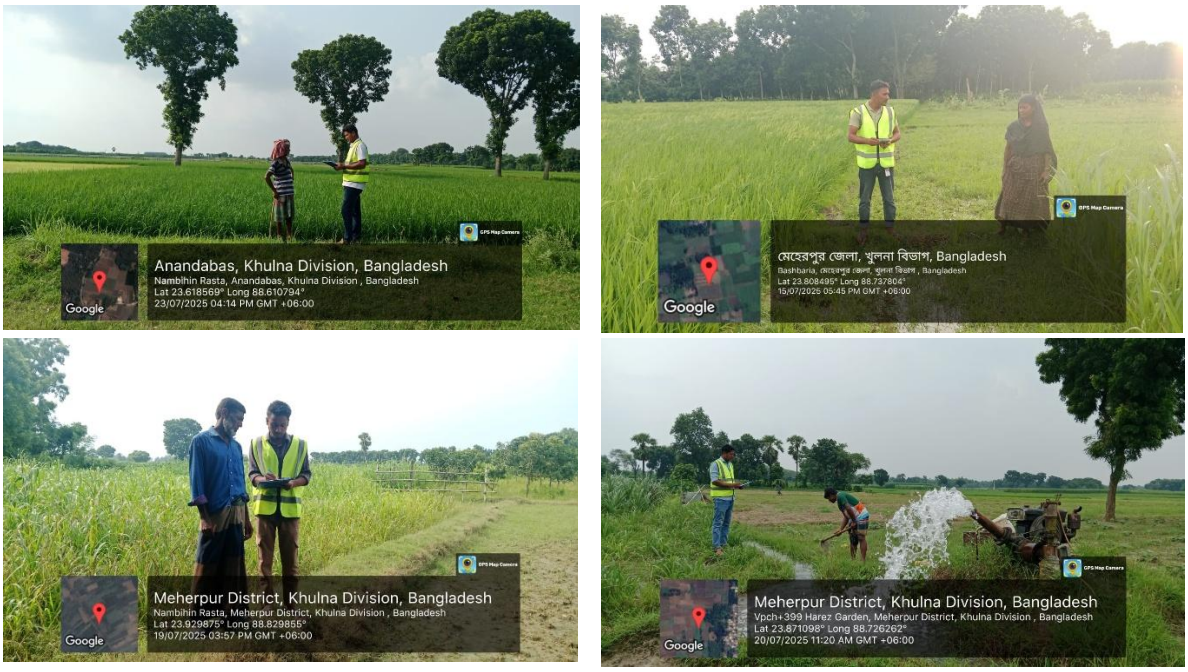


Figure 3-1: Field Data Collection

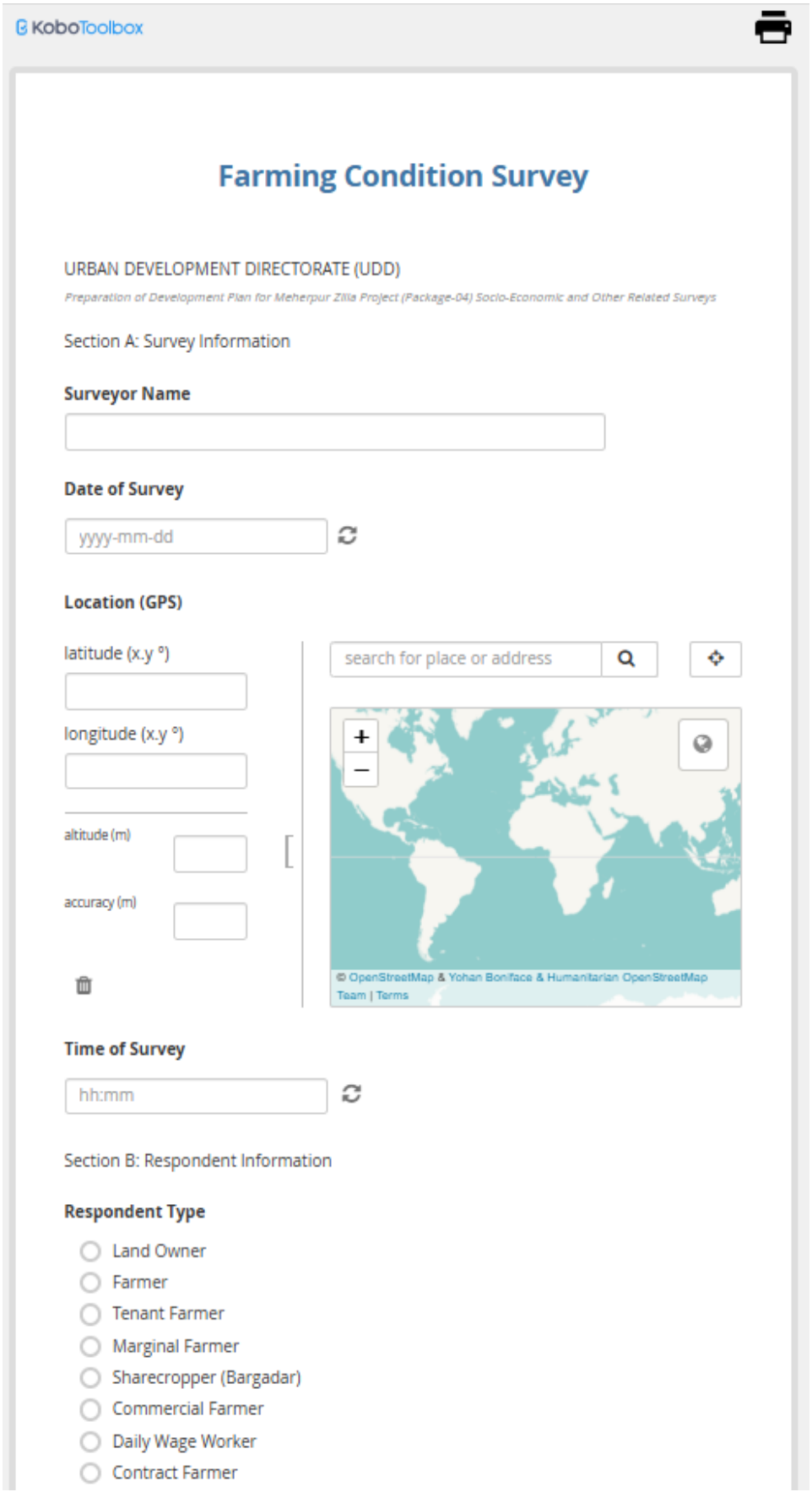


Figure 3-2: Kobo Toolbox Survey Form

3.6 Data Processing & Analysis

Once the fieldwork was complete, all survey data was exported from KoboToolbox into Excel and CSV formats. The data cleaning process involved removing duplicates, correcting inconsistencies, and handling missing values. Responses to open-ended questions were grouped into thematic categories for ease of analysis.

The cleaned dataset was analyzed using descriptive statistics to determine frequency distributions, averages, and proportions for key variables such as irrigation sources, crop types, marketing channels, and common farming challenges. Visual tools such as bar charts, pie charts, and tables were created to enhance the presentation of results. Special attention was given to cross-checking self-reported production and income figures against regional agricultural statistics, ensuring that the findings align with broader trends while still reflecting local realities.

3.7 Limitations

While the methodology was designed for accuracy, a few limitations are acknowledged:

- The relatively small sample size limits the generalizability of findings to the entire district.
- Seasonal variability was not fully captured, as data collection occurred in a single cropping season.
- Some income and yield data relied on farmers' recall rather than written records, which may introduce estimation errors.

Despite these limitations, the methodology provides a reliable and valid basis for understanding farming conditions in Meherpur District.

The methodology combined **structured survey design**, **digital field tools**, **careful sampling**, and **rigorous quality control** to produce high-quality data on the agricultural landscape of Meherpur District. The process ensured that the information gathered was **accurate, representative, and directly applicable** to policymaking and development planning.

Chapter 4
Analysis & Findings

Chapter 4: Analysis & Findings

This chapter presents a detailed analysis of the primary data collected from the agricultural survey conducted in Meherpur District. The survey, carried out using the KoboToolbox platform for online data collection, covered 75 respondents representing a range of farming households, crop types, and agricultural practices. The findings provide insights into income levels, crop selling patterns, transportation systems, use of storage facilities, and other socio-economic aspects of agricultural livelihoods in the district.

Farming: In this study, the target respondents were individuals engaged in farming-related activities, broadly defined to include crop cultivation, fisheries, and livestock rearing. Among the 75 respondents surveyed, the overwhelming majority (71 respondents, 94.7%) were involved in crop cultivation, confirming that farming in Meherpur is predominantly crop-based. A very small number of respondents reported diversification: 2 respondents (2.7%) practiced fisheries as their main activity, 1 respondent (1.3%) combined crop farming with fisheries, and another 1 respondent (1.3%) was engaged in livestock farming. This distribution clearly indicates that while all respondents are part of the farming sector, their participation is highly concentrated in crop production, with limited engagement in fisheries and livestock.

Farmer Classification by Landholding Size:

In Bangladesh, farmers are generally classified based on landholding size, production orientation, and resource access. The most widely used classification comes from the Bangladesh Bureau of Statistics (BBS) and Bangladesh Agricultural Census. Here's the classification with source:

Classification of Farmers in Bangladesh (by landholding size)

(Source: *Bangladesh Bureau of Statistics – Agricultural Census*)

1. Landless Farmers –
    - Operate less than 0.05 acres.
    - Often work as sharecroppers or agricultural laborers.
2. Marginal Farmers –
    - Hold 0.05 to 0.49 acres of land.
    - Mostly produce for subsistence with limited surplus.
3. Small Farmers –
    - Own/operate 0.50 to 2.49 acres.
    - Major group in rural areas, both subsistence and market-oriented.
4. Medium Farmers –
    - Operate 2.50 to 7.49 acres.
    - Have better access to irrigation, machinery, and credit.
5. Large Farmers –
    - Operate 7.50 acres or more.
    - Commercially oriented, often employ hired labor and modern inputs.

Farm holding

A farm holding is defined as being an agricultural production unit having cultivated land equal to or more than 0.05 acre. Farm holdings are classified into following three broad groups:

(a) **small:** Farm holdings having minimum cultivated land 0.05 acre but operated land more than this minimum but up to 2.49 acres.

(b) **medium:** Farm holdings having operated land in between 2.50 to 7.49 acres

(c) **large:** Farm holdings having operated land 7.50 acres and above.

Small cultivated land 0.04 acre or less is generally used for kitchen garden growing mainly vegetables. Often seeds of white gourd, water gourd, pumpkin, and other strains are sown on households; but these creepers spread out around house roofs and other structures. As such, the minimum cultivated land considered for qualifying to be a farm holding is 0.05 acre.

Non-farm holdings

A non-farm holding is defined as being the one which has neither cultivated or operated land or has cultivated land less than 0.05 acre.

(Source: *Bangladesh Bureau of Statistics – Agricultural Census*)

4.1 Types of Farming Practiced by Respondents

Among the 75 respondents, the overwhelming majority (71 respondents, 94.7%) are engaged in crop cultivation. A very small share of respondentss reported other types of farming: 2 respondents (2.7%) are engaged in fisheries, 1 respondent (1.3%) combines crop and fisheries, and another 1 respondent (1.3%) is involved in livestock farming. This distribution shows that while all respondents are engaged in farming-related work, there is very limited diversification into fisheries or livestock. Farming systems remain highly crop-centric, which ensures staple production but increases vulnerability to crop failures, market shocks, and climate risks. Expanding integrated farming practices, such as crop–livestock or crop–fisheries combinations, could provide greater income stability and resilience for farming households in Meherpur.

Table 4-1: Type of Farming

Sl No.	Type of Farming	Frequency	Percentage (%)
1	Crop	71	94.67
2	Crop, Fisheries	1	1.33
3	Fisheries	2	2.67
4	Livestock	1	1.33
	Total	75	100

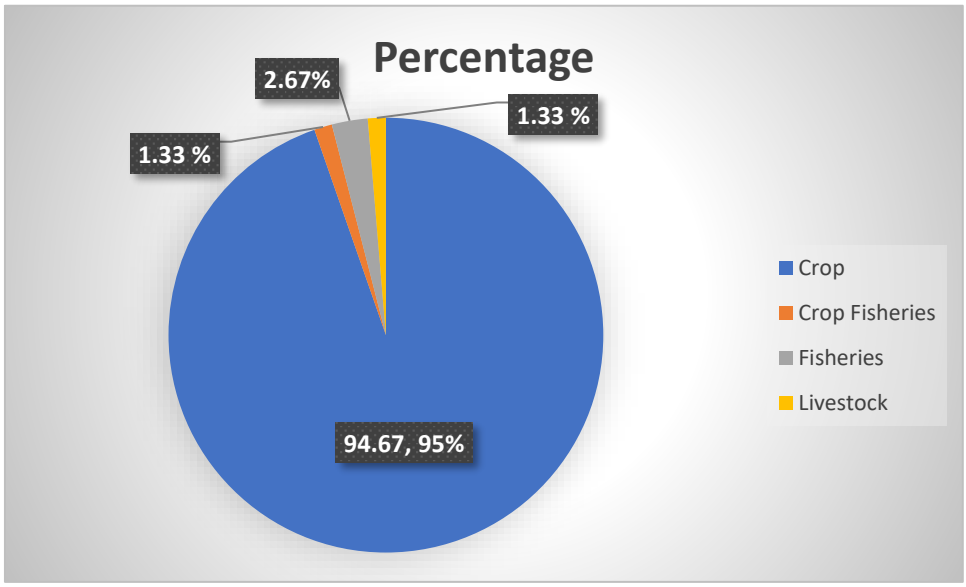


Figure 4-1: Type of Farming

4.2 Main Occupation of the Respondent

The survey findings reveal that the majority of respondents in the Meherpur district are primarily engaged in **farming**, with 69% identifying it as their main occupation. This reflects the strong agricultural base of the local economy and its continued role as the primary source of livelihood. A significant portion of respondents (24%) reported working as **day laborers**, indicating a dependence on irregular, wage-based employment, often linked to agricultural activities or manual labor. **Business activities** account for 5% of respondents, suggesting limited engagement in small-scale trade or entrepreneurial ventures. Only 1% of respondents reported occupations outside these categories, highlighting the minimal diversification of employment opportunities in the area. Overall, the data emphasizes the predominance of agriculture in sustaining the local workforce, alongside a notable share of wage labor and a relatively small presence of other economic activities.

The following table and figure show the primary occupations of the surveyed respondents.

Table 4-2: Main Occupation Distribution

Sl No.	Respondent Main Occupation	Frequency	Percentage (%)
1	Business	4	5
2	Day Labor	18	24
3	Farming	52	69
4	Other	1	1
	Total	75	100

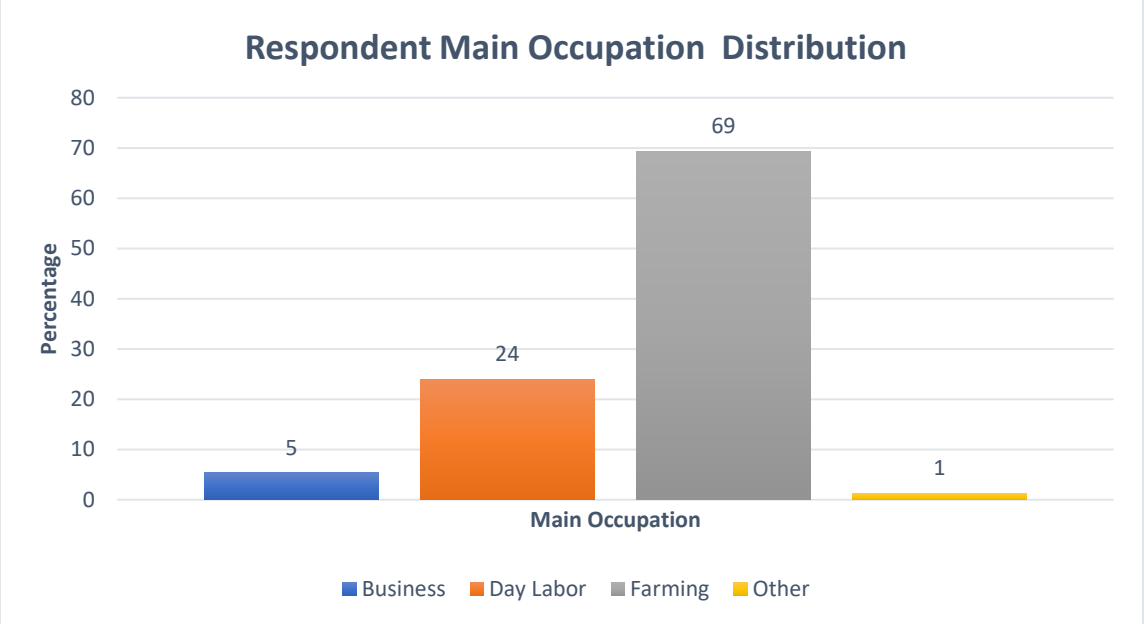


Figure 4-2: Respondent Main Occupation Distribution

4.2.1 Occupational Patterns by Respondent Type

The crosstabulation shows the relationship between respondent type and primary occupation among the surveyed population.

Out of the 75 respondents, a large majority, 52 individuals (69.3%), reported Farming as their main occupation. 18 respondents (24%) identified as Day Laborers, indicating a significant portion of the population depends on wage-based, often agricultural, manual work. In most of the cases they work in the agricultural fields or agriculture related works. One respondent reported working in a brick kiln during the season.

Only 4 respondents (5.3%) cited Business as their main occupation, and these activities were mostly limited to operating small local shops. Just 1 respondent (1.3%) was engaged in other activities.

Among Land Owners (63 total), the overwhelming majority (51 respondents) reported Farming as their main occupation, highlighting that ownership is strongly tied to cultivation activities.

Among those who identified other respondents who were working on the field (12 total), the distribution is mixed: 9 are primarily Day Laborers, 2 are in Business, and only 1 reported Farming as their main occupation. This indicates that many small/marginal farmers supplement their livelihood with daily wage work, reflecting economic vulnerability.

This pattern demonstrates that while landowners are predominantly farmers, those without secure landholdings are compelled to depend on daily wage labor or small-scale businesses. This reliance on multiple, often insecure income sources reflects the economic vulnerability of marginal and non-land-owning households in Meherpur.

Table 4-3: Occupational Pattern by Respondent Type

Respondent Type	Farming	Day Labor	Business	Other	Total
Land Owner	51	9	2	1	**63**
Rest of Respondents	1	9	2	0	**12**
Total	**52**	**18**	**4**	**1**	**75**

4.3 Income Level of the Respondent

The survey reveals that most respondents in Meherpur District earn between **120,000–170,000 BDT annually**. The largest group, 27% of respondents, reported an income of **150,000 BDT**. Lower incomes such as **113,000 BDT** (3%) and higher incomes like **300,000 BDT** (1%) are uncommon. This indicates a **moderate and relatively concentrated income distribution** among the surveyed population.

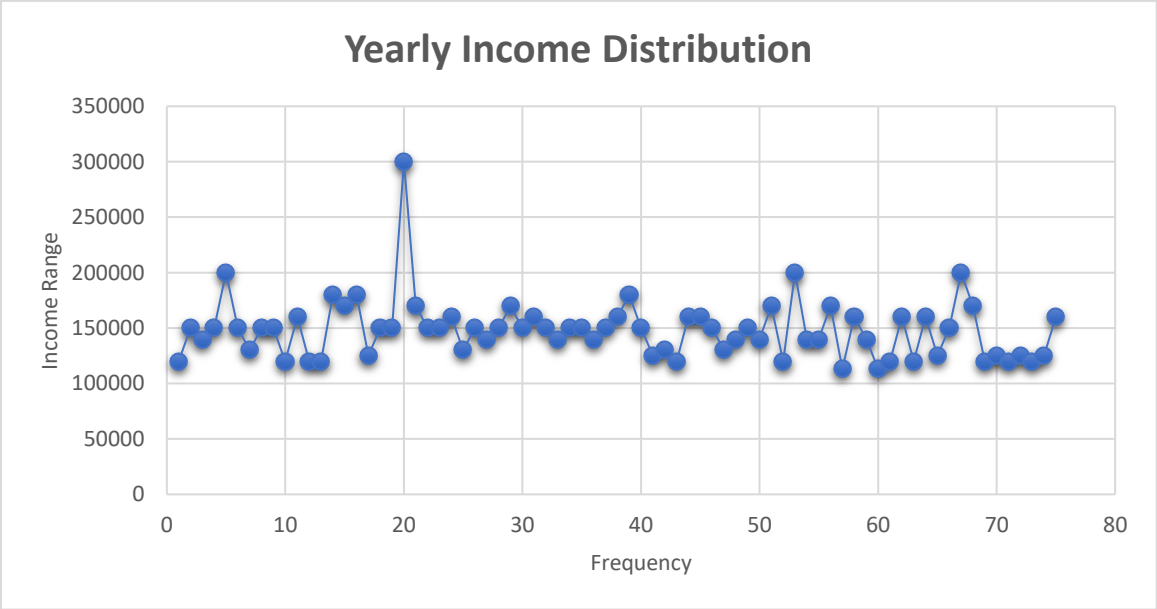


Figure 4-3: Yearly Income of the Respondent

4.4 Cultivable Land Distribution among Respondents

The survey of 75 farming households in Meherpur shows a highly fragmented landholding pattern, dominated by small and marginal farmers:

The majority of respondents operate on 1 acre (29 households, 38.7%) and 2 acres (28 households, 37.3%), together accounting for 76% of all respondents.

Very small holdings (<1 acre) are also present: 0.5–0.7 acres (8 households, 10.7%), indicating significant land pressure and marginal farming.

Medium holdings are less common: 3–4 acres (7 households, 9.3%).

Only a few respondents possess larger tracts: 5 acres (1 household, 1.3%) and 7 acres (1 household, 1.3%).

Table 4-4:

Sl No.	Cultivable Land (acres)	Number of Respondents	Percentage (%)
1	0.5 – 0.7	8	10.7%
2	1	29	38.7%
3	1.5 – 2	29	38.7%
4	3 – 4	7	9.3%
5	5 – 7	2	2.6%
	Total	75	100

4.5 Irrigation Source

The majority of farmers rely on **Shallow Tube Wells (STW)**, either solely (39%) or combined with other sources (1%). A significant proportion (35%) use both **Deep Tube Wells (DTW)** and STWs, while 20% depend solely on DTWs. Rainfed farming is rare (4%), and other sources account for only 2% in total. This shows a **high dependency on groundwater-based irrigation** in the surveyed area.

Table 4-5: Irrigation Source

Sl No.	Irrigation Source	Frequency	Percentage (%)
1	Deep Tube Well (DTW)	15	20
2	Deep Tube Well (DTW), Shallow Tube Well (STW)	26	35
3	Others	1	1
4	Rainfed Only	3	4
5	Shallow Tube Well (STW)	29	39
6	Shallow Tube Well (STW), Others	1	1
		75	100

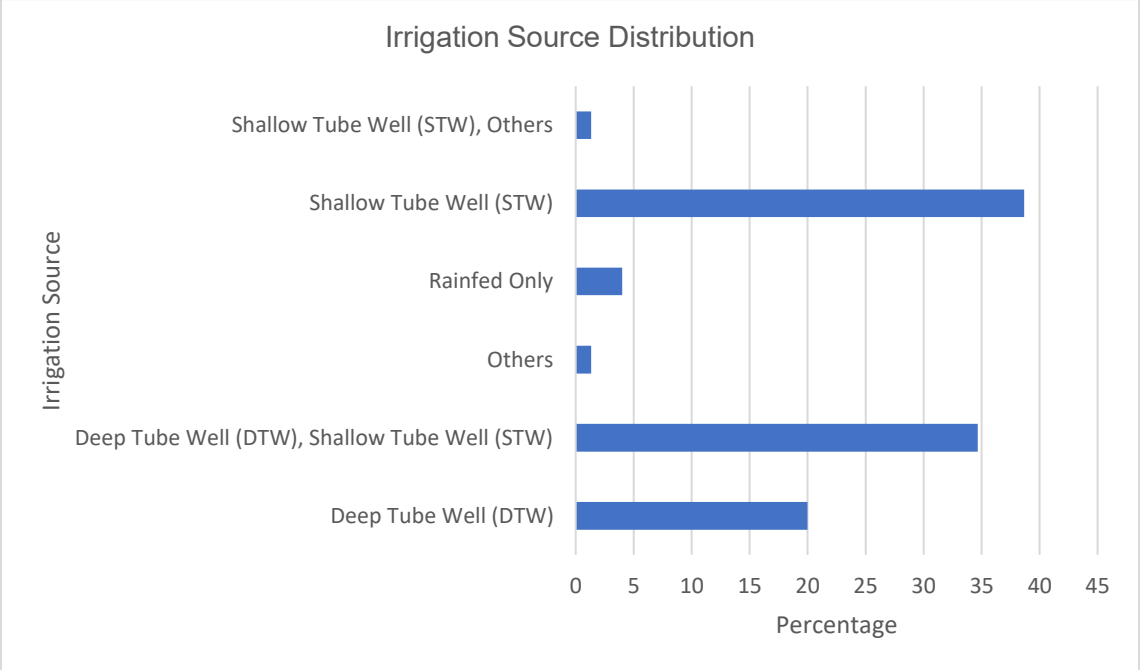
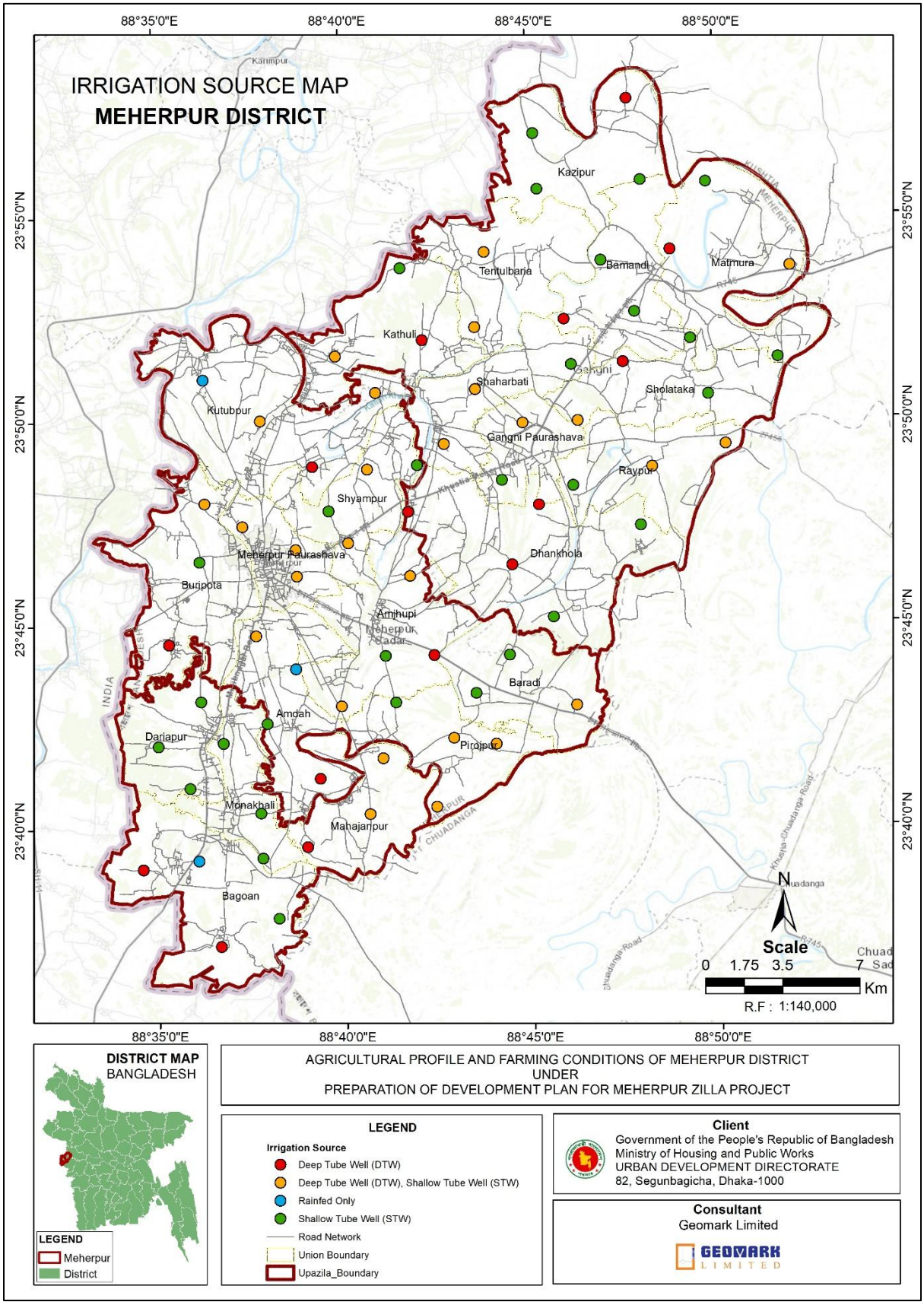


Figure 4-4: Irrigation Source Distribution



Map 4-1: Irrigation Source Map

4.6 Yearly Crop Pattern

The survey data collected from respondents reveals distinct patterns in annual crop production. Out of the total 75 respondents, 17 farmers (23%) cultivate only one crop per year, which may reflect limited access to irrigation, dependency on seasonal rainfall, or land and labor constraints. The majority, 38 farmers (51%), engage in double cropping, making it the most common practice in the area and indicating a moderate level of agricultural productivity supported by available resources. Meanwhile, 20 farmers (27%) practice triple cropping, demonstrating intensive land use and the presence of favorable conditions such as adequate irrigation, fertile soil, and sufficient agricultural inputs. Overall, the findings suggest that multi-cropping dominates the agricultural landscape, with a significant portion of farmers maximizing their land's productivity through two or more cropping cycles annually.

The following table, graph and map illustrates the number of crops cultivated per year across different locations of Meherpur District, based on survey findings.

Table 4-6: Yearly Crop Pattern

Sl No.	Number of Crops Per Year	Frequency	Percentage (%)
1	1 Crop	17	23
2	2 Crop	38	51
3	3 Crop	20	27
	Total	75	100

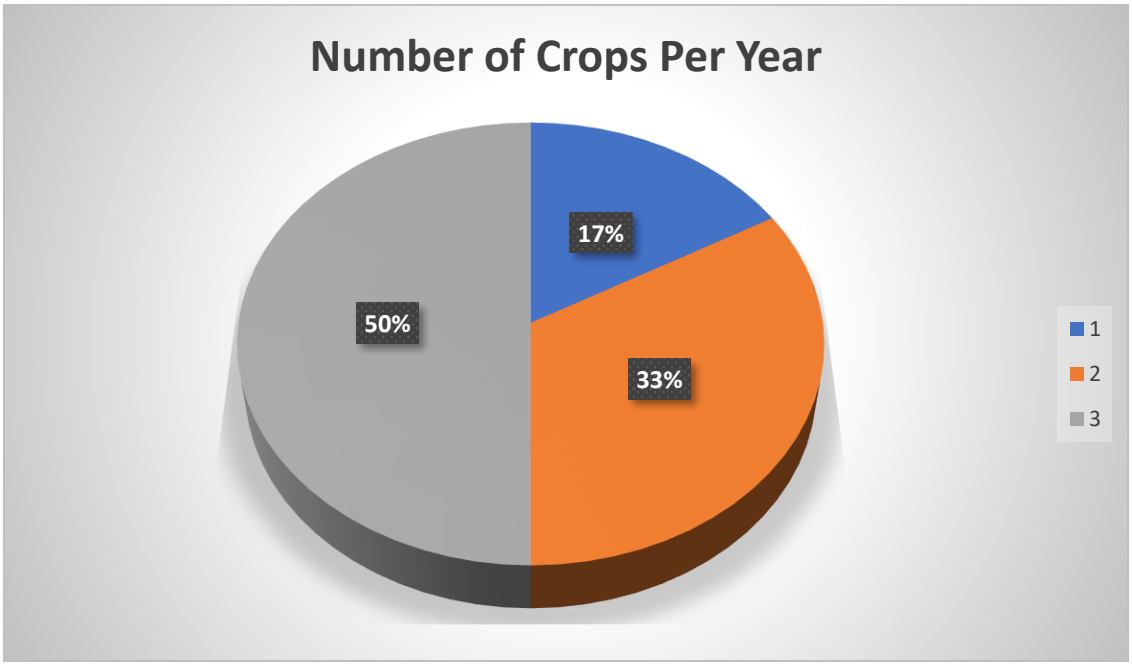
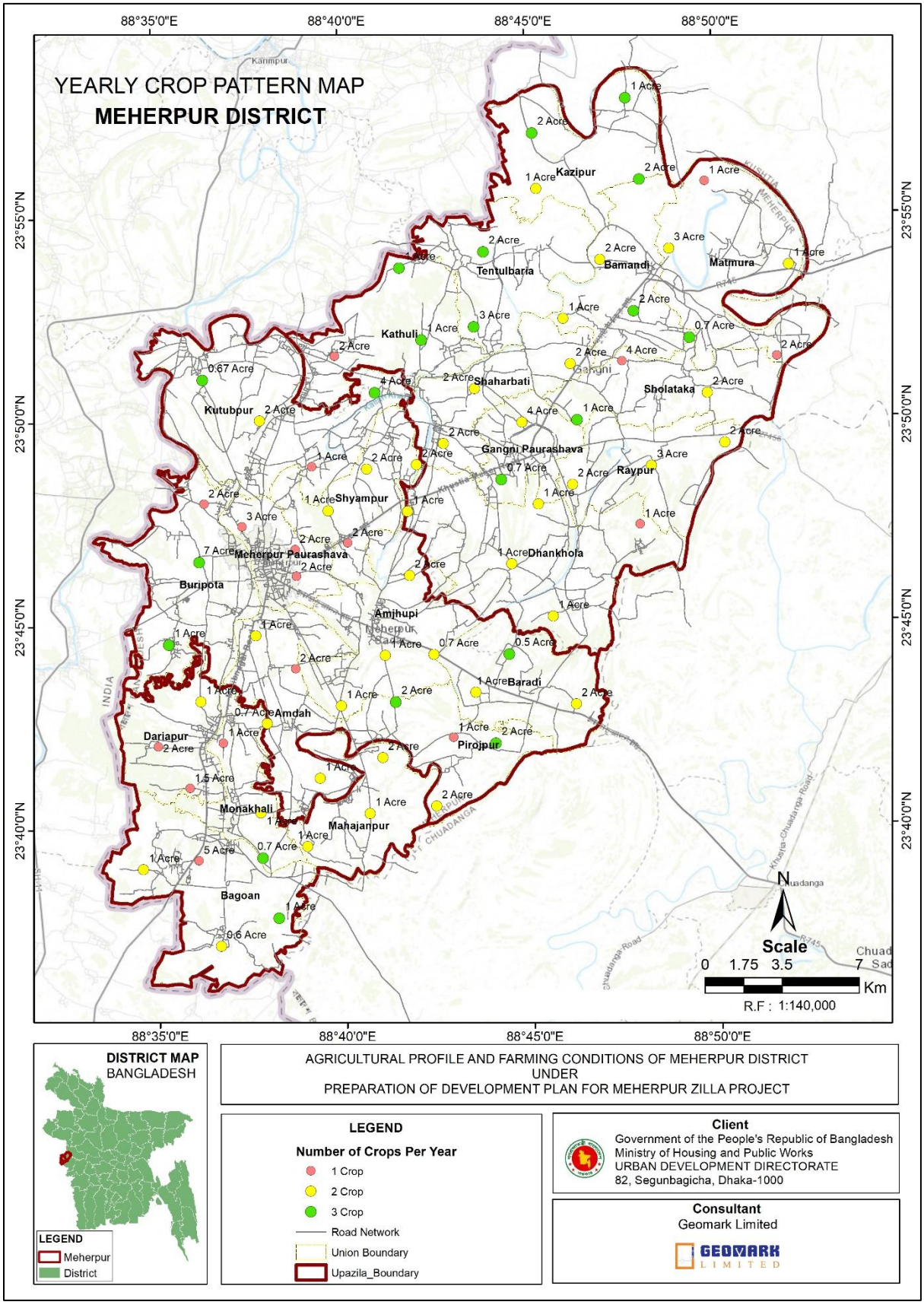


Figure 4-5: Yearly Crop Pattern



Map 4-2: Yearly Crop Pattern map

4.6.1 Analysis of Crops Grown Last Year (Season-wise)

From the responses of 75 surveyed households, it is clear that paddy dominates the cropping system, followed by jute, wheat, vegetables, and a few perennial/fruit crops. Some farmers also reported involvement in fisheries, sugarcane, banana, and mango orchards.

Dominant Crops

- **Paddy (Rice):**
  - Reported by **over 80% of respondents**.
  - Cultivated in almost every season (Dec–Apr, Jun–Sep, Oct–Nov).
  - Many households practice **double or triple paddy cultivation per year** (Boro, Aus, and Aman).
- **Jute:**
  - Reported by ~30% of households.
  - Grown mainly in **April–July/June–Sep**.
  - Often alternated with paddy (Paddy–Jute–Paddy rotation is common).
- **Wheat:**
  - Cultivated by a smaller group (~10%).
  - Season: **Dec–Mar or Aug–Nov**.
  - Sometimes paired with vegetables or paddy.

Other Seasonal Crops

- **Vegetables:**
  - Highly diverse (cauliflower, watermelon, pepper, papaya, etc.).
  - Often grown in short cycles (Jan–Jun, Jul–Dec, or 3 rotations a year).
  - Some farmers follow a **vegetable–vegetable–vegetable sequence**.
- **Fruits:**
  - Mango, Banana, Lemon reported by a few households.
  - **Perennial orchards** (e.g., mango) are harvested seasonally but maintained year-round.
- **Sugarcane & Grass:**
  - Sugarcane cultivated by 2–3 households as a long-duration cash crop.
  - Fodder grass grown year-round by some households, mainly for livestock.
- **Fisheries:**
  - 2–3 respondents reported year-round aquaculture (Jan–Dec).

Cropping Patterns

- **Single Cropping (low-intensity):**
  - Long-duration crops like sugarcane, banana, mango.
- **Double Cropping:**
  - Common: Paddy–Paddy, Paddy–Jute, Paddy–Vegetables.
- **Triple Cropping (high-intensity):**
  - Reported in fertile, irrigated plots.
  - Examples: Paddy–Jute–Paddy, Vegetable–Vegetable–Vegetable, Wheat–Vegetable–Paddy.

Key Findings

1. **Paddy monoculture dominates** → Most households depend on paddy, often in 2–3 seasonal cycles.
2. **Jute as a secondary cash crop** → Widespread in April–July rotation.
3. **Wheat and vegetables are minor but important for diversification**, income, and food security.
4. **High cropping intensity** → Many farmers practice 2 or 3 crops per year, showing good irrigation access.
5. **Perennial crops (mango, banana, lemon)** add long-term value but are limited in scale.
6. **Fisheries and livestock fodder** exist but remain niche activities.

The yearly crop calendar of Meherpur is dominated by paddy in all three agricultural seasons, with jute and vegetables as secondary crops and a few households practicing wheat, fruits, sugarcane, or fisheries. Cropping intensity is generally high, with many households cultivating 2–3 crops annually, reflecting strong irrigation dependence and land-use efficiency.

4.6.2 Current Farming Practices and Crop Distribution

Papaya (Papaya Tree)

Papaya is a widely cultivated fruit crop in Meherpur. A papaya tree generally remains productive for 2–3 years, during which time it provides consistent yields. The crop begins to bear fruit around 8–10 months after planting, making it relatively quick to establish compared to other fruit trees. The main harvesting period extends from July to November, when papayas are collected regularly as they ripen.

Snake Gourd (Chichinga / Bitti)

Snake gourd is a popular seasonal vegetable cultivated mostly during the summer. Farmers usually sow the seeds from April to June, aligning with the onset of favorable temperatures and rainfall. The crop matures quickly, with fruits becoming ready for harvest within 50–60 days of sowing. As a result, farmers can begin harvesting snake gourd from June to August. This short duration makes it an ideal intercrop between paddy cycles, providing cash income during lean months when staple crops are not being harvested.

Bottle Gourd (Lau)

Bottle gourd is another short-duration vegetable grown in homestead gardens and fields. Seeds are typically sown between March and May, and the crop matures within 60–70 days. Farmers usually begin harvesting in May and continue until July. Like snake gourd, bottle gourd provides an important source of household nutrition and supplementary income, often sold in local haats for daily cash needs.

Seasonal Paddy Varieties

1. Aus Paddy

Aus is the first paddy crop of the year, sown in March–April with the early summer rains. It matures within 3–4 months, and the harvesting season falls in July–August. This crop helps bridge the gap between the dry-season Boro harvest and the monsoon-season Aman crop. However, Aus cultivation has been declining in some areas due to irrigation challenges and competition with vegetables.

2. Aman Paddy

Aman is the most widely cultivated rice crop in Meherpur, as in many parts of Bangladesh. Seeds are sown between May–June for broadcast Aman, while transplanted Aman seedlings are planted during July–August with the arrival of monsoon rains. Aman requires around 4–5 months to mature, and harvesting typically takes place in November–December. This crop is critical for food security, as it coincides with the main harvest season when household grain stocks are replenished.

Key Insights and Implications

- Diverse Crop Mix: Farmers in Meherpur practice a mix of perennial fruit crops (papaya), short-duration vegetables (snake gourd, bottle gourd), and seasonal paddy (Aus, Aman) to ensure food and income security throughout the year.
- Crop Timing: Vegetables like snake gourd and bottle gourd are strategically grown between paddy cycles, ensuring land use efficiency and regular cash flow.
- Reliance on Paddy: Despite diversification, paddy remains the backbone of farming systems, with Aus and Aman cycles forming the core of yearly agricultural production.
- Market Dependence: Vegetables and fruits are often sold in local haats, providing immediate cash income, while paddy is marketed through aratdars and wholesalers, linking farmers to regional and national food supply chains.
- Resilience Strategy: This seasonal crop calendar demonstrates how farmers balance long-term food security (through paddy) with short-term cash income (through vegetables and fruits), a crucial adaptation to economic and climatic uncertainties.

4.7 Government Organization/Extension Service Accessibility

The survey results on access to government organizations or extension services indicate that out of 75 respondents, 57 (76%) reported having access to such services, while 18 (24%) do not receive any support from these sources. Among those with access, the Bangladesh Agricultural Development Corporation (BADC) is the primary service provider, supporting 53 respondents, mainly by supplying seeds. A small number of farmers receive combined support from both the DAE and the Bangladesh Agricultural Development Corporation (BADC) (1 respondent), while 2 respondents reported assistance from NGOs, and 1 respondent received services exclusively from Department of Agricultural Extension (DAE). This suggests that the BADC plays a dominant role in delivering agricultural extension services in the area, with minimal involvement from other agencies or organizations. The Department of Agricultural Extension (DAE) in Meherpur mainly provides technical advice, crop management training, pest and disease control guidance, and information on modern cultivation practices to farmers.

Table 4-7: Government Organization/Extension Service Accessibility

Sl No.	Service Accessibility	Frequency	Percentage
1	No Access	18	24.00
2	BADC	53	70.67
3	DAE	1	1.33
4	DAE, BADC	2	2.67
5	NGO	1	1.33
	Total	**75**	**100.00**

4.7.1 Income Level and Government Organization/Extension Service Accessibility

1. **Majority Access via BADC**
    - Most respondents who reported access to government/extension services are linked with the Bangladesh Agricultural Development Corporation (BADC).
    - Their incomes mostly range from 1,30,000 to 2,00,000 BDT per year, suggesting that lower to middle-income farmers are the primary beneficiaries of BADC support (mainly seed distribution).
2. **DAE and Combined Support (DAE + BADC)**
    - A very small number of farmers (only 3) reported access through the Department of Agricultural Extension (DAE), either exclusively or jointly with BADC.
    - Their yearly incomes fall around 1,25,000–1,30,000 BDT, which reflects relatively small farmers with modest income levels.
3. **No Access Group**
    - A significant portion of respondents (around 18 out of 75) reported no access to government/extension services.
    - Their incomes vary between 1,20,000 and 3,00,000 BDT, indicating that lack of access is not strictly income-dependent. Even higher-income farmers (e.g., 3,00,000 BDT/year) are excluded from extension services.

- Government extension services (especially BADC) are more accessible to lower and middle-income farmers, focusing primarily on input supply (like seeds).
- DAE support is minimal, despite its mandate for technical assistance and training.
- Exclusion from services affects both low and high-income farmers, pointing to coverage gaps in extension networks.

Table 4-8: Income Level and Government Organization/Extension Service Accessibility

Sl No.	Yearly Income (BDT)	BADC	DAE	DAE + BADC	No Access	Total
1	113,000	2	-	-	-	2
2	120,000	4	-	-	7	11
3	125,000	-	-	2	4	6
4	130,000	3	1	-	-	4
5	140,000	9	-	-	-	9
6	150,000	20	-	-	-	20
7	160,000	7	-	-	3	10
8	170,000	4	-	-	2	6
9	180,000	2	-	-	1	3
10	200,000	2	-	-	1	3
11	300,000	-	-	-	1	1
	Total	**53**	**1**	**2**	**19**	**75**

4.7.2 Land Area & Access to BADC

The analysis of cultivable land and access to BADC services shows that a total of **53 respondents** reported using BADC facilities for agricultural support such as seeds. The distribution highlights a strong concentration among **small and medium-scale farmers**, particularly those with **1 to 2 acres of land**. Among them, **19 respondents with 1 acre** and **25 respondents with 2 acres** together represent more than **four-fifths of all BADC users**. This clearly indicates that BADC plays a crucial role in supporting smallholders, who form the majority of cultivators in Meherpur.

A few respondents with **very small holdings (less than 1 acre)** also reported access — including **1 respondent with 0.5 acre** and **3 respondents with 0.7 acre**. Although their share is small, it demonstrates that BADC services are reaching even the most vulnerable groups, albeit on a limited scale. On the other hand, only **5 respondents with larger holdings (3–4 acres)** reported using BADC services, suggesting that bigger farmers may either rely on private markets, local dealers, or have other means of securing inputs beyond BADC.

Overall, the findings confirm that **BADC's outreach is strongest among small and marginal farmers**, who depend heavily on institutional input supply for sustaining their productivity. However, the limited access among the **smallest farmers (below 1 acre)** indicates a gap where further strengthening of BADC's services could enhance inclusiveness.

Table 4-9: Land Area & Access to BADC

Sl No.	Cultivable Land (acres)	Number of Respondents with BADC Access
1	0.5	1
2	0.7	3
3	1	19
4	2	25
5	3	3
6	4	2
	Total	**53**

4.8 Credit/Loan for Farming Accessibility

The survey findings on access to credit or loans for farming reveal that out of 75 respondents, 50 (67%) have access to financial support, while 25 (33%) do not. Among those who have access, the majority, 43 respondents obtain loans from NGOs, making them the most common source of agricultural credit. Smaller proportions receive loans from local lenders (1 respondent) and banks (5 respondents), while one respondent reported relying on "others" for loans. This indicates that NGOs play a dominant role in providing credit for farming in the surveyed area, with minimal contributions from formal banking institutions or local lenders.

Table 4-10: Credit/Loan for Farming Accessibility

Sl No.	Service Accessibility	Frequency	Percentage
1	No Access	25	33.33
2	Bank	5	6.67
3	Local Lender	1	1.33
4	NGO	43	57.33
5	Others	1	1.33
	Total	**75**	**100.00**

4.9 Use of Modern Machinery

The survey results show that power tillers are the most commonly used machinery among respondents, either alone or in combination with tractors. Specifically, 34 respondents (45%) rely solely on power tillers, while 25 respondents (33%) use both tractors and power tillers. Only 11 respondents (15%) use tractors exclusively, and a small proportion—5 respondents (7%)—still depend on traditional equipment. This indicates a high level of mechanization in farming practices, with power tillers being the predominant choice in the area.

Table 4-11: Machinery Type

Sl No.	Machinery Type	Frequency	Percentage (%)
1	Power Tiller	34	45
2	Tractor, Power Tiller	25	33
3	Tractor	11	15
4	Traditional equipment	5	7
	Total	75	100

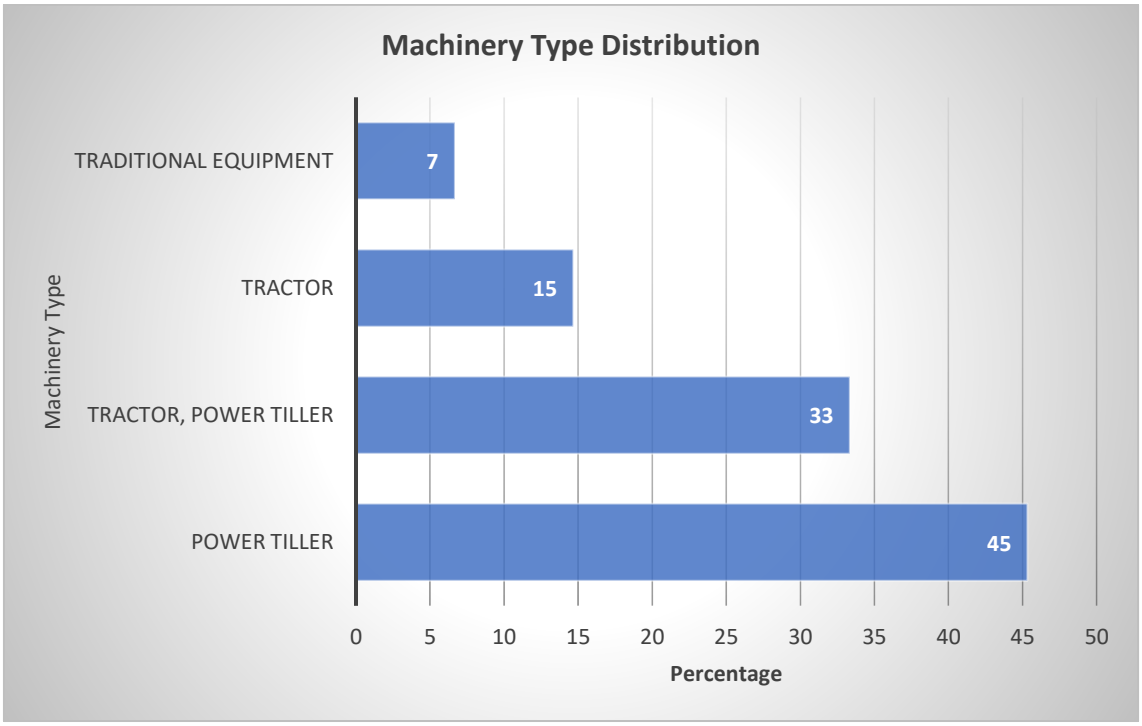


Figure 4-6: Machinery Type Distribution

4.10 Crop Selling Practice

The majority of farmers (80%) sell their crops at the local haat. A smaller share (8%) use both the village market and local haat, while 4% each sell from home or directly from the field. Only 1% sell through combined means like local haat & field, home & field, or village market only. This shows that the local haat remains the primary hub for crop transactions.

- Most farmers don't sell directly to consumers due to two main reasons:
  - Time constraints – Many lack the time or manpower to manage direct sales.
  - Money issues – They face cash flow problems, delayed payments, or cannot collect full payments at once.
  - Other reasons include bargaining difficulties, uncertain prices, low demand, and risk of crop loss. These factors make local markets or intermediaries more practical for farmers.

Table 4-12: Crop Selling Place

Sl No.	Crop Selling Place	Frequency	Percentage (%)
1	Local Haat	60	80
2	Local Haat, Sell from Field	1	1
3	Sell from Field	3	4
4	Sell from Home	3	4
5	Sell from Home, Sell from Field	1	1
6	Village Market	1	1
7	Village Market, Local Haat	6	8
		75	100

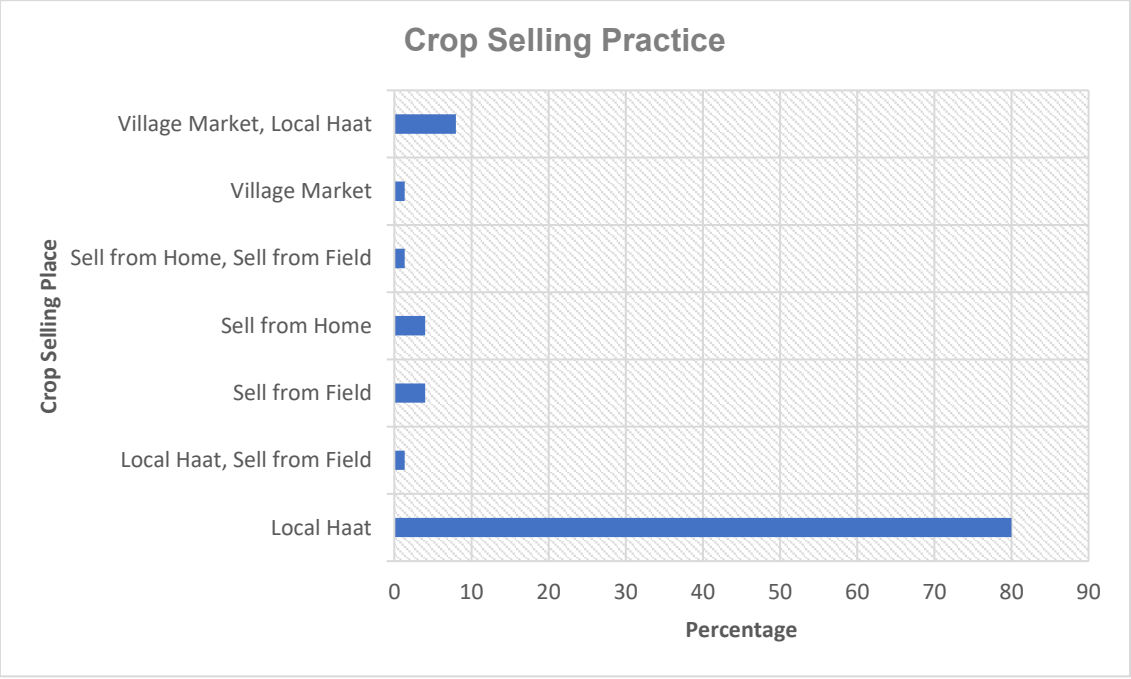
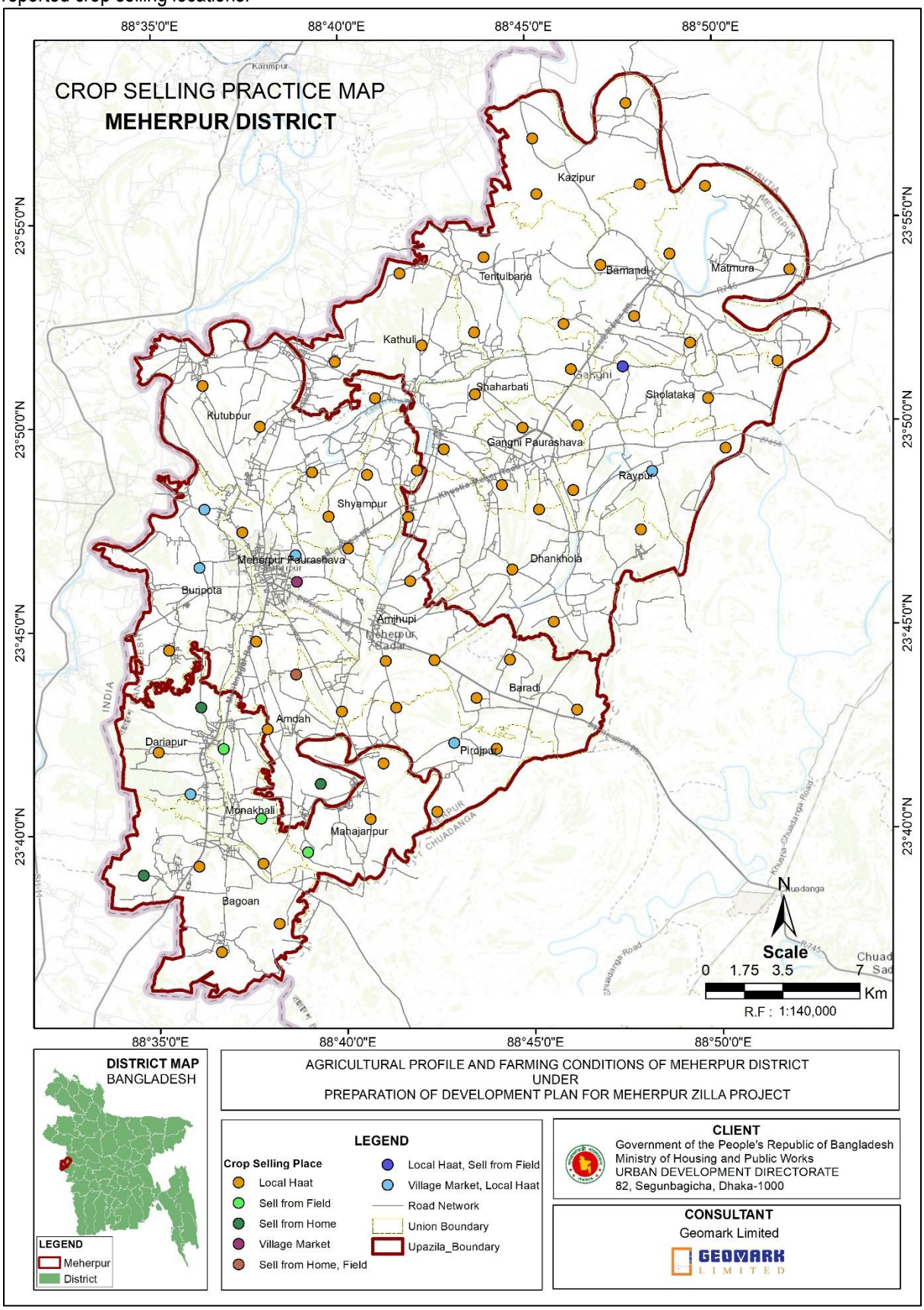


Figure 4-7: Crop Selling Place Distribution

The following map illustrates the spatial distribution of 75 surveyed locations in Meherpur District along with their reported crop selling locations.



Map 4-3: Crop Selling Place Map

4.10.1 Market Access and Local Trading Hubs

Local Markets (Haat–Bazaars) of Meherpur District

Agricultural trade in Meherpur District revolves around a network of local haats and bazaars, where farmers sell their key crops such as paddy, jute, and wheat. These markets act as the primary rural trade hubs and collection centers, linking smallholder farmers with traders, aratdars, and regional wholesale markets.

Upazila	Name of Local Haat–Bazaars
Meherpur Sadar	Amjhupi Haat; Amdah Haat; Ujolpur Haat; Kulbaria Haat; Khoksa Haat; Notun Darbeshpur Haat; Modanadanga Haat; Pirojpur Haat; Baradi Haat; Buripota Haat; Sholomari Haat
Gangni	Akubpur Haat–Bazar (Motmura); Amtail Haat–Bazar; Karamdi Haat–Bazar (Tetulbaria); Kazipur Bazar; Kazipur Sahebnagar Bazar; Kodailkati Bazar (Motmura); Khasmahal Bazar (Kathuli); Garabaria Bazar (Kathuli); Chitla Bazar (Dhankhola); Jorpukuria Bazar; Tetulbaria Bazar; Terail Bazar (Bamandi); Debipur Bazar (Bamandi); Dhalaramkrishnapur Bazar (Kathuli); Dhankhola Bazar; Naodapara; Baut Bazar (Motmura); Bamandi Nishipur Haat–Bazar (including livestock haat); Betbaria (Kazipur); Bhabanipur Bazar
Mujibnagar	Anandabas Bazar (Bagowan); Kedar Ganj Bazar (Bagowan); Komorpur Bazar (Mohajonpur); Gaurinagar Haat (Dariapur); Dariapur Bazar (Dariapur); Purandar Pur Haat (Dariapur); Monakhali Bazar (Monakhali)

These markets function as the core rural trade centers where farmers bring their harvested crops—primarily paddy, jute, and wheat—for sale. For most farming households, the nearest haat (within 3–10 km) acts as the first point of market linkage, ensuring quick disposal of perishable produce and reducing transport costs.

In many cases, farmers do not go to the haat directly but instead sell their paddy from home to local aratdars (commission agents/wholesalers). The aratdars collect paddy from village households using three wheelers or trucks and then consolidate the stock. This collected paddy is later transported to the wholesale markets in Kushtia, where it is purchased by millers and bulk traders for processing and further distribution.

Figure 4-8: Aratdars Collect Paddy from Village Households

Current Vegetable Transportation Flow

At present, the major vegetables being cultivated and marketed from Meherpur include snake gourd, taro, papaya, and cucumber. These products are first brought to local loading points, from where they are transported using power tillers and three-wheeled vehicles (such as vans, auto-rickshaws, or small trucks).

The bulk of these vegetables are destined for the wholesale markets of Dhaka, particularly Jatrabari and Karwan Bazar, which are among the largest vegetable trading hubs in Bangladesh. From there, the produce is further distributed across different retail markets nationwide.

This demonstrates a clear marketing chain:

Local Production → Loading Point → Transport by Power Tiller/Three-Wheeler → Dhaka Wholesale Market (Jatrabari/Karwan Bazar) → National Retail Markets.

Figure 4-9: Vegetable Transportation System

Seasonal Variation in Loading Point Activity

The survey findings highlight clear seasonal differences in the activity levels of loading points across Meherpur District.

- Winter Season (Peak Period):

During the winter harvest, all loading points across the district were active. Each point handled a very high volume, with 15–20 trucks being loaded daily per point. This reflects the seasonal surge in agricultural output, particularly for paddy, wheat, and vegetables, which creates strong demand for bulk transport.

- Current Season (Off-Peak):

In contrast, the present season shows a sharp decline in loading activity. Not all loading points are active, and those in operation handle a reduced flow of goods, with only 3–5 trucks loaded per day. This reduced activity reflects both lower agricultural output and decreased transport demand during non-peak harvest months.

This seasonal fluctuation underlines the highly cyclical nature of agricultural transport demand in Meherpur. Infrastructure and logistics systems face heavy strain in peak periods but remain underutilized in off-peak months. Efficient management strategies—such as staggered scheduling, storage facilities, and crop diversification—could help balance utilization across the year.

The images show both inactive and operating loading points in Meherpur. During the current season, some points remain unused, while others are active with crops gathered and waiting for truck arrival.

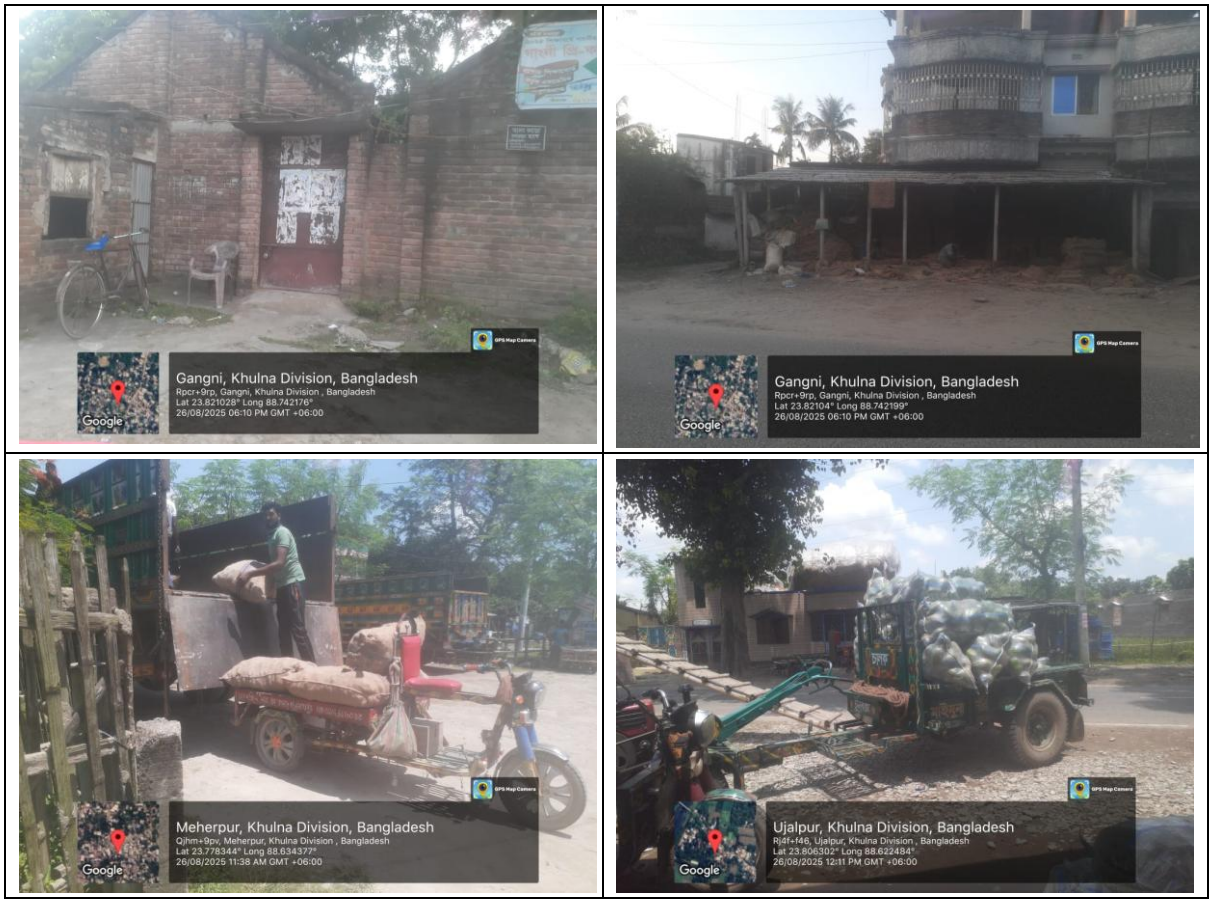


Figure 4-10: Present Scenario of Load-Unload Points

4.10.2 Problems in Selling Crops

The survey findings reveal that a significant majority of respondents (72 out of 75) face problems in selling their crops. Among these, the most prevalent issue—reported by 63 respondents—is low prices combined with a lack of buyers. A smaller number identified low prices alone (3 respondents), lack of buyers alone (none), transportation problems (4 respondents), and a combination of low prices and transportation issues (1 respondent). Only 3 respondents reported no problems at all. This suggests that market access and fair pricing are the dominant challenges in crop marketing for the surveyed farmers.

Table 4-13: Opinion for Crop Selling Problems

Sl No.	Main Problems	Frequency	Percentage
1	Lack of Buyers	3	4.00
2	Low Price	63	84.00
3	Low Price, Lack of Buyers	1	1.33
4	Low Price, Transportation	4	5.33
5	Transportation	1	1.33
6	Don't face problem	3	4.00
	Total	**75**	**100.00**

4.10.3 Direct Selling to Consumers

The survey reveals that farmers face a variety of challenges in selling their crops, with financial and time-related constraints emerging as the most significant issues. **Money-related problems** are the most frequently reported, affecting 28 respondents. These include insufficient funds, delays in receiving payments, and difficulties in collecting or managing money. This indicates that liquidity and financial management are major hurdles for farmers, often limiting their ability to invest in production or transport their crops to the market efficiently.

Closely following, **time-related challenges** were reported by 23 respondents. Farmers frequently mentioned not having enough time, spending too much time on post-harvest activities, or facing delays that affect timely sale of crops. This highlights the critical role of labor and time management in agricultural productivity and market participation.

Other challenges, though less frequent, still impact farmers' operations. **Crop loss and damage**, reported by 3 respondents, points to issues such as pests, natural hazards, or post-harvest handling problems. **Low demand and pricing difficulties**, reported by 4 respondents, reflect market fluctuations and the inability to secure fair prices for their produce. Smaller concerns like **bargaining difficulties, inadequate manpower, and unsold crops** were mentioned by a few respondents, indicating occasional operational constraints.

Overall, the findings underscore that financial and time management are the primary constraints for farmers in selling their crops, while operational, market, and crop-specific issues are secondary but still relevant. Addressing these key challenges could significantly improve farmers' efficiency, income, and market participation.

4.11 Transportation System

The survey indicates that farmers primarily rely on **Van / Pushcart** for transporting their crops, with **68% of respondents (51 out of 75)** using this mode. Other commonly used transportation methods include **Pickup / Small Truck** and miscellaneous modes, each accounting for **9%** of respondents. Minor combinations of manual labor, bicycles, rickshaws, and larger trucks were reported by a few farmers, representing 1–5% of the sample. Overall, the findings suggest that small-scale motorized transport is the dominant mode, while manual and mixed methods are less common.

Table 4-14: Mode of Transportation

Sl No.	Modes of Transportation Used	Frequency	Percentage (%)
1	Bicycle / Rickshaw Van / Pushcart	2	3
2	Headload / Manual Carrying	4	5
3	Headload / Manual Carrying Pickup / Small Truck	1	1
4	Headload / Manual Carrying Pickup / Small Truck Large Truck / Tractor	1	1
5	Headload / Manual Carrying Van / Pushcart	1	1
6	Others	7	9
7	Pickup / Small Truck	7	9
9	Van / Pushcart	51	68
10	Van / Pushcart Pickup / Small Truck	1	1
	Grand Total	75	100

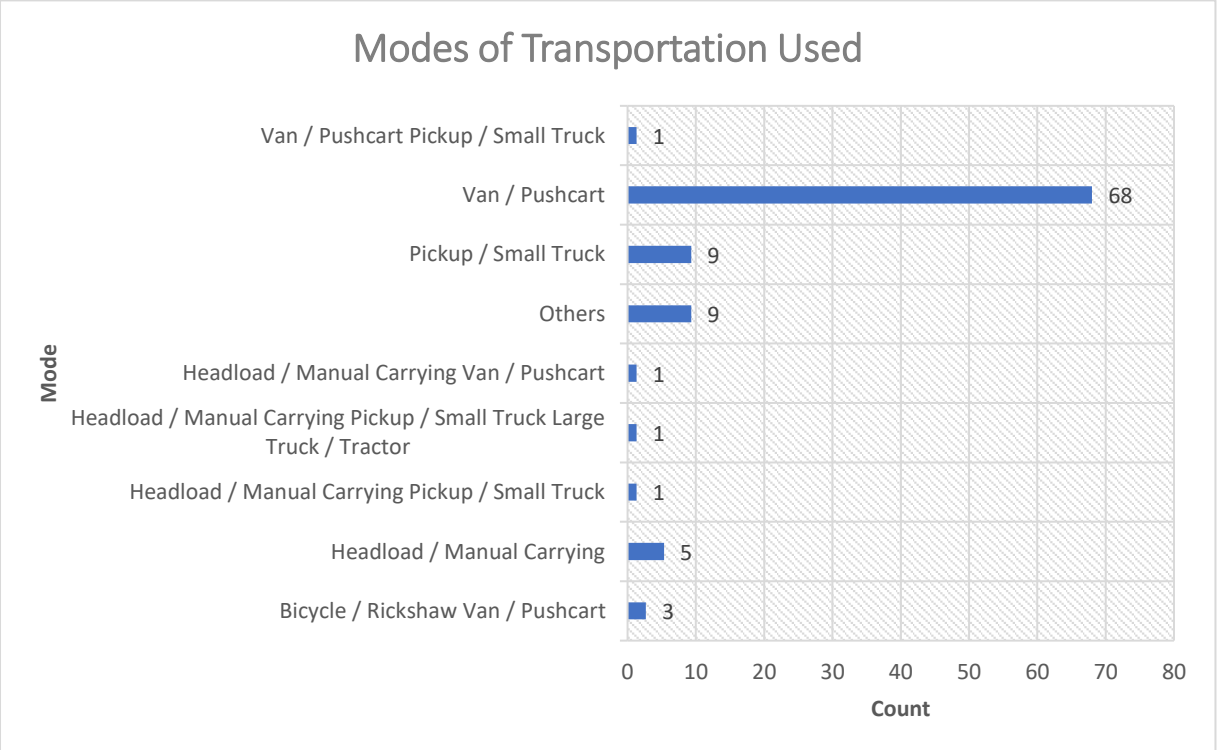


Figure 4-11 Mode of Transportation

4.11.1 Distance to Main Market

The survey shows that most farmers' main markets are located within a **short to moderate distance from their farms**. Distances of **3–5 km** are the most common, with **31 respondents** falling within this range, indicating that local markets are the primary points of sale. A smaller group of farmers travels **6–10 km** (21 respondents) to reach markets, while only a few (15 respondents) travels **over 10 km**, with distances extending up to 40 km. This suggests that while proximity to markets is generally convenient for most farmers, some still face longer travel distances, which could impact transportation costs and timely sale of crops.

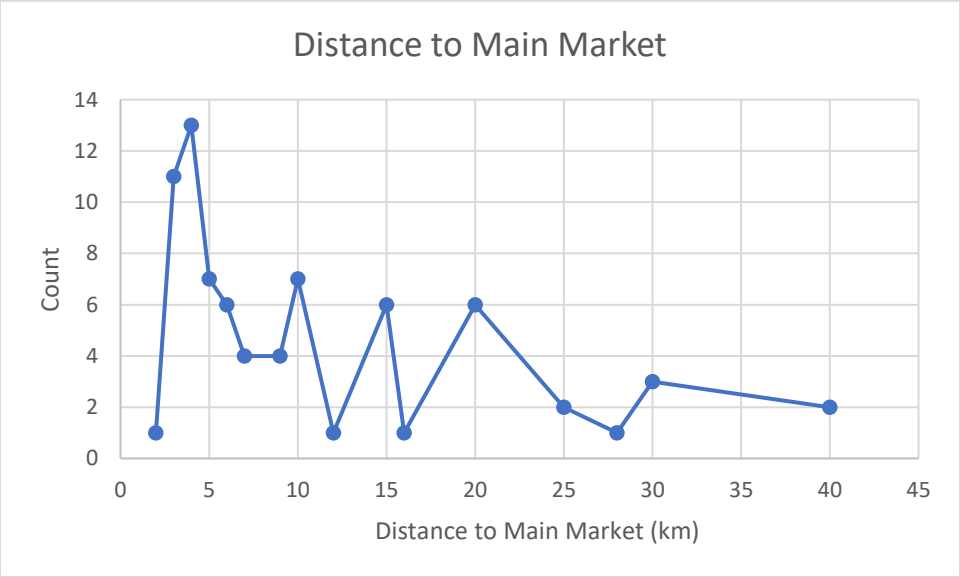


Figure 4-12: Distance to Main Market

4.11.2 Transportation-Related Problems

The survey indicates that the majority of farmers face **transportation-related challenges** when selling their crops. Out of 75 respondents, **73 reported experiencing problems**, while only 2 reported no issues. Among the problems identified, **poor road conditions** are the most frequently cited, affecting 54 respondents, often in combination with high transport costs (7 respondents). **High transport cost alone** is a concern for 11 respondents, while a few reported **lack of available vehicles** or other unspecified issues. This highlights that infrastructure and transport expenses are major barriers for farmers, potentially impacting timely crop sales and overall profitability.

4-15: Transportation-Related Problems

Sl No.	Transportation-Related Problems	Frequency	Percentage
1	High Transport Cost	11	14.67
2	High Transport Cost, Lack of Available Vehicles	1	1.33
3	Poor Road Conditions	54	72.00
4	Poor Road Conditions, High Transport Cost	7	9.33
5	No Issues	2	2.67
	Total	**75**	**100.00**

4.12 Storage Facility

The survey findings reveal that the majority of farmers (53 out of 75 respondents) **do not have access to any storage or cold storage facilities** for preserving their crops. Among the 22 farmers who reported using storage, most rely on **personal storage facilities** (19 respondents), while only a small proportion use **rented storage spaces** (2 respondents) or **community warehouses** (1 respondent). The concept of a community warehouse, as reported, refers to a facility developed collectively by two or three farmers.

The storage facilities are typically used to store crops for two to three months when market prices are low, enabling farmers to sell their produce later at a fair price.

These results highlight that **formal or shared storage solutions are largely underutilized**, leaving most farmers dependent on individual arrangements, which may compromise crop quality and reduce income opportunities due to the lack of preservation and collective bargaining advantages.

Table 4-16: Storage Facility

Sl No.	Storage Facility	Frequency	Percentage
1	Personal Storage	19	25.33
2	Rented Facility	2	2.67
3	Community Warehouse	1	1.33
4	No Storage Facility	53	70.67
	Total	**75**	**100.00**

4.13 Use of Agricultural Residuals

The survey reveals that most farmers (**68 out of 75 respondents**) **store or reuse agricultural residues** such as straw, husk, and stalks, while only a small number (**7 respondents**) do not. Among those who reuse residues, the majority (**48 respondents**) use them as **animal feed**, followed by **fuel** (8 respondents), selling in the market (6 respondents), using as **organic fertilizer** (3 respondents), or selling specifically as animal feed (3 respondents). This indicates that farmers actively utilize agricultural by-products, primarily to support livestock and energy needs, with some also generating additional income through sales.

Table 4-17: Use of Agricultural Residuals

Sl No.	Storage Facility	Frequency	Percentage
1	Animal Feed	48	64.00
2	Fuel	8	10.67
3	Animal Feed, Sell in Market	3	4.00
4	Organic Fertilizer	3	4.00
5	Sell in Market	6	8.00
6	No Use	7	9.33
	Total	**75**	**100.00**

4.14 Farming Status and Farm Holding

The survey reveals that the majority of respondents engaged in farming as their primary occupation belong to the small farm holding category. Small farmers are defined as those owning less than 2.5 acres of land, while medium farmers are those with more than 2.5 acres of land.

Out of 75 surveyed individuals:

- 50 respondents engaged in farming are small farmers, while only 2 respondents fall under the medium farmer category.
- Among individuals whose primary occupation is non-farming, 18 respondents are identified as small farmers, and 5 respondents as medium farmers.

Table 4-18: Fisher's Exact test between Farming Status and Farming Land Amount

Fisher's Exact Test					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Fisher's Exact Test				.025	.025
Linear-by-Linear Association	5.953	1	.015		
N of Valid Cases	75				

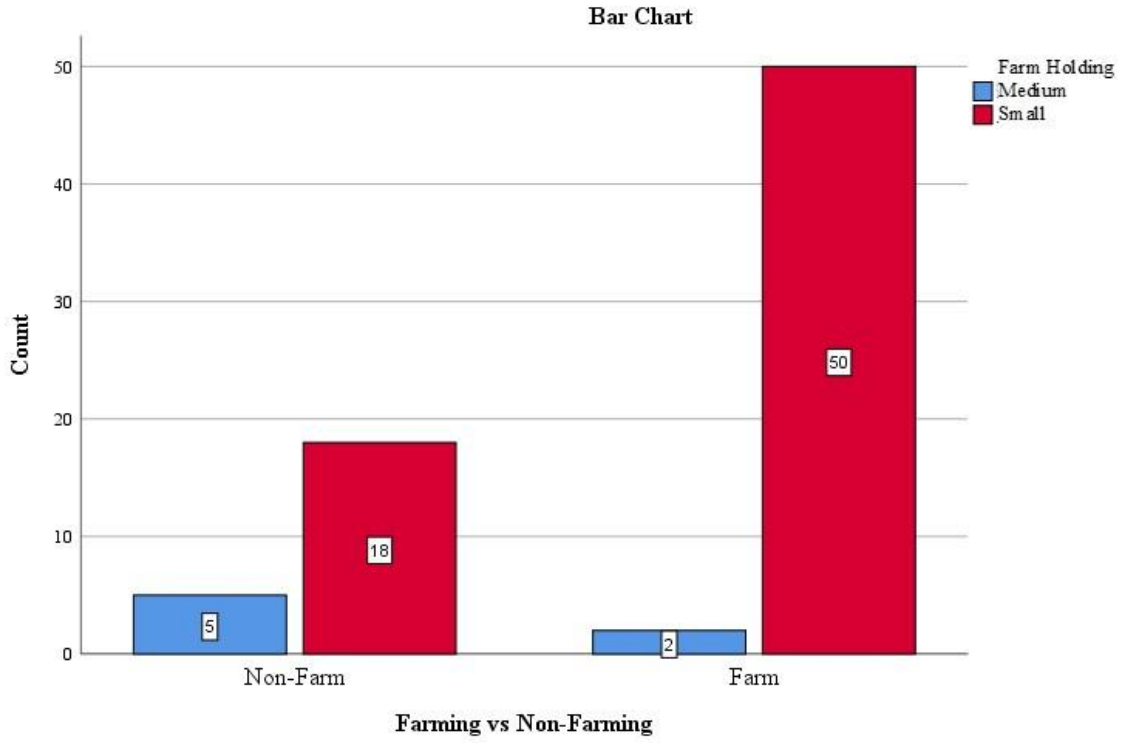


Figure 4-13: Bar chart of Fisher's Exact test between Farming Status and Farming Land Amount

4.15 Loan from NGO and Farm Holding

Using Fisher's Exact Test at a 90% confidence level with a 10% margin of error, the relationship between farm holding size and credit accessibility from NGOs was found to be statistically significant. This indicates that farmers who access credit from NGOs are predominantly small farmers (owning less than 2.5 acres of agricultural land).

Out of the 43 respondents who reported taking loans from NGOs:

- 41 respondents (95%) are small farmers,
- while only 2 respondents (5%) are medium farmers.

This clearly suggests that NGOs primarily target and serve small farmers, providing them with essential credit support. However, the findings also highlight that NGOs could expand their services further, especially in addressing broader challenges faced by smallholders such as transportation, marketing, and product value chain development.

Table 4-19: Fisher's Exact test between Loan Accessibility from NGO and Farm Holding

Fisher's Exact Test					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Fisher's Exact Test				0.1	0.1
Linear-by-Linear Association	2.576	1	0.1		
N of Valid Cases	75				

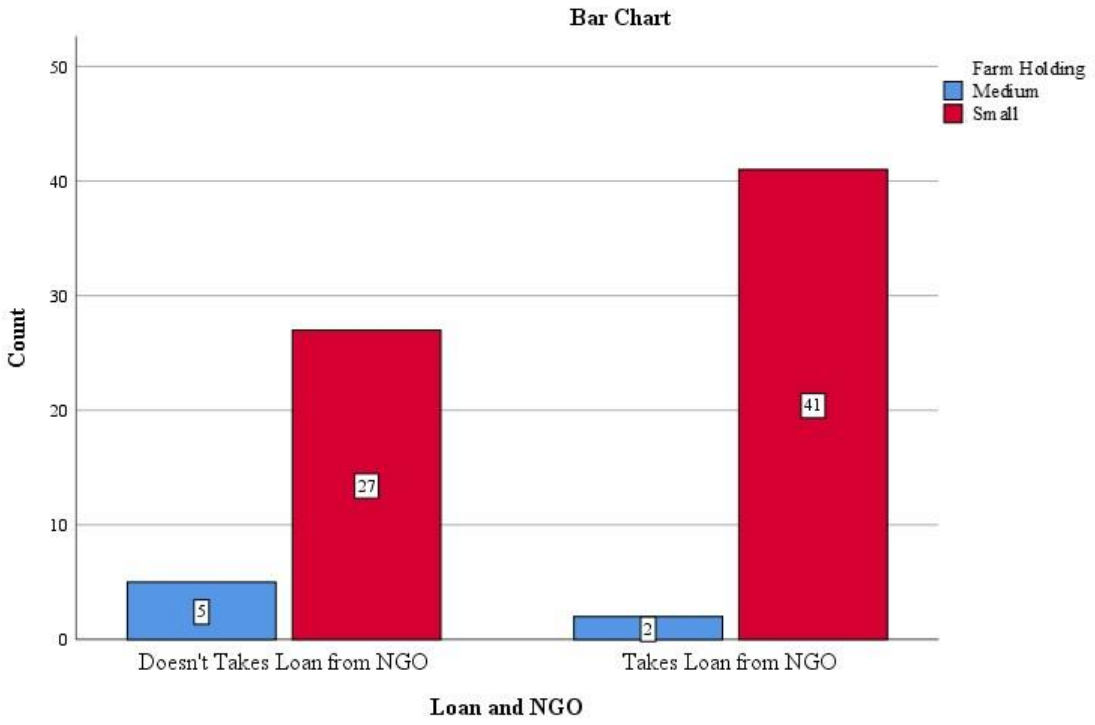
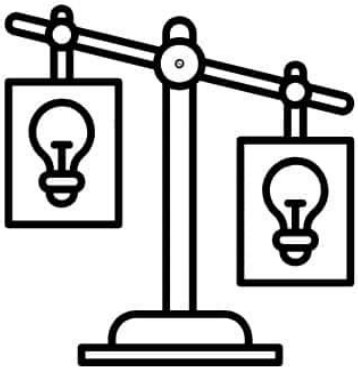


Figure 4-14: Bar chart of Fisher's Exact test between Loan Accessibility from NGO and Farm Holding



Comparative Analysis

Chapter 5
Comprehensive Comparative Analysis of Farming Condition Survey and Seasonal Transport Load–Unload Survey

Chapter 5: Comprehensive Comparative Analysis of Farming Condition Survey and Seasonal Transport Load–Unload Survey

In 2025, two significant field-based surveys were conducted in Meherpur District to better understand the dynamics of agricultural production, market access, and transport logistics:

1. **Farming Condition Survey (FCS)** — Conducted to document the agricultural practices, resource use, market linkages, and infrastructural challenges faced by farming households. It focused heavily on transport and market access at the farm gate level.
2. **Seasonal Transport Load–Unload Survey (STS)** — Implemented to capture the movement of goods, vehicle operations, and logistical bottlenecks during the peak agricultural harvest season when freight volumes surge.

Although these surveys were designed for different scopes, there is substantial overlap in their findings. Both touch on **transportation patterns, market access, infrastructure quality, storage capacity, and operational constraints**, albeit from different ends of the supply chain.

The FCS focuses on the **origin point** of the supply chain, the farm and immediate surroundings; whereas the STS captures the **distribution segment**, where commodities are transported in bulk to regional and national markets. This chapter compares the two datasets in detail, highlighting similarities, differences, and how they collectively reveal the interconnected challenges of agricultural logistics in Meherpur.

5.1 Agricultural Production and Commodity Flow

The Farming Condition Survey indicates that Meherpur's agricultural base is dominated by **paddy, wheat, and a variety of vegetables**, grown in seasonal cycles. Cropping patterns are highly dependent on irrigation availability and market demand, with harvest peaks influencing when produce enters the market.

The Seasonal Transport Survey reflects these same peaks on the distribution side. During high-yield periods, large volumes of **perishable produce** — including vegetables, fruits, and certain high-value crops — are transported to wholesale markets in Dhaka, Khulna, and other regions. This movement is largely concentrated over a short timeframe, putting pressure on both rural feeder roads and major highways.

Link: The production cycles documented in the FCS directly drive the seasonal freight volumes captured in the STS. The surge in output at the farm level has a cascading effect on transport demand, hub congestion, and vehicle availability.

5.2 Market Access and Distance Patterns

The FCS shows that **farmers predominantly sell within short distances**, with:

- **3–5 km** being the most common travel range (31 respondents),
- **6–10 km** the second most common (21 respondents),
- and only a minority exceeding 10 km.

This indicates a strong reliance on **local haats and nearby aggregation points**. The short-haul nature of their marketing is partly due to transport cost sensitivity and partly due to limited direct market linkages with distant urban centers.

The STS, on the other hand, maps out **longer and more complex route networks**:

- Short feeder trips of 2–20 km from rural collection points to larger aggregation hubs.
- Medium to long-haul trips of 150–600 km for inter-district trade.

- Major outbound corridors include Meherpur–Kushtia–Dhaka and Meherpur–Jashore–Khulna routes.

Comparison: While farmers' transport patterns are confined to local circuits, seasonal freight routes integrate Meherpur into the national food supply chain. However, both rely on the **same initial road links** from farm areas to primary roads, meaning that congestion in peak freight season can directly delay farmers' local deliveries.

5.3 Transport Modes

The contrast between the two surveys' transport modes is stark:

FCS:

- **Van/Pushcart** — 68% of respondents, ideal for short distances and narrow rural roads.
- **Pickup/Small Truck** — 9%, for larger loads or when moving to more distant markets.
- **Bicycles, Rickshaw Vans, Manual Carrying** — 14%, used where road access is limited or distances are minimal.

STS:

- **Large Trucks** — 51.52%, essential for moving bulk loads over long distances.
- **Motorized 3-Wheelers** — 30.30%, versatile for short-to-medium hauls from collection points to hubs.
- **Medium Trucks** — 12.12%, used for regional trips.
- **Vans** — 6.06%, serving smaller consignments.

Interpretation: Farmers' transport is designed for **low-volume, high-frequency, short-haul trips**, while seasonal freight is designed for **high-volume, long-haul movement**. Despite this difference, both types of vehicles use the same **first-mile infrastructure**.

5.4 Vehicle Ownership and Operation

Both surveys reveal a common structural feature — **dominance of rented vehicles**:

- FCS: Most farmers hire vehicles for market trips, with ownership limited to low-cost options like pushcarts or bicycles.
- STS: 75% of vehicles are rented, 25% owner-operated.

Significance: This shared rental dependency means that during seasonal peaks, vehicle hire rates can rise sharply, and availability can drop — affecting both smallholder farmers and freight operators.

5.5 Transport and Logistics Challenges

FCS Challenges:

- **Poor Road Conditions** — 52 respondents cited unpaved roads, potholes, and narrow routes.
- **High Transport Costs** — 11 respondents noted affordability as a key issue.
- **Combination of Road and Cost Issues** — 7 respondents.
- Only 2 reported no problems.

STS Challenges:

- **Lack of Facilities** — Loading/unloading zones, rest stops, and sanitation facilities are inadequate.
- **Route Congestion** — Particularly at peak times.

- 40% of respondents reported operational problems, while 60% reported none.

Common Ground: Poor feeder roads slow down both local farmer deliveries and seasonal freight. Seasonal congestion further compounds delay for short-haul farm trips.

5.6 Storage and Post-Harvest Handling

FCS:

- 71% of farmers have no storage access; perishable goods are sold quickly to avoid spoilage.
- Cold storage is rare, leading to forced sales at lower prices.

STS:

- Hubs and wholesale markets lack adequate cold storage facilities.
- Handling capacity is often exceeded during peak periods, causing quality losses.

Connection: Weak cold chain infrastructure affects both the farm and freight stages of the supply chain, reducing product value and market competitiveness.

5.7 Seasonal Peaks and Their Impact

Both surveys reflect strong seasonality:

- FCS: Transport demand spikes during harvest, increasing competition for vehicles.
- STS: Freight volumes surge, causing congestion and logistical bottlenecks.

The interaction is **bidirectional** — freight surges can delay farm deliveries, and farm surpluses increase the load on freight networks.

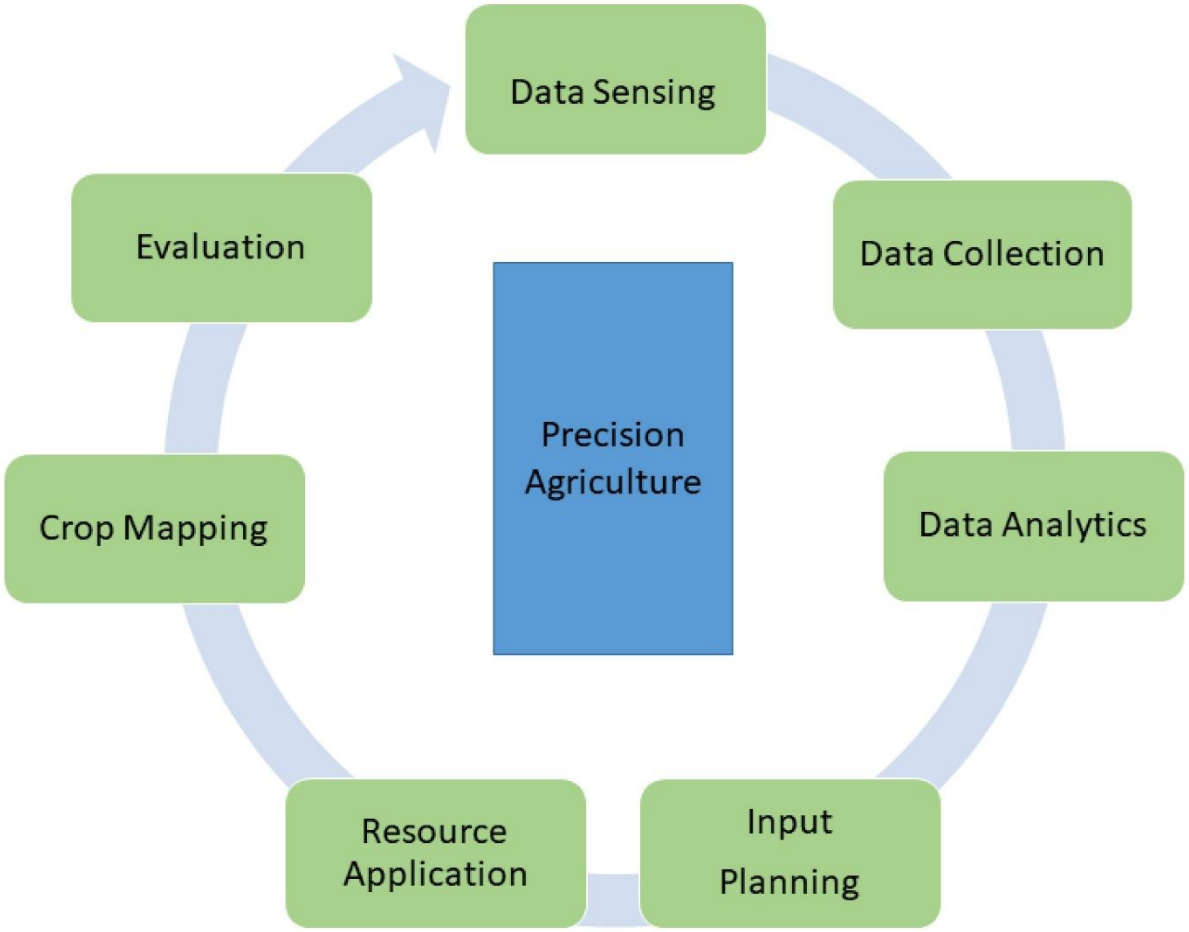
Economic Implications

- Farmers' incomes (BDT 120,000–160,000 for most) make them highly sensitive to transport cost changes.
- Freight operators, though managing larger turnovers, face fluctuating fuel costs and operational expenses.
- Both groups are financially impacted by seasonal cost volatility in vehicle rentals.

5.8 Policy and Infrastructure Recommendations

1. **Integrated Road Development** — Upgrade feeder roads to handle both farm and freight traffic.
2. **Market Access Expansion** — Facilitate farmer access to regional freight networks through cooperatives.
3. **Rental Price Stabilization** — Promote shared vehicle ownership or contract arrangements.
4. **Peak Traffic Management** — Use scheduling to spread out market arrivals and departures.
5. **Hub Modernization** — Improve facilities at aggregation points for efficiency and quality control.

The FCS and STS, when read together, present a complete picture of Meherpur's agricultural supply chain — from the farm gate to national markets. While they focus on different stages, their findings converge on key structural issues: **infrastructure gaps, inadequate storage, rental dependency, and seasonal operational stress**. Coordinated interventions that address both the micro-level (smallholder transport) and macro-level (seasonal freight) challenges will have the greatest impact on agricultural efficiency and farmer livelihoods in the district.



Chapter 6
Conclusion

Chapter 6: Conclusion

The Farming Condition Survey in Meherpur District offers an in-depth view of the district's agricultural landscape, revealing both its strengths and persistent challenges. The findings clearly demonstrate that agriculture remains the backbone of the local economy, with 69% of respondents engaged primarily in farming and an additional 24% working as day laborers, often linked to agricultural activities.

The survey underscores the dominance of smallholder and marginal farmers, with the majority cultivating less than 2.5 acres of land. Groundwater-based irrigation, particularly through shallow tube wells, is the primary enabler of high cropping intensity, yet it also poses sustainability concerns in line with national warnings about aquifer depletion. Mechanization is widespread for land preparation, but adoption remains low for harvesting and post-harvest stages, leading to inefficiencies and losses.

Market access remains heavily dependent on local haats, with most farmers selling through intermediaries due to time, resource, and transport constraints. Poor rural road conditions, high transport costs, and lack of cold storage facilities significantly reduce profitability and limit farmers' ability to access larger, more lucrative markets. The survey also highlights financial vulnerability, with NGOs being the main source of agricultural credit, particularly for marginal farmers, but limited access to formal banking services.

The data aligns closely with the objectives and priorities outlined in key national strategies such as the **National Agriculture Policy (2018)**, **National Agricultural Mechanization Policy (2020)**, **National Water Policy (1999)**, **Bangladesh Delta Plan 2100**, and the **8th Five Year Plan (2020–2025)**. These frameworks emphasize water-use efficiency, mechanization, market infrastructure, and climate resilience — all areas directly relevant to Meherpur's needs.

To move forward, integrated interventions are essential. These should include:

- **Sustainable water management** through diversified irrigation sources and efficiency-enhancing technologies.
- **Mechanization hubs and custom hiring services** to improve harvesting and reduce post-harvest losses.
- **Upgrading rural feeder roads and transport networks** to link farmers more effectively with regional markets.
- **Establishing cold storage and aggregation centers** to reduce distress sales and improve price stability.
- **Expanding digital and financial inclusion** to support extension services, price transparency, and access to affordable credit.

The Farming Condition Survey (FCS) and Seasonal Transport Load–Unload Survey (STS) provide a complete picture of Meherpur's agricultural supply chain — from farm gate to national markets. Despite focusing on different stages, both reveal shared constraints, including poor feeder roads, limited storage, high reliance on rented vehicles, and seasonal congestion. Addressing these issues through integrated infrastructure upgrades, cold chain development, and coordinated market access will strengthen both smallholder farming and seasonal freight, improving efficiency and resilience across the supply chain.

By addressing these interconnected challenges, Meherpur can transition towards a **resilient, market-oriented agricultural system** that enhances farmer incomes, improves food security, and supports sustainable rural development. The survey's findings provide a solid evidence base for both immediate local interventions and alignment with national policy goals.

Annexure

Questionnaire

URBAN DEVELOPMENT DIRECTORATE (UDD)
Preparation of Development Plan for Meherpur Zilla Project (Package-04)
Socio-Economic and Other Related Surveys
Farming Condition Survey

Section A: Survey Information

1. Surveyor Name:
2. Date of Survey:
3. Location (Coordinate):
4. Time:

Section B: Respondent Information

5. Respondent: ☐ Land Owner ☐ Farmer ☐ Tenant Farmer ☐ Marginal Farmer ☐ Sharecropper (Bargadar) ☐ Commercial Farmer ☐ Daily Wage Worker ☐ Contract Farmer ☐ Other (Specify): _____
6. Share percentage if Sharecropper (Bargadar) : _____.
7. Gender: ☐ Male ☐ Female ☐ Other
8. Age Group: ☐ Under 18 ☐ 18-25 ☐ 26-35 ☐ 36-45 ☐ 46-60 ☐ Above 60
9. Educational Qualification:
   ☐ No Formal Education ☐ Primary ☐ Secondary ☐ Higher Secondary ☐ Graduate and above
10. Family Type: ☐ Single ☐ Joint
11. Location of Residence? Ward/Para: _____, Village: _____, Union: _____.
12. Type of farming practiced:
    ☐ Crop ☐ Livestock ☐ Fisheries ☐ Mixed
13. Primary Occupation:
    ☐ Farming ☐ Day Labor ☐ Business ☐ Service ☐ Other: _____
14. Yearly Income: _____

Section C: Land Usage

15. Cultivable land: _____ acres
16. Leased-in land: _____ acres
17. Leased-out land: _____ acres
18. Irrigation source used:
    ☐ Deep Tube Well (DTW)
    ☐ Shallow Tube Well (STW)
    ☐ Canal / Surface water
    ☐ Rainfed only
    ☐ Others (Specify): _____
19. How many crops are there per year? _____.
20. Crops (e.g.: Paddy, Wheat, Jute, Vegetables, Maize, Fruits, Tobacco etc.) grown in the last year? (Write Season wise)
    ☐ _____
    ☐ _____
    ☐ _____

Section D: Input Use and Accessibility

21. Main sources of seeds:
    ☐ Government ☐ Private ☐ Saved from previous harvest ☐ Local market
22. Access to govt. organization or agricultural extension service:
    ☐ Yes ☐ No
23. If yes, from whom?
    ☐ DAE ☐ BADC ☐ NGO ☐ Input Company ☐ Others: _____

24. Fertilizers used:
☐ Urea ☐ TSP ☐ DAP ☐ MOP ☐ Organic (cow dung, compost)
25. Do you work as a fertilizer dealer?
☐ Yes ☐ No
26. If yes, from whom? _____
27. Use of modern machinery:
☐ Tractor ☐ Power tiller ☐ Harvester ☐ Irrigation pump ☐ Not used
28. Access to credit/loan for farming:
☐ Yes ☐ No
29. If yes, from:
☐ Bank ☐ NGO ☐ Local lender ☐ Others: _____

Section E: Production and Marketing

30. Do you face problems in selling crops?
☐ Yes ☐ No
31. If yes, what are the main problems?
☐ Low price ☐ Lack of buyers ☐ Middlemen exploitation ☐ Transportation ☐ Others: _____
32. Where do you usually sell your crops?
☐ Village market ☐ Local haat ☐ Wholesale market ☐ Sell from home ☐ Sell from field
33. Why aren't you selling directly to consumers? _____
34. Is there a link with the chain shop of Dhaka for direct sales? _____

Section F: Goods Transportation System/Type

35. Mode(s) of Transportation Used for Moving Agricultural Goods:
☐ Headload / Manual Carrying ☐ Bicycle / Rickshaw ☐ Van / Pushcart
☐ Motorcycle ☐ Pickup / Small Truck ☐ Large Truck / Tractor
☐ Others (Specify): _____
36. Is there a link with the chain shop of Dhaka for direct sales? _____
37. Ownership of Transport:
☐ Own ☐ Hired ☐ Cooperative/Shared ☐ Other (Specify): _____
38. Average Distance to Main Selling Point (Market): _____ km
39. Do You Face Any Transportation-Related Problems? ☐ Yes ☐ No
40. If Yes, What Are the Main Problems?
☐ Poor Road Conditions ☐ High Transport Cost
☐ Lack of Available Vehicles ☐ Seasonal Accessibility Issues (e.g., during monsoon)
☐ Others (Specify): _____

Section G: Storage Facility Usage

41. Do you use any storage or cold storage facilities for your crops?
☐ Yes ☐ No
42. If yes, specify the type:
☐ Personal Storage ☐ Community Warehouse ☐ Cold Storage ☐ Rented Facility
☐ Others: _____
43. Do you store or reuse agricultural residuals (e.g., straw, husk, stalks)?
☐ Yes ☐ No
44. If yes, how do you use/store them?
☐ Animal Feed ☐ Organic Fertilizer ☐ Fuel ☐ Sell in Market
☐ Other: _____