Study No-195

Decentralized Procurement Scheme for Procurement of Paddy under Minimum Support Price (MSP) in West Bengal

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(For the States West Bengal, Sikkim and Andaman & Nicobar Islands)
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Preface

The present study, entitled "Decentralized Procurement Scheme for Procurement of Paddy under Minimum Support Price (MSP) in West Bengal," is part of an All India Coordinated Study undertaken at the instance of the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India. The study was coordinated by the Agricultural Economics Research Unit at the Institute of Economic Growth, University of Delhi, New Delhi. The present report pertains to the state of West Bengal, which occupies a significant position in India's rice economy.

West Bengal is one of the leading rice-producing states in the country, followed by Uttar Pradesh, Punjab, and Odisha. Paddy is the principal crop in the state and is cultivated across three major agricultural seasons—Aman, Aus, and Boro—often enabling farmers to harvest up to three paddy crops in a year under favourable agro-climatic conditions. Paddy cultivation dominates the agricultural landscape of the state, accounting for nearly three-fourths of the gross cropped area and about 70 per cent of the total area under food grains. In recent years, West Bengal has continued to remain a major contributor to national rice production. For instance, the state produced around 15–16 million tonnes of rice annually, contributing roughly 10–12 per cent of India's total rice output, which exceeded 135 million tonnes in 2023–24. Agriculture remains the primary source of livelihood for a large share of the rural population in the state, with a substantial proportion of farmers depending on paddy cultivation for their income and subsistence.

Against this backdrop, the Minimum Support Price (MSP) policy and the Decentralized Procurement Scheme (DCP) assume critical importance in ensuring remunerative prices to farmers while simultaneously strengthening the public distribution system and national food security. The basic purpose of this study is to examine whether paddy procurement in the state effectively serves its intended objectives, namely: (i) providing remunerative prices to cultivators; (ii) supplying food grains at subsidized prices to nutritionally vulnerable populations; (iii) helping control inflationary pressures in food markets; (iv) stabilizing prices for both producers and consumers; (v) reducing fluctuations in food availability; and (vi) contributing to self-sufficiency in food-grain production.

The study reveals that Aman paddy is the principal crop targeted under the procurement system in West Bengal. For the purpose of the study, two districts—Purba Bardhaman and Coochbehar—were selected, each accounting for more than five per cent of the state's procurement share. The analysis shows that both the gross cropped area and the net cropped area under Aman paddy are higher in Purba Bardhaman compared to Coochbehar. Similarly, the land distribution under the targeted procurement crop, Aman paddy, is relatively greater in Purba Bardhaman. The study also observes that the average selling price of paddy in the local market is often lower than the price offered at the government procurement centres (CPCs). To encourage farmers to sell their produce through procurement channels, the Government of West Bengal provides an additional incentive of ₹20 per quintal (Utsaha Bhata) over and above the MSP (which stood at ₹1,888 per quintal during the reference period). At the procurement centres, no deductions are made for moisture-related weight loss; however, farmers incur certain transaction costs, such as transportation expenses and quality-related deductions associated with grain standards.

The study further identifies several constraints affecting the effective functioning of the DCP scheme under MSP. A major concern is the limited awareness among farmers regarding MSP operations and

procurement procedures. Farmers also face difficulties such as higher deductions related to grain quality (locally referred to as *'Khad'*), long waiting periods for obtaining serial numbers at procurement centres, interference by intermediaries and local political actors, delays in the procurement process, challenges associated with procurement card renewal, and variations in productivity across different farm sizes.

The findings suggest that most of the recommendations revolve around improving the timeliness and efficiency of procurement operations so that a larger number of farmers can benefit from the scheme. Measures such as ensuring prompt payment to farmers, strengthening farmer-producer organizations, integrating digital technologies and software systems into procurement operations, enhancing transparency to make the system more leak-proof, and improving farmers' access to market and price information can significantly improve the effectiveness of the procurement system.

The study conducted by the research team led by Mr. Mehedi Hasan deserves appreciation. The contributions of former Directors, Prof. Bidhan Chandra Roy (2018-2022) and Prof. Debasis Bhattacharya (2022-25), are gratefully acknowledged. The efficient assistance and services provided by our centre's administrative and support staff have aided in the conduct of this research. The efforts of Dr. Achiransu Acharyya, Deputy Director, for reviewing this research report merits all recognition.

On behalf of the centre, the undersigned would like to express sincere thanks and gratitude to Prof. Brajesh Jha and Mr. Deepak Kumar, Agriculture Economics Research Unit, Institute of Economic Growth, University of Delhi, New Delhi, for their coordination and suggestions at various stages of the study. Special thanks are also due to the Director of Agriculture, Deputy Director of Agriculture, and Assistant Director of Agriculture at the Block, District, and State levels, under the Ministry of Agriculture, Govt. of West Bengal, for their kind cooperation during secondary data collection and survey.

Our gratitude to Dr. Probir Kumar Ghosh, Hon'ble Vice Chancellor, Visva-Bharati for his keen interest and insightful advice. We acknowledge the support and valuable guidance of the Adviser (AER Division), Ministry of Agriculture & Farmers Welfare, Government of India, New Delhi in completion of the study. The support of other officials in the Ministry is also invaluable to us to undertake this research.

Most importantly, we sincerely thank all the farmers who responded during the survey and spared their valuable time. We thank one and all who directly and indirectly supported this research.

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List of Abbreviations

ADA	Assistant Director of Agriculture
AERC	Agro-Economic Research Centre
APC	Agricultural Price Commission
APMC	Agriculture Produce Market Committee
ATM	Assistant Technology Manager
BTM	Block Technology Manager
CACP	Commission for Agricultural Costs and Prices
CoP	Cost of Production
CPCs	Centralised Procurement Centres
DBT	Direct Benefit Transfer
DCP	Decentralized Procurement System
DDP&S	Directorate of District Distribution, Procurement and Supply
DLMC	District Level Monitoring Committee
D.O	Disbursement Officers
FAQ	Fair Average Quality
FCI	Food Corporation of India
FL	Family Labour
FPC	Farmer-Producer Company
FPO	Farmer-Producer Organization
F&S	Food and Supplies Department
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product.
GOI	Government of India
GSDP	Gross State Domestic Product
HHs	Households
HYV	High-Yielding Varieties

I-O Ratio	Input-Output ratio
KCC	Kisan Call Centre
KGK	Krishi Gyan Kendra
KPS	Krishi Prayukti Sahayak
KVK	Krishi Vigyan Kendra
MoA&FW	Ministry of Agriculture and Farmers Welfare
MoS&PI	Ministry of Statistics and Programme Implementation
MSP	Minimum Support Price
NFSA	National Food Security Act
NGO	Non-governmental organization
OBC	Other Backward Class
OWS	Other Welfare Scheme
PACS	Primary Agricultural Credit Societies
PCI	Per Capita Income
PDS	Public Distribution System
P. O	Purchase Officers
PSS	Price Support Scheme
RMC	Regulated Market Centre
SHGs	Self-Help Groups
TPDS	Targeted Public Distribution System
UT	Union Territories
WTO	World Trade Organization

EXECUTIVE SUMMARY

1. Introduction

The government of India implemented a decentralized procurement scheme for foodgrains in 1997-98. This had a significant benefit by improving procurement and Public Distribution System (PDS) activities, fully encouraging local procurement, and extending the benefits of MSP to local farmers, thereby saving on transit costs. This also enabled the procurement of food grains better suited to local tastes. Under this scheme, the State Government currently purchases paddy/rice and wheat directly on behalf of the Government of India. Purchase centres are opened by the State Government and its agencies (PACS, NGOs, FPC/FPOs) as required. It also stores and distributes these foodgrains through the National Food Security Act (NFSA) and other welfare schemes. The surplus foodgrains procured by DCP states in excess of their requirements are sent to the FCI for central pool stocks, and any deficiency of foodgrains by other states is met with these excess grains by the FCI. The central government agrees to cover the total cost of procurement activities incurred by state governments, as per the approved costing. The Central Government also examines the quality of foodgrains purchased through the scheme and reviews the mechanisms established to ensure that the procurement operations run smoothly.

The present study tries to assess the benefits of decentralized procurement to farmers and society at large. It attempts to identify constraints (region-wise), Purba Bardhaman and Coochbehar districts, with the following specific objectives:

i. To ascertain the procurement of cereals in previous years.
ii. To study item-wise costs of procurement, handling, storage, and disposal in the selected states (5-6) and regions for the last three years.
iii. To study the impact of procurement on the local economy in terms of agricultural production, productivity, employment, and prices of cereals and food grains of the commodity.
iv. To ascertain the impact of decentralized procurement on procurement-related infrastructure.
v. To study region-wise constraints in decentralized procurement of cereals.

2. Main Findings

i. West Bengal, a central rice-producing state, occupies the prime position by contributing about 14 percent of all India's production and procurement share at about 3 percent of the total paddy procurement of our country.

ii. The procurement of rice across the state was analyzed, and it was found that state agencies were involved in procuring rice across the state at varying levels. But in West Bengal, only the State Government (wb.food.gov.in) is responsible for the entire paddy procurement process.

iii. The amount of paddy procured in West Bengal in 2021–2022 (35.31 lakh metric tonnes) was more than three times what it was in 2013–14 (10.62 lakh metric tonnes). The state government purchased 94% to 97% of the total paddy, and FCI procured the rest. Following the introduction of the DCP scheme, paddy procurement has increased year after year. (Table 2.2).

iv. In accordance with the explanation above, West Bengal's procurement contribution was approximately 6.91% in 2013-14, which increased to 17% in 2020–21. West Bengal is one of the states where the lowest proportion of production is procured.

v. Most of the farmers are small by their land holding, followed by marginal, indicating a lesser holding of agricultural land in our sample. Marginal farmers are higher in Coochbehar than in Purba Bardhaman, and the percentage of small farmers is higher in Purba Bardhaman.

vi. The maximum sample households of our study are small and marginal, indicating that farmers can sell their total produce at MSP and do not have to depend more on local markets. It is essential to note that medium and large farmers are the most severely affected by the sale of their paddy at the MSP, as their substantial production is not procured under the quota system in our sample area.

vii. It is seen that most of the borrowing is done under the facility of the Kisan Credit Card, followed by loans borrowed by commercial or cooperative banks. Kisan Credit card loans are more than twice as high in Coochbehar as in Purba Bardhaman. The loan amount is increasing across landholding classes in both districts.

viii. It is seen that in Coochbehar, marginal farmers are the most leased-in cultivators by number, whereas this story is true for small holders in Purba Bardhaman. It reveals that marginal and smallholders are operating with more leased-in lands, for which their cropping intensity is higher than that of other landholding classes in both districts. It is interesting to note in Table 3.11 that in Purba Bardhaman, most of the leased-out land came from marginal holders, with a higher average than that of smallholders. No semi-medium and medium holders leased out their land in Purba Bardhaman. In Coochbehar, most smallholders have leased out their land, with an average of 0.79 hectares per

holding, but this average is increasing across all landholding classes, which is a notable trend.

ix. This study found that only Aman Paddy is the leading targeted crop for procurement in West Bengal. Overall, the total gross cropped area and the total net cropped area are higher in Purba Bardhaman than in Coochbehar for Aman Paddy. Thus, it is found that the land distribution for targeted crops, such as Aman Paddy, in the district of Purba Bardhaman is more than in the district of Coochbehar.

x. Across the two sample districts, it is found that the overall cost per quintal of paddy is higher in the district of Coochbehar than in Purba Bardhaman. It is also found that the average yield per hectare is much higher in Purba Bardhaman than in Coochbehar across all land sizes for all farmer classes.

xi. The study cannot draw any inferences about the fundamental debate between land size and productivity. It is found that productivity is higher among medium farmers in the district of Coochbehar, but in the district of Purba Bardhaman, it is highest among marginal farmers.

xii. The most concerning aspect is that, as the size of land holdings increases, the sale quantity in CPC decreases drastically in both districts of Coochbehar and Purba Bardhaman. Among the two districts, the situation is more pathetic in Coochbehar. The main reason for this is the system of rationing the sellable quantity among farmers, regardless of the size of the farming class. The CPC has established a quantity limit (Quota) for all farming classes to sell within the CPC. Hence, in the present CPC procurement system, a marginal farmer with low production can sell almost the same quantity of output as a medium or large farmer. In these circumstances, large farmers with high production values are unable to sell their entire output in CPC.

xiii. The average selling price per quintal of Aman Paddy was found at Rs. 1888 /- in CPC in both districts. Here, the study found that the central procurement price is set nationally at Rs. 1868 per quintal, and the West Bengal state government provides an additional Rs. 20 per quintal as an incentive (called “Utsaha Bhata” in Bengali) to promote farmers' sales to CPC. The price is unique in all CPC operations in the state.

xiv. The average price margin per quintal is higher for per quintal of Aman Paddy in the district of Coochbehar than in Purba Bardhaman, which indicates the price benefits to the farmers from selling in CPC than in the Local Markets, and which is in favour of Purba Bardhaman in terms of price margin.

xv. The study also found that the overall local market price of Aman Paddy per quintal is lower in the Coochbehar district than in Purba Burdhaman. Across the size of farming classes, it is observed that the local market price for medium farmers is highest in both districts; hence, the price margin is lowest for these farmers.

xvi. In the CPC, the study found no market tax/levy or cost for weight but found some other type of costs, cost of bags (the farmers have to sell along with their bag; hence, farmers need to buy the bag for selling their crop in CPC) and cost of percentage loss per quintal in terms of quality of paddy, i.e., cost of weight loss for moisture and quality of paddy.

xvii. The study found that the overall selling cost of Aman Paddy in CPC is higher in Coochbehar than in Purba Bardhaman. Among the total selling costs, the cost of weight loss is the highest in both districts. It is also found that farmers in the Coochbehar district have to bear the cost of bags for carrying their output, whereas in Purba Bardhaman, such costs are not observed. Among the farmer sizes, the study found that selling costs were relatively lower for Medium-Class farmers in both districts, and highest for Semi-Medium farmers in the district of Coochbehar. In contrast, marginal farmers in Purba Bardhaman district face the highest cost of selling their crops at the CPC.

xviii. From the study, it is evident that the average selling cost per quintal in the Local Market is much lower than the CPC. Comparing the two districts, the average selling cost in the Local Market of Coochbehar district is higher than that in Purba Bardhaman district. Among these costs, most are incurred for transportation, followed by taxes and market commissions in the Coochbehar district. It was observed that the commission or tax rates in the market are highest for marginal farmers and decrease as landholding size increases. The cost is observed to be zero for the highest class of farmers, i.e., Semi-Medium, in the district of Coochbehar. On the other hand, in the district of Purba Bardhaman, no market taxes or commissions are observed in the study area, and all marketing costs in the local market are incurred for transportation to the market.

xix. It is found that the overall average selling cost per quintal of Aman Paddy in CPC is almost four times higher than the Local Market in the sample districts of the state of West Bengal. The costs, such as bag costs and quality-related weight loss due to moisture, are found only in CPC, whereas taxes or commissions in the market are found only in the Local Market. The cost of moisture-induced weight loss and the quality of paddy, as well as the cost of bags in the Coochbehar district, are the primary contributors to the increased marketing cost in the CPC compared to the Local Market.

This cost reduces the realization of the price benefit from the CPC for farmers and is the main obstacle to getting the optimum benefit from the CPC.

xx. Comparing the two districts, CPC's operations are more efficient in Purba Bardhaman than in Coochbehar in West Bengal. The study also found that the profitability from Aman Paddy is higher in Purba Bardhaman than in Coochbehar. With these findings, the study concludes that CPC efficiency can enhance the benefits of cultivation and play a significant role in the economic development of the rural agrarian sector.

3. Constraints

Various suggestions provided by farmers to address the problems they face are listed in this section. Details of the category-wise issues of the farmers in marketing their produce and the recommendations to address these problems are presented below:

i. The medium farmers are more aware of the MSP, followed by semi-medium, medium and small, respectively.

ii. About 34 percent (within a weak margin) of the semi-medium farmers faced the problem of delayed payment and exploitation by market intermediaries, and about 94 percent of them faced the problem of delayed procurement of paddy.

iii. About 87 percent and 85 percent of the small and marginal farmers, respectively, faced the problem of delayed procurement while marketing paddy in the markets of West Bengal.

iv. Many of the marginal farmers, about 83.58 percent were not aware of the MSP, and only 31.34 percent of marginal farmers were aware of the quality parameters prescribed for the procurement of paddy.

v. About 83.89 percent of farmers are hopeful that they will give paddy to centralised procurement centres (CPCs) in the upcoming years.

vi. It was observed that 51.11 percent of farmers believe that the procurement of paddy affects the cropping pattern in the local region.

vii. Farmers face different types of problems when selling their paddy to CPC. These include:

a. The deduction percentage of paddy is more with respect to quality, which is called 'Khad' in the local Bengali language
b. The serial number is not given at the procurement centre due to a long waiting list
c. interference of middlemen and local political leaders
d. delay in the procurement process
e. facing different problems during card renewal
f. the government takes less quantity of paddy according to field size, etc.

viii. The need for provisioning assistance of good-quality seedlings in sufficient quantity (77.78%) is the first and foremost major requirement for most of the paddy producers, irrespective of the size of their land holdings in the study area.

ix. Existence of intermediaries' problems (68.89%) and not getting remunerative price for produce in the local market (74.44%) were the problems accounted for by marginal and small, semi-medium, and medium farmers.

x. Most marginal (76.12%) and small farmers (80.56%) have trouble with not getting good quality seedlings in sufficient quantity.

xi. Small farmers are having issues with securing a fair price for their goods in the local market (76.39%), and intermediaries and middlemen (68.06%) take advantage of the situation.

xii. The Krishi Vigyan Kendra (KVK) and Kisan Call Centre have little effect on the dissemination of farming-related information, advice and new farming techniques. About 25.56 percent of marginal farmers and 25 percent of small farmers are gaining awareness and knowledge, and different kinds of help from Krishi Prayukti Sahayak (KPS) or Assistant Director of Agriculture (ADA).

4. Policy Recommendations

Based on the findings of this study and concluding observations, the following recommendations and policy suggestions are proposed:

i. **Improving irrigation facilities:** As mentioned earlier, the Purba Bardhaman district has better irrigation facilities, resulting in higher yields and a higher percentage of land under Boro paddy compared to the Coochbehar district. The government can invest in improving irrigation facilities in areas with lower cropping intensity to boost yields and productivity.

ii. **Addressing issues faced by small and marginal farmers:** Small and marginal farmers face several challenges, including delayed payments, delayed procurement, unfair prices for their

produce in the local market, and exploitation by intermediaries. The government can address these issues by ensuring timely payments and procurement, promoting farmer-producer organizations, and providing farmers with access to better markets and pricing information.

iii. **Awareness about MSP:** Understanding of MSP is higher among medium farmers than among small and marginal farmers. The government can take steps to increase awareness about MSP among the farmers by requesting the farmers to frequently visit the Krishi Vigyan Kendra (KVK), the Assistant Director of Agriculture (ADA) office and meeting with the Krishi Prayukti Sahayak (KPS), the Assistant Technology Manager (ATM) and the Block Technology Manager (BTM). The government should also organize awareness campaigns and training programs to promote awareness and education.

iv. **Improving the dissemination of farming-related information:** The Krishi Vigyan Kendra (KVK) and Kisan Call Centre have limited impact in disseminating farming information and new farming techniques. The government can invest in improving the effectiveness of these institutions or exploring alternative means of disseminating farming-related information, such as through mobile applications and social media. All these also help reduce production costs by incorporating advanced farming techniques and technologies while increasing production, productivity, and net farm income on a sustained basis.

v. **Addressing a transparent system:** The government aims to achieve significant milestones in reforming the DCP system by incorporating advanced technology and software**,** making it more transparent and leak-proof. Through efficient data mining and the confluence of technologies and software, it is possible to make a people-centric, engaging, and responsive administration. Whatever the policy, the government must build consensus and lay the groundwork for its successful implementation.

vi. **Encouraging crop diversification:** The study finds that cash crops, such as tobacco, are included in Coochbehar cropping patterns, which contribute to higher cropping intensity. The government can encourage crop diversification by promoting other cash crops suitable to the region and by providing farmers with access to markets and pricing information.

vii. **Addressing weight loss costs:** The study finds that the cost of weight loss is the highest in the selling cost of Aman Paddy in CPC. The government can address this issue by investing in improved storage and transportation facilities, reducing the cost of weight loss, and ensuring that farmers receive fair prices for their produce.

viii. **Addressing every farmer to sell their paddy to the procurement centre:** Every farmer will get a chance to sell their paddy to the procurement centre by increasing the quantity of paddy procured by the government. Usually, not every farmer in the village has the chance to sell paddy to the procurement centre because the rice mill procures only a limited amount, as per government order. Therefore, there is a need to modify

government orders and increase procurement capacity at both the procurement centre and the rice mill.

ix. **Increasing price gap:** The price gap between the local price and the support price of paddy has increased. Every year, the support price increases by approximately 5% with respect to the cost of cultivation, as determined by the Commission for Agricultural Costs and Prices (CACP), a government agency in India, while local prices have remained relatively constant over the past two to three years. Farmers will benefit and earn more money by selling their paddy to the procurement centre at the support price.

x. **Opening temporary procurement centres:** The government agencies should establish temporary procurement centres in rural areas, enabling farmers to sell their paddy directly in their villages. Typically, each block has a centralised procurement centre, which means that many farmers are unable to sell their paddy at a remunerative price. As a result, many farmers were unable to take advantage of the decentralized procurement scheme. Several temporary procurement centres will be required in each block.

xi. **Improving Storage facilities:** Storage facilities are required to increase procurement quantities. It is worth noting that the procurement quantity of paddy was 10.62 lakh metric tonnes in the 2013-14 fiscal year. At present (2021-22), it has increased to around 35.31 lakh metric tonnes, with several steps taken by the state government over the past six years that will further increase the number of storehouses. The West Bengal State Warehousing Corporation creates storage capacities. Therefore, if storage capacities continue to grow, farmers will be able to sell their entire paddy production in bulk quantities, as well as procure paddy from farmers immediately after harvest through the Centralized Procurement Centre.

CHAPTER I

1.1 Background

Agriculture has long been India's primary economic activity, as evidenced by archaeological, literary, and mythological records. The Indo-Aryans made numerous references to various aspects of their agricultural activities in their scriptures, epics, edicts, and inscriptions, from the early Vedic period (4000–2500 B.C.) to the end of the Puranic age. (Maheshwari & Tandon, 1959). Agriculture is the foundation of India's civilization, culture, and heritage. It constitutes the primary source of livelihood for about 54.6% of India's population (2010-11) (*Socio-Economic Statistics India*, 2022). The country's population has increased 3.35 times since Independence. India accounts for only 2.4% of the global land area but supports nearly 17.7% of the world's population. (*Socio-Economic Statistics India*, 2022).

Moreover, the net sown area remained stagnant within the range of 140-142 m. Ha for the last 3-4 decades (Agricultural Statistics at a Glance, 2022). Despite this, the country emerged as the second-largest producer of agricultural products and the ninth-largest exporter of farm products in 2019, according to the WTO annual report 2021, due to a well-planned, concerted effort by farmers, scientists, extension personnel, and policy planners (WTO annual report 2021). Nevertheless, many Indian farmers face numerous production-related challenges, including limited access to quality inputs, inadequate credit availability, storage, transportation, and market accessibility. Most of these farmers are marginal and small, with an average landholding of 0.74 hectares per farmer in India. (NAFIS 2021-22). According to the 2015-16 agricultural census, 86% of landholdings in India are small and marginal. The government introduced the Decentralized Procurement (DCP) Scheme to support fair prices for farmers, and to encourage resource sustainability towards a socially desirable cropping pattern.

The Decentralized Procurement (DCP) Scheme is a crucial component of India's agricultural price policy. Through the Public Distribution System (PDS), it aims to ensure support prices for farmers and affordable prices for consumers (Singh & Bhogal, 2021). Before the Green Revolution, price support systems were intended as institutional tools to encourage farmers to adopt new technologies (Deshpande, 2008b; Government of India, 2005). Following the Jha Committee's recommendations, the Agriculture Price Commission was established in 1965 to propose support prices for crops, taking into account production costs (Kadasiddappa et al., 2013).

During the Green Revolution (1967-68 to 1977-78), the Government of India provided price incentives through a support price, which helped increase India's food production. The primary objectives of MSP are to procure food grains from surplus food-producing states for distribution through the PDS and to maintain a buffer stock, thereby bridging the demand-supply imbalance (Chand, 2008a; Jha et al., 2007). Following the Green Revolution, India's agricultural sector underwent a significant transformation; however, the country's agrarian price policy has largely remained unchanged (Government of India, 2005). Although there is a food surplus in many states, including Haryana,

Punjab, and Andhra Pradesh, procurement has primarily been restricted to these areas (Government of India, 2005). MSP is viewed as a safety net that ensures price stability for farmers, enabling them to make informed long-term investment decisions.

The agricultural price policy needs to be reviewed because the demand-supply situation has changed drastically over the past several decades. This study examines the awareness of farmers' knowledge of MSP across various crops, utilizing the MSP support system, with the hypothesis that knowledge is barely the minimum required for policy interventions to have any impact. We also investigate why farmers do not take the opportunity to sell their goods to procurement agencies. The study also examines the potential link between farmers' decisions on crop specialization and diversification and their knowledge of MSP.

1.2 Procurement policy

State Government agencies and the Food Corporation of India (FCI) procured paddy and wheat within the allotted time frame, meeting the prescribed Fair Average Quality (FAQ) specifications under the Minimum Support Price (MSP) for the Central Pool. Before purchasing paddy and wheat, the Government of India, in consultation with state Governments and the Food Corporation of India, finalizes the estimates for paddy and wheat procurement based on estimated production, marketable surplus, and agricultural crop patterns. Furthermore, the various coarse-grain varieties are purchased by the State Government in cooperation with FCI. The state government may employ this coarse-grained approach to distribute resources under the National Food Security Act (NFSA) and other welfare programs.

1.2.1 Centralized Procurement System

According to the centralized procurement system, either the Food Corporation of India (FCI) or the State Government directly procures cereals from the selected region and hands over the stocks to FCI for storage. GOI distributes foodgrains in the same state or moves surplus stocks to other states across the country for the distribution system (PDS), which is also criticized as it incurs huge transportation costs and causes wastage of procured commodities. This arrangement finally increases government expenditure in maintaining the public distribution system (PDS) in the country.

1.2.2 Decentralized Procurement System (DCP)

In response to these issues, the government implemented a decentralized procurement scheme for food grains in 1997-98. This has a significant benefit by enhancing procurement and Public Distribution System (PDS) activities, fully encouraging local procurement, and extending the benefits of MSP to local farmers, thereby saving on transit costs. This also enables the procurement of food grains better

suited to local tastes. Under this scheme, the State Government directly purchases paddy and wheat on behalf of the Government of India. The State Government and its agencies (PACS, NGOs, FPC/FPOs) have opened purchase centres as per their requirements. It also stores and distributes these foodgrains through the National Food Security Act (NFSA) and other welfare schemes. Surplus foodgrains procured by DCP states that exceed their requirements are sent to FCI for central pool stocks, and any deficiency in foodgrains by other states is met with these excess grains. The central government agrees to cover the total cost of procurement activities incurred by state governments, as per the approved costing. The Central Government also examines the quality of foodgrains purchased through the scheme and reviews the mechanisms established to ensure that the procurement operations run smoothly.

Foodgrains at subsidised prices are allocated to States/Union Territories by the Government of India and released to States through the Food Corporation of India (FCI) under the Targeted Public Distribution System (TPDS), the National Food Security Act (NFSA), and Other Welfare Schemes (OWS).

The State Government does not get the food subsidy for the foodgrains. The food subsidies were sourced from the FCI and paid directly to the FCI rather than to the State Government. However, in those States where DCP is adopted, the food subsidies are directly released to the State Government for the quantity of food grain. These types of food subsidies are directly transferred to beneficiaries' bank accounts through the Direct Benefit Transfer (DBT) Scheme. However, the government employs various strategies to prevent foodgrain leakages and diversion. However, its implementation is still ongoing and depends on how prepared States and Union Territories are to digitize and de-duplicate their beneficiary databases, which are seeded with bank account numbers. It is also undertaken in response to a specific request from the State Government or Union Territory in question.

The Central Government introduced the Decentralized Procurement Scheme for States. It is aimed to

i. Reducing transaction costs and thereby increasing procurement and public distribution efficiency
ii. reducing the outlay on account of food subsidy,
iii. Encourage as many local purchases as possible, thereby extending the benefits of MSP to local farmers.
iv. Expanding the procurement volumes at the lowest possible transaction costs.

The State Government has announced additional incentives in addition to the MSP. It was noted that over the past few years, some State Governments had been buying more foodgrains than needed for the target population and had also been giving bonuses above and beyond the MSP. It disrupted market activity, excluding private buyers, and the government assumed full responsibility for the market. This has resulted in over procurement in these States.

To address this issue, the Central Government has decided that the DCP surplus States have an extent of foodgrain requirement for TPDS/other welfare schemes and will provide acquisition and distribution subsidies in accordance with those States' needs. Any excess quantity purchased in the State over this amount will be the responsibility of the State Government, which will also shoulder the associated costs.

In non-DCP States, the State Government is concerned that if a State declares subsidies over and above MSP, the FCI will not be responsible for MSP operations in that State. State agencies will have to mobilize resources and take care of the entire MSP operations in the State, as well as arrange the purchase of foodgrains storage. Regarding these States, FCI, in consultation with the Department, determines how much stock of Paddy or Wheat should purchase from the relevant States in a particular season and will confine its Central Pool procurement to that extent, leaving the remaining surplus stocks for the State Government to dispose of at its own risk and expenditure.

1.2.3 Role of DCP

The broad objective of the DCP scheme in India has been to make food available to the people at reasonable prices. Specific goals include providing remunerative prices to cultivators, supplying food at subsidized prices to the undernourished, controlling inflationary pressures, stabilizing prices for consumers and producers, reducing fluctuations in food availability, and achieving self-sufficiency in food grain production.

On behalf of the Central Government, the Food Corporation of India (FCI), along with State Governments and their agencies, procures a sizable quantity of the total grain harvested in a season. Since production is concentrated in a few Indian states, there is a significant regional mismatch between supply and demand for food grains, which is alleviated by grain transfers from surplus to deficit states. To facilitate farmers in bringing their produce to procuring agencies, purchase Centres (Mandies) are supposed to be opened in all corners of the country. However, procurement of wheat and paddy is usually limited to selected states. The FCI and Government Agencies purchase all grains offered at the minimum support price (MSP). The main areas for wheat procurement are the surplus states, such as Punjab, Haryana, Gujarat, and parts of Uttar Pradesh, for both crops, as well as Andhra Pradesh, West Bengal, and Odisha for paddy. The state-wise procurement is shown below with respect to target crops:

The table presents a list of Indian states and union territories along with the food grains procured from each. It shows that rice procurement is concentrated in states such as West Bengal, Orissa, Tamil Nadu, Andhra Pradesh, Telangana, and the Andaman & Nicobar Islands, while wheat procurement is dominant in Haryana, Madhya Pradesh, and Gujarat. Some states, including Uttar Pradesh, Punjab, Chhattisgarh, and Uttaranchal, contribute both rice and wheat. Overall, the table highlights regional specialization in grain production, with rice dominating in the east and south, wheat in the north and central regions, and dual procurement in agriculturally rich states like Punjab and Uttar Pradesh.

Table 1.1: State Governments undertaking a decentralized procurement scheme.

No	Name of the State	Procurement of items
1	West Bengal	Rice
2	Uttar Pradesh	Rice/Wheat
3	Punjab	Rice/Wheat
4	Haryana	Wheat
5	Madhya Pradesh	Wheat
6	Chhattisgarh	Rice/Wheat
7	Uttaranchal	Rice/Wheat
8	Andaman & Nicobar Islands	Rice
9	Orissa	Rice
10	Tamil Nadu	Rice
11	Gujarat	Wheat
12	Andhra Pradesh	Rice
13	Telangana	Rice

Source: fci.gov.in (Food Corporation of India)

The State government, through the Food and Supplies Department, will directly purchase paddy from farmers at the notified Centralised Procurement Centres (CPCs), which are operated directly under the administrative control of the Director, the Directorate of District Distribution, Procurement and Supply (DDP&S) of the Food and Supplies Department, through respective District Controllers. The Department and subsequent orders have notified 354 centres as Centralised Procurement Centres (CPCs) in 2019-20 (Department of Food and Supplies, GoWB). District Controllers, in consultation with the District Level Monitoring Committee (DLMC), may select additional locations within each block where intensive paddy cultivation is observed to set up additional CPCs. CPCs run throughout the procurement season except on Government holidays unless otherwise notified by the Food and Supplies Department in the interest of procurement. The Department has placed one Purchase Officer (P.O.) and one Disbursement Officer (D.O.) at each CPC, who will be responsible for carrying out procurement operations from farmer registration through to dispatch and receipt of the procured paddy at the Rice Mill. The Rice Mill shall maintain a stock of government paddy and rice and keep it updated daily.

1.3 Minimum Support Price: An Overview

1.3.1 Minimum Support Price and its Supply Response

During the Green Revolution in India, it was noted that to accelerate agricultural growth, farmers needed to be encouraged to adopt new and improved technology and to invest more in their farm enterprises. Obviously, it was challenging without ensuring reasonable prices for the farmers. The government established Jha committee to recommend a price policy for food grains for the 1964-65 fiscal year, and the committee advised the government on a long-term price policy (Sing, 2017). The committee's

recommendations led to the establishment of the Agricultural Price Commission (APC) in 1965, which was later renamed the Commission for Agricultural Costs and Prices (CACP) in March 1985. Concurrently, the development plan for the agriculture sector was also modified. Modifying the plan involved the application of modern inputs, including high-yielding varieties of seeds (HYV), chemical fertilizers, modern irrigation facilities, and mechanization of certain agricultural operations (Das et al., 2023). Therefore, the primary focus of the development was on identifying strategies to enhance land productivity using modern inputs and advanced production techniques in the country's most promising regions. This type of development encouraged farmers to invest more in their farm businesses, allowing them to move onto higher production possibility curves. Thus, the minimum support price was aimed to:

i. Ensure a remunerative and relatively stable price environment for the farmers by inducing them to enhance production, which will increase the supply of food grains.
ii. Increase the economic access to food for people.
iii. Create a production pattern that reflects the economy’s overall needs.

Therefore, the establishment of Minimum Support Prices (MSPs) began in the mid-1960s to provide a supportive environment for farmers of major food crops, which were seen as having enormous potential to increase grain production. Currently, the Minimum Support Prices (MSP) programme covers 23 major crops (paddy, wheat, five coarse grains, five pulses, seven oilseeds, cotton, jute, tobacco, and sugar cane). There is relatively little incentive for farmers to switch from growing food grains to other crops, given the price support program that favours food grains. The price support policy has hampered crop diversification. The CACP determines minimum support prices by calculating the account cost of production and domestic and international market conditions. The MSP is determined by the principle of full cost of production, which includes the rental value of land, an imputed value of family labour, and returns to management (indiabudget.nic.in).

This policy is beneficial in several ways. India has transformed from a country with a severe grain shortage to a self-sufficient food grain country. The primary goal of achieving national food security was attained through the process of achieving self-sufficiency in food grains for the country. A strong foundation has been established for grain production and meeting medium-term grain demand. The policy had a favourable impact on farm income, cropping patterns, and cultivation costs, while also helping maintain price stability in the food grain market.

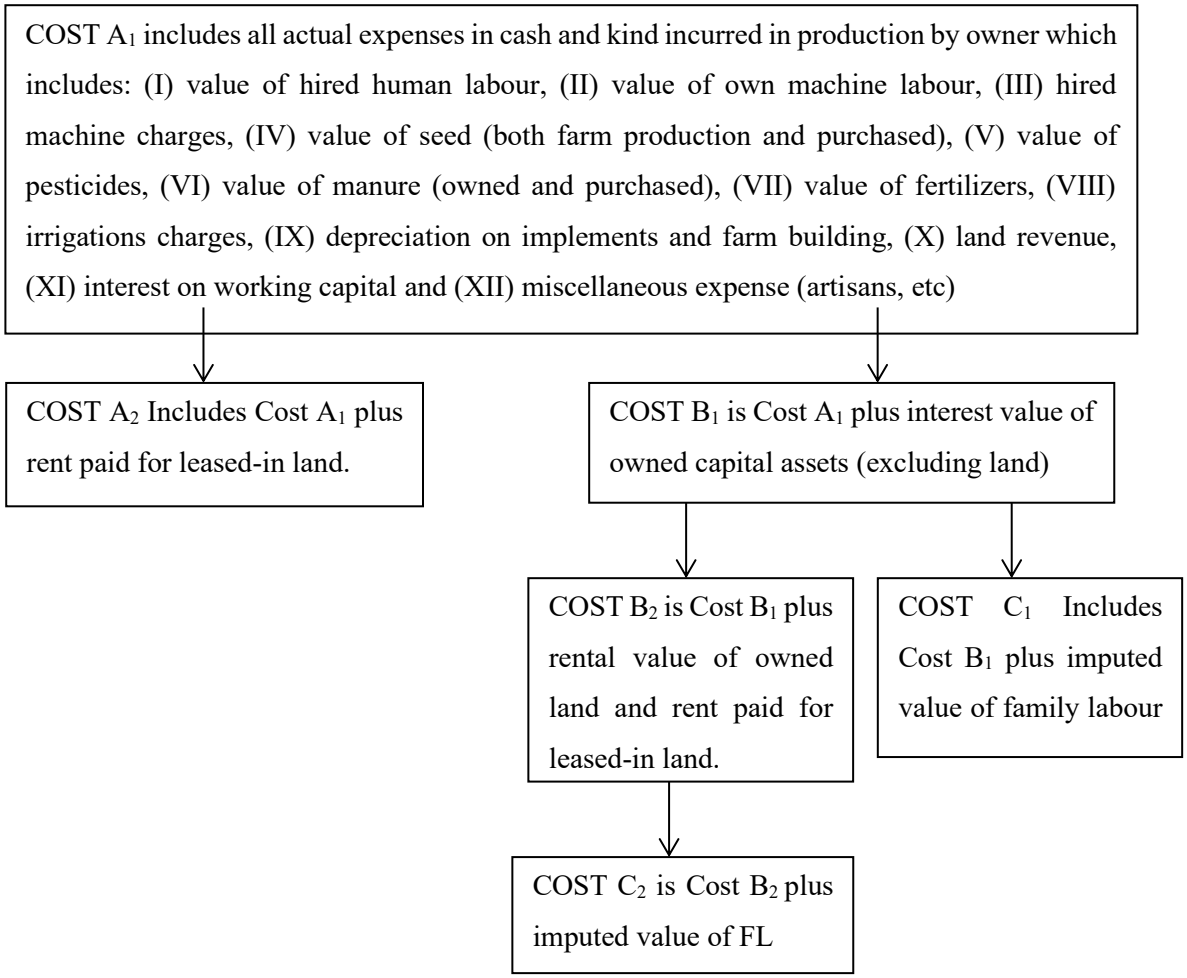
However, the negative impacts are also evident, as the food policy has been highly asymmetric and skewed, with procurement and the green revolution of paddy and wheat concentrated only in Northern and North-Western India, creating serious imbalances in the demand and supply of major crops nationwide. In a similar vein, the nation has been suffering severe shortages of pulses and edible oils due to a focus on cereal crops. Now, this shortage of pulses and edible oil is met with imports,

which has an adverse impact on producers in the unfavourable dry-land areas. These changes necessitate a fresh look at the role and relevance of the Minimum Support Price system in the country.

1.3.2 MSP: Basis and Implementation

The cost of cultivation, as suggested by the Jha Committee, served as the basis for calculating MSP. (Kadasiddappa et al., 2013). Over time, the concept of such a cost has become complex, leading to divergent views on the computation and estimation of MSP. The explanation of actual and promised computations is crucial, as these concepts are often unknown or misunderstood. Various concepts of cultivation cost are illustrated in Figure 1.1 below: -

Fig 1.1: Concepts of Cost of Cultivation



1.3.3 Cost Concepts and Basis of MSP

Cost Calculations for MSPs (Swaminathan and Existing Formulas): The Swaminathan study (Singh & Bhogal, 2021) proposed a potential remedy for the struggling farming community. It was advised that

the MSP should be calculated by including a 50% margin, in addition to almost all actual farm expenditures, as the reference for the MSP computation. Similarly, the central government announced in its 2018 budget address that the MSP will be 1.5 times the cost of production (CoP). The government applied a 50% margin and the A2 plus family labour (FL) formula. When the government committed to providing it, the margin on CoP, as determined by formula A2 + FL, was already greater than 50%. Consequently, it did not make much sense for farmers to see their income rise in this way. Additionally, a comparison of the existing and Swaminathan cost-computing approaches reveals that the present MSP estimated with reference cost A2+FL and that calculated with reference cost C2 for the major crops differ (Table 1.2). In other words, the 50% margin over A_2+FL that was promised is used to improve farmer income. Therefore, in general, it is preferable to use Swaminathan's suggested MSP formula, C2 plus 50%, to give farmers a justifiably higher value for their produce.

The table shows that for paddy, the A2+FL cost of cultivation is 1245, while the more comprehensive C2 cost is 1667. The Minimum Support Price (MSP) is set at 1868. This means the MSP is about 50% higher than the A2+FL cost, giving farmers a significant margin when only direct costs and family labor are considered. Wheat stands out with the highest margin over A2+FL at more than 108%, and also leads in margin over C2 at 35%, showing strong profitability. Gram and Rapeseed & Mustard also perform well, with margins of 74% and 90% over A2+FL, and 21% and 30% over C2 respectively,

Table 1.2: Crop-wise Margin of MSP over different costs in India, 2020-2021 (Rs. /Q)

Crops	A_2+FL	C_2	MSP	Margin Cover A_2+FL (%)	Margin Cover C_2 (%)
	(1)	(2)	(3)	(3) -(1)	(3) -(2)
Paddy	1245	1667	1868	50.04	12.06
Wheat	923	1425	1925	108.56	35.08
Gram	2801	4023	4875	74.04	21.08
Rapeseed & Mustard	2323	3401	4425	90.49	30.11
Maize	1213	1606	1850	52.51	15.19
Moong	4797	6289	7196	50.01	14.42
Cotton	3676	4935	5515	50.03	11.75

Source: (Singh & Bhogal, 2021)

1.3.4 Cost calculations for MSP (Ramesh Chand Committee)

In 2015, another Committee, set up by the GOI under the chairmanship of Ramesh Chand, was tasked with examining the methodological problems associated with fixing the MSP. The committee suggested incorporating some additional cost aspects into C_2 (Ministry of Agriculture and Farmers Welfare, Government of India, 2015). The following are suggested costs to add to cost C_2:

a. Earnings for the head of the agricultural household should be considered with a skilled worker instead of a manual one (the wage of an unskilled worker is currently included).
b. Instead of the common practice of calculating it for half a season, interest in working capital should be recorded for the entire season.
c. Actual land rent will be accounted for without any ceiling rate. Various post-harvest practices, including cleaning, grading, drying, packaging, marketing, and transportation, will be employed.

The Committee also suggested another cost term, C3 cost, calculated by adding 10% to C2 to account for the risks farmers face and the managerial services they provide.

According to a study by (Singh & Bhogal, 2021) , suggested that if the MSP is computed based on C_2 cost, as advocated by Ramesh Chand, the MSP for wheat and paddy would rise by 45% and 67%, respectively, compared to the MSPs for these two commodities currently in use. This can be shown from Table 1.3. However, neither Swaminathan's nor Ramesh Chand's recommendations have been implemented.

Table 1.3. Estimation of Proposed MSP in India (2020–2021) (Rs. /Qtl)

Crops	Existing MSP	Existing C_2	MSP as per Swaminathan {(2) + 50%}	As Per Ramesh Chand's Committee Report*			% Difference Between Proposed MSP and Existing MSP {(6) – (1)}
				C_2	{(4) +10%}	{(4) + 50%}	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Wheat	1925	1425	2138	1858	2044	2787	44.77
Paddy	1868	1667	2501	2077	2285	3116	66.80

Source: (Singh & Bhogal, 2021)

1.4 Similar Studies

The success of agricultural production programmes depends on incentive pricing in the form of minimum support prices, which are based on the production of high-yielding seeds, chemical fertilizers, intense irrigation access, etc. The implementation of the Minimum Support Price (MSP) requires adequate institutional and non-institutional arrangements (such as SHGs, FPOs/FPCs, and cooperatives) for purchasing targeted crops. At the same time, a proper public distribution system (PDS) must be in place to meet the population's food grain consumption needs, which are predominantly among the most vulnerable segments. These supplies may have to be sold at prices below the economic cost (Sarma, 1981). India enhanced food production during the Green Revolution through price incentives, or price premiums, in the form of support prices. Additionally, MSP aims to close the supply-demand gap by procuring food from surplus-producing states for distribution through the PDS and by preserving buffer stocks (Chand, 2008b; Jha & Srinivasan, 2006). It is possible to utilise Self-Help Groups (SHGs) to purchase paddy, thereby increasing the effectiveness of the purchase. In Andhra Pradesh, this initiative has been successful, with SHG members purchasing a total of 9.07 lakh tonnes of paddy at purchasing centres, demonstrating the significant role of SHGs in the state's paddy procurement programme. This paddy procurement system improved both food and livelihood security for farmers in Andhra Pradesh (Murthy, 2011). Additionally, a conceptual model was proposed to manage the paddy supply chain using e-governance and public-private partnerships, which assist farmers in acquiring the knowledge, technology, and mechanisation required for today's dynamic society and economy (Nagaraj & Krishnegowda, 2015).

In the procurement system, different variables that affect procurement prices are crucial policy instruments used by the government to intervene in markets for agricultural commodities. The quantity and quality of procurement can be enhanced by having a good procurement system, sufficient transportation infrastructure, and adequate irrigation facilities available to all farmers (Gulati & Sharma, 1990). A study has been conducted using secondary data on two types of rice procurement channels: custom milling (The government-owned paddy is then delivered to private rice millers) and levy (rice millers purchased paddy directly from farmers using their own resources). The study shows that, although custom milling has become predominant, the rice levy has a significant impact on farmers' revenues. They have used semi-nonparametric estimates of millers' values to simulate farmers' evidence and inferred that an increase in market price is caused by the increase in MSPs (Gupta, 2013). Also, despite the increasing MSPs, the market prices of the crops continue to rise further (Dantwala, 1967; Weber & Herrlein, 2011).

According to research on the effects of MSP on land-allocation judgments, the decision-making process heavily weighs on net income and cultivation costs. Similarly, relative costs are also considered a key factor. However, neither the anticipated pricing nor the distance from the market affected the distribution of areas (Deshpande, 2008a). Procurement can improve food supply for

consumers, provide price support to producers, and reduce price risk by serving as an incentive for producers (Arif, 2017). In the case of wheat, there was not much of a gap between the rate of growth in MSP (5.13 percent) and the cost of production (6.09 percent), which suggests that farmers' profit margins were practically consistent during the study period (2010-11 to 2016-17). The situation in the case of paddy was completely different, since MSP increased by 6.54 percent throughout the study period, while the cost of production increased by 10.33 percent, which reveals that the profit margin was drastically reduced in paddy (Patel & Singh, 2019). To maximise aggregate profit, many farmers in India shifted to cultivating high-yielding varieties of paddy and wheat due to the wheat- and paddy-centric MSPs offered by the central government (Chhatre et al., 2016). The implementation of MSP has been effective for paddy due to strong institutional support from the state government, but the effectiveness of market-intervention schemes for crops like potato may be a temporary arrangement and needs critical analysis of their economic costs and sustainability in West Bengal (Mandal et al., 2018).

Chatterjee & Kapur (2016) conducted a study on "Understanding Price Variation in Agricultural Commodities in India: MSP, Government Procurement, and Agriculture Markets" has shown that about 37 percent of price variation among the mandis is because of time-invariant location-specific factors and pointed out that government intervention improves paddy procurement in favour of farmers. The study has also found that farmers in Punjab and Haryana are well aware of the minimum support price programme, whereas awareness is very limited in other states, such as Gujarat, Maharashtra, Jharkhand, and West Bengal.

From a safety net standpoint, MSP supports farmers by establishing a floor price, which is the minimum price at which a procurement agency can purchase crops when the open market price falls below it. If a farmer is aware of the support price for the crops in the absence of procurement, the farmer may refuse to accept a price below MSP. Traders and middlemen might become exploitative and offer prices below MSP if they aren't even aware of the MSP for crops (Economic Survey 2016-17). In 1994, a survey of the urban business and intellectual groups had been done where, where 94 percent of respondents favoured price supports for farmers (Rahman, 1994). According to a survey on farmers' awareness of the minimum support price, it is found that between 23.7 percent and 20.04 percent of Indian households are aware of the MSP for the crops that they grow. Additionally, 27.83 and 30.48 percent of reporting farmers did not know which organisation purchases the food grains in MSP. In Karnataka,14.61 percent and 13.97 percent of farmers respectively, are aware of the MSP announced during Kharif and Rabi (Aditya et al., 2017). Therefore, in this study, awareness about MSP is used as a stand-in for the effect of support prices.

1.5 Objectives of the study

The present study tries to assess the benefits of decentralized procurement to farmers and society at large. It attempts to identify constraints (region-wise), if any, with the following specific objectives:

i. To ascertain the procurement of cereals in previous years.
ii. To study item-wise costs of procurement, handling, storage, and disposal in the selected states (5-6) and regions for the last three years.
iii. To study the impact of procurement on the local economy in terms of agricultural production, productivity, employment, and prices of cereals and food grains of the commodity.
iv. To ascertain the impact of decentralized procurement on procurement-related infrastructure
v. To study region-wise constraints in decentralized procurement of cereals.

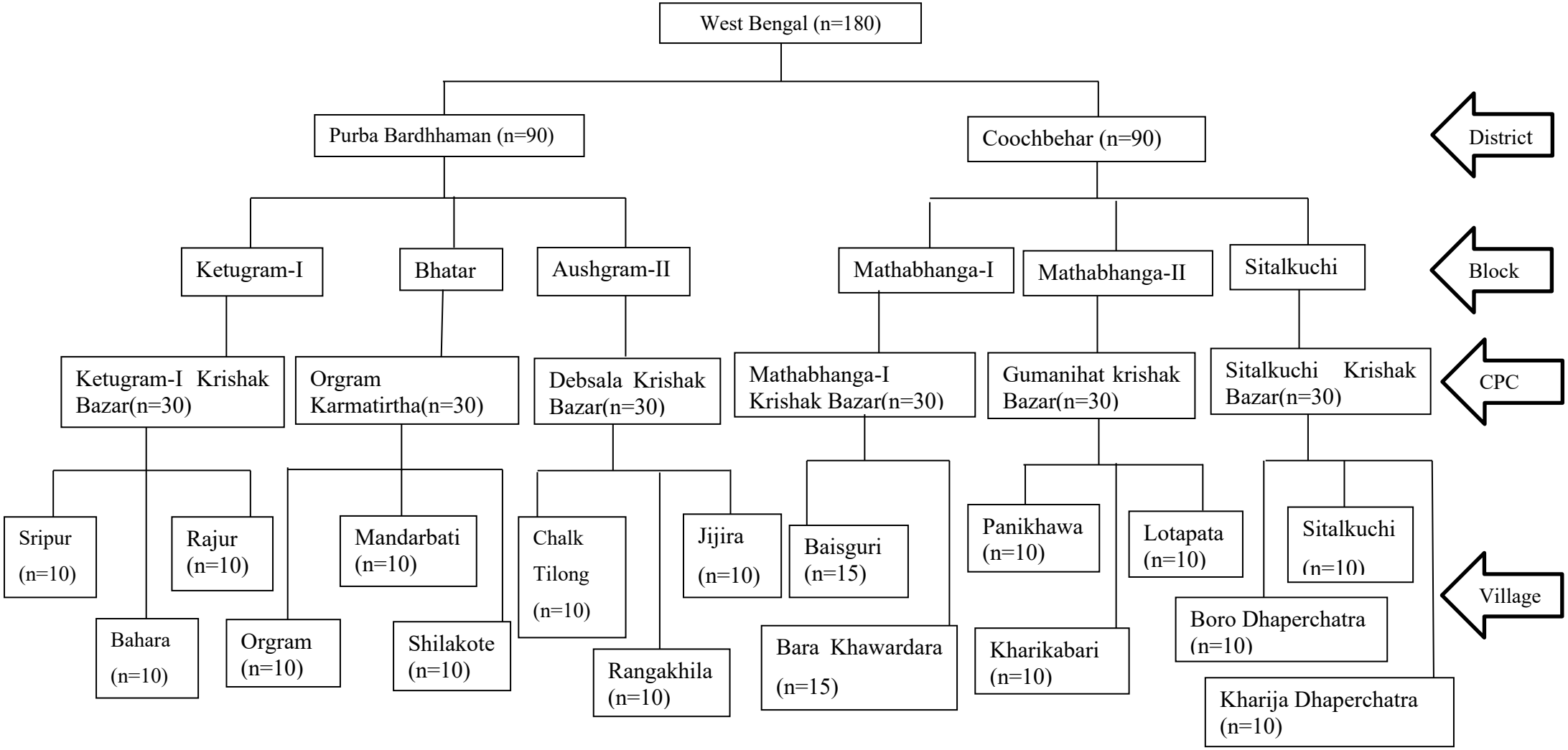
1.6 Methodology for the current study

In West Bengal, the study was conducted by the AERC (Agro-Economic Research Centre) in Santiniketan, Birbhum district. Purposefully, two districts (Purba Bardhaman and Coochbehar) were selected in the state, which contribute at least 5% to the state procurement share. The two districts belong to two different agro-climatic zones based on the highest paddy production among the six zones in West Bengal. For each chosen district, three procurement centres were selected based on spatial differences within it. Subsequently, three villages have been chosen for each procurement centre based on the typology of each village, including its level of development (institutions and infrastructure). Finally, in each sample village, 10 farmers have been selected based on the size of their farm holdings. Around 90 farmers from each district and 180 farmers from the state have been selected for the collection of primary information (Flowchart 1.1). Besides farmers, primary information was also collected from the heads of the procurement centres and village heads regarding their experiences with procurement. Primary information has been collected from two managers (Food Sub-Inspector & Disbursement Officer) of storage facilities linked to each procurement centre in the district. To achieve the above-mentioned objectives, the study used measures such as Simple arithmetic calculation.

To fulfil the first objective, secondary data on paddy production and procurement for 2013-14 to 2021-22 have been used. To obtain results for other objectives, we have used district-level data from two districts, including household-level socioeconomic data (population, literacy, landholding size, etc.), geographical, net, and gross sown areas, production of different crops, irrigation-related data, and infrastructure-related data.

To fulfil the requirements of the second to fifth objectives, descriptive statistics with tabular presentation have been applied.

Flowchart 1.1: Multistage Sampling Method



Flowchart 1.1: Multistage Sampling Method

CHAPTER II
AGRICULTURAL PRODUCTION AND PROCUREMENT - ALL INDIA ANALYSIS WITH RESPECT TO WEST BENGAL

2.1 Introduction

West Bengal is predominantly an agrarian economy, with 70 percent of the population residing in rural areas, and is dependent on agriculture in a direct or indirect manner. The share of agriculture and allied services accounts for almost 24.37 % (Bhawan & Marg, 2020) share in the economy. The state is the fifth-largest food grain-producing state in India, contributing about 6.32 % to the total food grain production of India (Government of India, 2021). However, the contributions of GSDP at current prices account for only 5.77% to total GDP (Bhawan & Marg, 2019). The state is also characterized by widespread poverty and extreme dependence on agriculture. It is rich in natural resources (land and water) but has a high population density and declining soil fertility. The rural poverty rate in the state is 20%, compared to an overall India poverty rate of 21.9% (Planning Commission, 2011-12).

Wide-spread poverty is a common phenomenon in West Bengal, having a per capita income (PCI) of Rs. 126121, whereas the national average of per capita income is Rs 151760 in 2019-20 at 2011-12 constant prices (Bhawan & Marg, 2020). West Bengal figures among the poor PCI states of India, with a moderate poverty incidence rate.

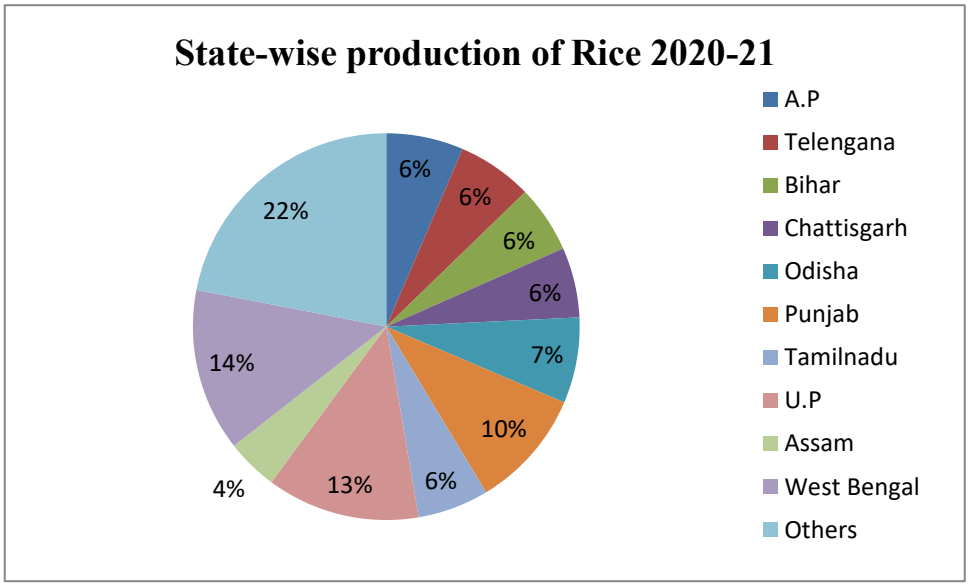
West Bengal has an agriculturally based economy. West Bengal is the largest rice-producing state in India, followed by Uttar Pradesh, Punjab, and Odisha, producing about 13.62% of the country's total rice production. In 2019-20, West Bengal contributed 15.88 million tonnes to the national rice production of 118.87 million tonnes. The agriculture sector accounts for a major share of the state's economy. The Agro-climatic zone of West Bengal is the Lower Gangetic Plains, which is rich in soil fertility, enhancing farmers' production and productivity. Paddy is the main crop, which at times yields three successive crops (Aman, Aus, and Boro) in a year. Paddy covers about 73% of the total operational area, and it is the major crop, accounting for about 70% of the total area under food grains (Directorate of Agriculture, Govt. of West Bengal, 2019-20). The total paddy production was 17829279 tons during the year 2019-20 (fci.gov.in). About 70% of Bengal's farmer depend on agriculture for their livelihood. Therefore, the government takes responsibility for these rural farmers. Better market access is necessary for the farmers, and they must receive a fair price for their paddy. Because a proper remunerative price for the farmers' productions, which is only feasible when there is an effective and efficient procurement system, is essential to improving their economic conditions as well as standard of living.

The ever-increasing population is putting pressure on limited land resources across all states, driving down land holdings. In West Bengal, the share of large and medium-sized holdings among farmers is limited, and the share of area operated by semi-medium holdings is also declining. A rise in the percentage of marginal holdings and a decline in the percentage of holdings in all other categories have become common phenomena in West Bengal. The percentage of area operated by marginal holdings has been declining over the decades, while the percentage of area under small holdings has been rising more slowly. The size distribution of operational holdings in this state is evident from the Gini coefficient over the past few decades, which shows no discernible change in land concentration. The distribution of land holdings in the state is highly skewed, with an average holding size of 0.76 hectares. 82.81% of farmers are marginal, accounting for only 53.93% of the state's cultivable area, and 13.41% are small farmers. In 2015-16 total area devoted to rice cultivation was 5486859 hectares (Agriculture Census 2015-16). The average yield of rice is 28.92 quintals per hectare, compared to the all-India average of 27.22 quintals per hectare for rice in 2019-20, indicating a slightly higher yield than the India average (Government of India, 2021). In West Bengal, paddy is a major cereal that is procured by the FCI and state government procurement agencies.

2.2 Rice Production

Rice production is widely scattered across India's states. In 2020-21, India's total rice production was 122.27 million tons. The production share of different states is strongly influenced by the population's consumption habits. For example, West Bengal, a major rice-producing state, occupies the prime position by contributing about 14 percent of all of India's production. Uttar Pradesh, with a significant area under rice cultivation, is the second-largest producer, accounting for 13% of all-India production. Punjab, with a 10% share, is the third-highest rice-producing state. Though these three major rice-producing states account for a significant share of the total rice production pie, other states like Odisha (7%), Andhra Pradesh, Telangana, Chhattisgarh, Bihar, and Tamil Nadu (6%) are also contributing considerably. The rest of the states together contribute about one-fourth of the total rice production (see Fig. 2.1)

Fig 2.1: Percentage share of states in total production of rice in 2020-21



Source: Statistics at a Glance 2021, Ministry of Agriculture, Government of India

2.3 Rice consumption in West Bengal

Bengal and its people are renowned for their fondness for rice. An average Bengali consumes rice daily; some may even eat it twice or three times a day. Bengalis belong to a community where rice is an integral part not only of their diet but also of their culture and traditions. The rice consumed daily is parboiled rice, which is once boiled with the husk, then soaked, steamed, and dried to achieve the best results. This process gives the grains their distinctive taste, texture, and colour. With modernization, machinery is used to complete this process, which enables better time management.

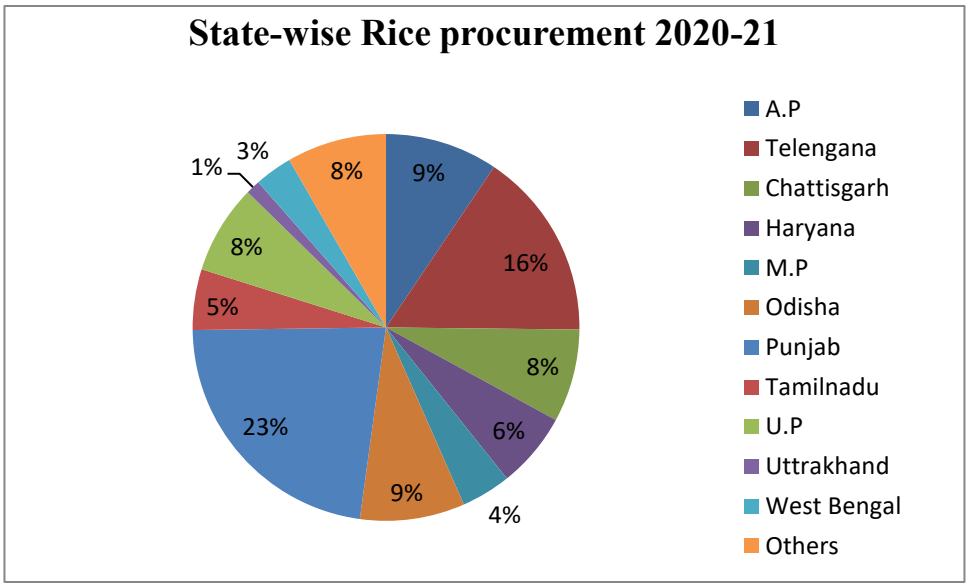
The average Bengali household consumes parboiled rice daily. They eat the other long-grain variety, better known as Basmati rice, only on special occasions. For the average Bengali, parboiled rice is comfort food. It is like their constant companion.

However, it is important that consumers learn what they are eating. Most people are unaware of the factors that negatively affect rice quality. People are aware of a few variant names of parboiled rice, such as Miniket, 10:10, Banskathi, and Dudheshwar, but only a limited section of people is aware of the process of categorization. It becomes imperative to educate consumers about what they consume and how they can identify problems.

2.4 Paddy Procurement in West Bengal

Across the states, the central and state agencies were involved in procuring rice and wheat. During the year 2020-21, the country procured a stock of 60078 thousand tonnes of rice and 38992 thousand tonnes of wheat. Punjab accounted for approximately 23% of the total amount procured, followed by Telangana at 16%. The share of Andhra Pradesh and Odisha was about 9% closely followed by Uttar Pradesh and Chhattisgarh (8%). Haryana and Tamil Nadu contributed about 6% and 5%, respectively. West Bengal was contributing about 3%. The share of other states was also considerable, but in limited proportion within individual states (see Fig. 2.2).

Fig 2.2: State-wise rice procurement 2020-21 ('000 tons)



Source: Statistics at a Glance, 2021, Ministry of Agriculture, Government of India.

Rice is the major cereal of India. These crops account for a significant share of the country's food production. The production of these crops is scattered across regions, depending on their natural resource base and agroclimatic conditions.

2.5 Implementation of Minimum Support Price (MSP)

In the present study, to verify the factual position, the procurement of rice across the state has been analyzed. From the analysis, it is found that both central and state agencies were involved in procuring rice across the states at varying levels (see Table 2.1)

MSP was effectively implemented in a limited number of states. There were 13 major rice-producing states and 5 major wheat-producing states where MSP was implemented.

Table 2.1: State list of MSP implementation

Name of the States	Items
Andhra Pradesh	Paddy
Telangana	Paddy
Bihar	Paddy
Chhattisgarh	Paddy
Haryana	Paddy &Wheat
Madhya Pradesh	Paddy & Wheat
Maharashtra	Paddy
Odisha	Paddy
Punjab	Paddy & Wheat
Rajasthan	Wheat
Tamil Nadu	Paddy
Uttar Pradesh	Paddy & Wheat
Uttarakhand	Paddy
West Bengal	Paddy

Source: fci.gov.in

2.6 Paddy Procurement through States, FCI, and Other Agencies

The shift from centralised to decentralized procurement in the West Bengal paddy procurement mechanism is expected to have had multiple effects. There has been an increase in paddy procurement in the state, as well as the expansion of its own PDS, and this system provides better price security for small and marginal farmers, thereby increasing household cereal consumption. The direct result of the reforms and the focus on DCP in West Bengal is reflected in the increase in paddy procurement in the state. While DCP has several advantages over Centralized procurement, the state government did not initially take it seriously. It occurred due to limited capacity at the state level, which did not provide the necessary support for the DCP scheme, and an unfriendly policy environment at the union level. With the recent clarification of the roles of the state and FCI, as well as other agencies (FPO/FPC, SHGs, PACs, etc.), DCP procurement of paddy and wheat has increased in 23 states (FCI, 2021-22). Compared to 2013–14, paddy procurement in West Bengal in 2021–22 is more than 3 times higher. While about 10.62 lakh metric tonnes of paddy were procured in the state in 2013–14, in 2021–22 the procurement went up to over 35.31 lakh metric tonnes (Table 2.2). In this table, we have seen that the FCI's procurement share in West Bengal was very limited for several years. FCI data show that 3.99%, 6.47%, and 4.05% of paddy was procured by FCI in

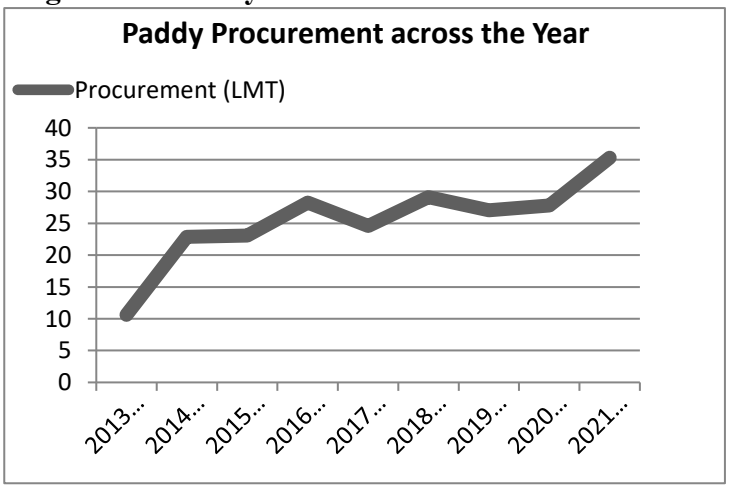
2015-16, 2016-17, and 2018-19, respectively, with the remainder procured by the state government (wbfood.gov.in). In 2021-22, FCI data also show that state governments procured 35.31 lakh metric tonnes of paddy. After the DCP scheme begins, paddy procurement increases year after year (Figure No. 2.3).

Table 2.2: Paddy Procurement through FCI or State or Any Private Player (Fig. In Lmt)

Year	FCI	State Ag	Private Player	Total	FCI Share %
2013-14	0	10.62	0	10.62	0
2014-15	0	22.86	0	22.86	0
2015-16	0.39	22.14	0.53	23.06	3.99
2016-17	1.27	26.45	0.56	28.28	6.47
2017-18	0.04	24.52	0.04	24.6	0.33
2018-19	1.18	27.93	0	29.11	4.05
2019-20	0.76	26.27	0	27.03	2.81
2020-21	0.65	27.14	0	27.79	2.34
2021-22	0	35.31	0	35.31	0

Source: fci.gov.in

Figure 2.3: Paddy Procurement across the Year



Source: Table 2.2

2.7 Paddy Procurement Status of West Bengal

West Bengal's share of the country's total paddy procurement is minimal (currently about 3%). We see that West Bengal is in first position, with approximately 13 percent of the country's paddy production presently coming from the state (Figure 2.1). This is a more valid indicator to consider because data on paddy procurement is less significant than that on paddy production. Paddy procurement depends on the operations of the FCI, state government, and various state agencies (SGHs, FPO/FPC, PACS). Therefore, paddy procurement in West Bengal would require further reforms to increase its share in line with the state's production. In Table 2.3, this is reflected in the data, where West Bengal's procurement contribution was approximately 6.91% in 2013-14 and increased to 17% in 2020-21. Paddy procured the highest percentage, approximately 18.48%, in 2016–17. Looking at the table above, we can see that paddy procurement trends showed massive growth in production from 2013–14 to 2020–21. West Bengal is one of the states with the lowest proportion of production procured, as shown in Table 2.3.

Table 2.3: Percentage of Paddy Procured by the States over the Years (Fig. In Lmt)

Year	Production	Procurement	Percentage of Procured
2013-14	153.7	10.62	6.91
2014-15	146.8	22.86	15.57
2015-16	159.5	23.06	14.46
2016-17	153	28.28	18.48
2017-18	149.7	24.6	16.43
2018-19	162.4	29.11	17.92
2019-20	158.8	27.03	17.02
2020-21	165.24	27.79	16.69

Source: Statistics at a glance, agricoop.gov.in and fci.gov.in

2.8 Distribution of the Two Districts in West Bengal

2.8.1 Distribution of Demographic Details of the Two Districts in West Bengal

The distribution of demographic details is shown in Table 2.4. The table shows that we have chosen two districts, Purba Bardhaman and Coochbehar, which are located in two different Agro-climatic regions in West Bengal: the Gangetic Alluvial Zone and the Terai-Teesta Alluvial Zone, respectively. We have selected three different blocks in each district. Aushgram-II, Bhatar, and Ketugram-I are chosen from Purba

Bardhaman, and Mathabhanga-I, Mathabhanga-II, and Sitalkuchi are chosen from Coochbehar based on spatial distance and infrastructure. In Table 2.6, the Bhatar block covers 41501 hectares. It is the largest block by area in the Purba Bardhaman district. The total household count in the block is 60,800, and the population is 263,064, with a population density of 630 persons per square kilometre. Similarly, the population in the other two chosen blocks, Aushgram-II and Ketugram-I, is 150896 and 165408, with population densities of 419 and 853, respectively, as per the 2011 census. The rural literacy rate is the highest (74.14%) in the Bardhaman-I block, among all Purba Bardhaman blocks. The female literacy rate is much lower in the Aushgram-II (60.37%) block than in the Bhatar (65.08%) and Bardhaman-I (68.22%) blocks (2011 population census).

We have also seen that the Coochbehar-II block is the largest in terms of population in the Coochbehar district. The total population of the Coochbehar-II block is 343,901, and the number of households is 67,496. The rural literacy rate is also the highest in the Coochbehar-II block, at approximately 71.14%. However, Coochbehar-I block is the largest geographically in the Coochbehar district. And the number of households in the Coochbehar-II block is 68,419. In the Coochbehar district, we have chosen Mathabhanga-I, Mathabhanga-II, and Sitalkuchi, with Mathabhanga-II being the largest block in terms of population and household capacity. Of the three selected blocks, Mathabhanga-II has the highest rural literacy rate (63.35%). Sitalkuchi block has the lowest literacy rate, population, and number of households among the three selected blocks.

Table 2.4: Block-wise Demographic details in the districts

Districts	Blocks	Total population	Rural Population (%)	Rural literacy (%)	% of rural male literacy	% of rural female literacy	Number of rural households
Purba Bardhaman	Aushgram-II	150896	100	68	75.26	60.37	37011
	Bhatar	263064	100	71.55	77.78	65.08	60080
	Ketugram-I	165408	100	68	72.81	62.91	37123
	Bardhaman-I	215943	81.42	74.14	81.14	68.22	49695
	Manteswar	237398	100	73.08	78.04	67.92	54082
Coochbehar	Coochbehar-I	326558	89.8	65.79	70.99	60.25	68419
	Coochbehar-II	343901	84.3	71.14	76.19	67.58	67496
	Mathabhanga-I	218191	100	61.65	68	54.89	49786
	Mathabhanga-II	227397	100	63.35	69.19	57.15	50902
	Sitalkuchi	185353	100	60.73	66.49	54.76	42587

***Source*:** (Agriculture Census 2015-16)

2.8.2 Distribution of Land Size According to the Blocks of Two Districts in West Bengal

West Bengal is an agrarian economy; more than two-thirds of the population depends on agriculture and the allied sector for their livelihood. So, land is the primary factor of production, determining people's economic conditions and providing the largest employment opportunities for family members. Therefore, it is necessary to study their land holding capacity in the context of income and employment generation. The distribution of household categories is presented in Table 2.5. According to this table, we see that in Coochbehar district, the percentage of sub-marginal farmers is much more than in Purba Bardhaman district, but in the case of marginal farmers percentage is more or less the same, where Coochbehar has 56% sub-marginal farmers and 49% in Purba Bardhaman district, and the percentage of marginal farmers was around 25% in both districts. The percentage of small farmers in Purba Bardhaman districts (18.58%) was more than in Coochbehar districts (13.67%). In the Purba Bardhaman districts, the number of sub-marginal farmers is highest in Manteswar block, at around 17,741, and lowest in Aushgram-II block, at around 6,249. On the other hand, in the Coochbehar districts, the number of sub-marginal farmers is highest in the Mathabhanga-I block, at around 31,958, and lowest in the Coochbehar-II block, at around 11,800. In Mathabhanga-I block, 59.35% and 21.47% of the land belong to sub-marginal and marginal households, whereas 13.77% of the land belongs to small category households. Semi-medium farmers in both districts are relatively similar (5%).

Table 2.5: Different Categories of Households in blocks of the two districts

Districts	Blocks	Sub-marginal (less than 0.4 hac)	Marginal (0.4 -1 hac)	Small (1.1-2 hac)	Semi-medium (2.1-4 hac)	Medium (4.1-10 hac)	Large (more than 10 hac)
Purba Bardhaman	Aushgram-II	6249	5354	3740	1204	133	0
	Bhatar	12696	7008	3936	1704	16	0
	Ketugram-I	7459	4963	3076	952	117	0
	Bardhaman-I	13544	4943	3733	1534	218	0
	Manteswar	17741	6654	7002	1441	232	0
	Total	**57689**	**28922**	**21487**	**6835**	**716**	**0**
	(%)	**(49.88)**	**(25.01)**	**(18.58)**	**(5.91)**	**(0.62)**	**(0)**

Coochbehar	Coochbehar-I	12094	8447	4455	1751	10	0
	Coochbehar-II	11800	6764	6224	2393	644	0
	Mathabhanga-I	31958	11564	7413	2903	10	0
	Mathabhanga-II	17407	5614	1653	432	29	0
	Sitalkuchi	21868	9461	3464	1414	0	0
	Total (%)	**95127 (56.03)**	**41850 (24.65)**	**23209 (13.67)**	**8893 (5.24)**	**693 (0.41)**	**0 (0)**

Source: (Agriculture Census 2015-16)

2.8.3 Block-wise Land Use Classification of Two Districts in West Bengal:

The distribution of geographical and operational holdings across two districts, by block, is shown in Table 2.6. The table reveals that the total land area of five blocks in the Purba Bardhaman district is 158778 hectares. Out of this land, 114284 hectares have been designated as cultivated land, accounting for 71.98% of the total geographical area, whereas in Coochbehar District, cultivated land accounts for 71.33% of the total geographical area, 163746 hectares. Other estimates indicate that the cropping intensity in Coochbehar district (203.42%) is higher than in Purba Bardhaman district (169.58%). This is why irrigation (tube wells, canals, tanks, river lift irrigation, etc.) and changes in cropping patterns are available; farmers in Coochbehar include cash crops like tobacco in their cropping patterns. Table 2.6 also indicates that different blocks of Coochbehar have significantly higher cropping intensity than the blocks of Purba Bardhaman. The Coochbehar-I block has the highest cropping intensity (219.81%), and the Mathabhanga-I block has the lowest cropping intensity (186.05%) among the blocks of Coochbehar district. On the other hand, Manteswar block has the highest cropping intensity (197.38%), and Aushgram-II block has the lowest (134.62%) among the blocks of Coochbehar district.

Table 2.6: Block-wise Land Use Classification (In hectares)

Districts	Blocks	Geographical area	Net area sown. (NCA)	Gross Cropped Area.	Cropping intensity in %
Purba Bardhaman	Aushgram-II	36045	16804	22623	134.62
	Bhatar	41501	30135	54372	180.42
	Ketugram-I	19398	15371	22922	149.12
	Bardhaman-I	25041	20907	32563	155.72
	Manteswar	36793	31067	61322	197.38
	Total	**158778**	**114284**	**193802**	**169.58**

Coochbehar	Coochbehar-I	37202	24800	54514	219.81
	Coochbehar-II	36805	27000	51913	192.27
	Mathabhanga-I	31860	23300	43350	186.05
	Mathabhanga-II	31020	20300	43965	216.58
	Sitalkuchi	26859	21400	43847	204.89
	Total	**163746**	**116800**	**237589**	**203.42**

Source: Districts Agricultural Head Office & Agriculture Census 2015-16

2.8.4 Block-wise Distribution of Infrastructure and Institutions of Two Districts in West Bengal

Information on banks, Co-operatives, SHGs, Fair Price Shops, and post offices, shown in Table 2.7, suggests the level of development in blocks of the districts. The number of functional cooperatives and SHGs in districts is impressive. Although South Bengal (Purba Bardhaman) is more developed than North Bengal (Coochbehar), the number of functional Self-Help Groups is significantly higher in Coochbehar, at approximately 13,069, than in the Purba Bardhaman district. The number of Post Offices (145) and Co-operative societies (319) in the five blocks of Purba Bardhaman district is higher than the Post Offices (116) and Co-operative societies (250) in Coochbehar District. In this table, we can see that the number of Fair Price/Ration shops is higher in Purba Bardhaman than in Coochbehar. Field visits suggest that decentralized procurement of cereals has also emerged as an important instrument to encourage cooperatives in the district. The table below clearly indicates that the Krishi Vigyan Kendra (KVK) is situated in the Coochbehar-II block of the Coochbehar district. In Purba Bardhaman district, the KVK is located in the Galsi-I block, which is not included in the district's sample selection block. A regulated market centre (RMC) is present in every district block. This RMC is usually located in Block Krishak Bazar. The RMC's primary function is to store paddy before it is transported to the rice mill or to store rice prior to the operation of the PDS. In every block of the district, there is one, two, or three Price Support Scheme (PSS) procurement centres or centralized procurement centres (CPCs), which are primarily responsible for paddy procurement under the decentralized procurement scheme at the minimum support price. In the table, we see that each block has, on average, two CPCs. Bhatar Block in Purba Bardhaman district and Coochbehar-I and Coochbehar-II blocks in Coochbehar district each have three CPCs.

Table 2.7: Block-wise Infrastructure and Institutions in Purba Bardhaman and Coochbehar districts.

Block	Bank / cooperative bank	Post office	Functional Co-operative Societies,	Functional SHGs	Existence of KGK / KVK	Fair Price Shops/Ration Dept.	Storage & warehouse capacity(tons)	Ag. Produce Markets (APMC or non-APMC Anaj mandi)/ Regulated Market Centre	PSS procurement centres or centralized procurement centres (CPCs)
Purba Bardhhaman									
Aushgram-II	12	27	48	1801	No	48	No	Yes	2
Bhatar	16	31	54	3285	No	68	No	Yes	3
Ketugram-I	7	25	60	2674	No	53	No	Yes	1
Bardhaman-I	14	18	82	1991	No	118	No	Yes	2
Manteswar	11	44	75	2332	No	101	No	Yes	2
Total	**60**	**145**	**319**	**12083**		**388**			**10**
Coochbehar									
Coochbehar-I	40	31	70	6555	No	75	No	Yes	3
Coochbehar-II	17	27	68	5727	Yes	88	No	Yes	3
Mathabhanga-I	10	23	43	4423	No	43	No	Yes	2
Mathabhanga-II	11	20	28	4233	No	47	No	Yes	2
Sitalkuchi	5	15	41	4214	No	46	No	Yes	1
Total	**83**	**116**	**250**	**25152**		**299**			**11**
***Source*:** (District Statistical Handbook 2016-17), nrlm.gov.in, Wikipedia etc.									

Note: Agriculture Produce Market (APMC or non-APMC) is a Regulated Market Centre or Krishak Bazar or Krishan Mandi

2.8.5 Block-wise Distribution of Irrigation Area by Source of two Districts in West Bengal

In today's world, prototype agriculture poses a great threat to food and nutritional security due to the continuously growing population. To meet the needs for food, feed, fodder, and fibre, farmers need to change their cropping patterns, input utilization, and traditional cultivation techniques. Farmers also need to grow crops in the non-monsoon season to fulfil this growing demand. So, people felt the need for irrigation for their crop fields. At the same time, it must be accepted that irrigation is the most essential input for modern cultivation practices. In West Bengal, irrigation facilities were scarce in some districts and abundant in others. Block-wise irrigated areas, along with their sources, in two districts are presented in Table 2.8. The table shows that the percentage of irrigated area is higher in Purba Bardhaman district

(71.54%) than in Coochbehar district (43.92%) due to a well-established canal system for irrigation. In the Purba Bardhaman district, the canal system irrigates 90.69% of the total irrigated land. Whereas in Coochbehar district, approximately 1.81% of the irrigated area is served by a canal system.

Table 2.8 Net Sown Area irrigated with alternate Sources of Irrigation

Districts	Block	Net Cropped Area (NCA)	Tube-well	Canals	Tanks	RLI (River Lift Irrigation)	Others	Total Irrigated Area	Irrigated Area (%)
Purba Bardhaman	Aushgram-II	16804	1044	12640	0	299	0	13983	83.21
	Bhatar	30135	384	26867	0	423	0	27674	91.83
	Ketugram-I	15371	1425	0	0	73	0	1497	9.74
	Bardhaman-I	20907	904	16057	0	140	0	17101	81.8
	Manteswar	31067	1988	18585	0	927	0	21500	69.21
	Total	**114284**	**5745**	**74149**	**0**	**1862**	**0**	**81755**	**71.54**
Coochbehar	Coochbehar-I	24800	9365	200	355	1520	1035	12475	50.3
	Coochbehar-II	27000	8128	55	1640	1410	1120	12353	45.75
	Mathabhanga-I	23300	4005	200	150	1428	948	6731	28.89
	Mathabhanga-II	20300	6056	240	320	1595	855	9066	44.66
	Sitalkuchi	21400	8300	234	395	1046	698	10673	49.87
	Total	**116800**	**35854**	**929**	**2860**	**6999**	**4656**	**51298**	**43.92**

Source: Districts Statistical Handbook 2016-17

However, out of the total irrigated area, 69.89% and 7.02% of the land were under Tube-well irrigation systems in Coochbehar and Purba Bardhaman districts, respectively. The area irrigated by tube wells was more extensive in the Coochbehar district because most tube wells were shallow, powered by diesel, and there was no electricity available in the farmers' fields. Here, we have seen that Tank-based irrigation is absent in the Purba Bardhaman districts, whereas in the Coochbehar districts, it covers approximately 5.57% of the total irrigated area. In both districts, the River Lift Irrigation system accounts for 2.27% and 13.64% of the total irrigated area, respectively.

2.9 Distribution of Targeted Crop (Paddy) Area of Two Districts in West Bengal

Agriculture is one of West Bengal's primary sectors. Paddy is the only cereal cultivated widely throughout West Bengal. Not only that, but it is also the principal cultivated crop across the states. West Bengal is the largest rice-producing state in India, followed by Uttar Pradesh, Punjab, and Odisha, which collectively account for about 14% of the country's total rice production (Statistics at a Glance, 2021). The Agro-climatic zone of West Bengal is the Lower Gangetic Plains, which is rich in soil fertility, enhancing farmers' production and productivity. Paddy is the main crop, which at times yields three successive crops (Aman, Aus, and Boro) in a year. Paddy covers approximately 73% of the total operational area, and it is the major crop, accounting for about 70% of the total area under food grains (Directorate of Agriculture, Government of West Bengal, 2019-20). The paddy area of West Bengal is 5.49 million hectares (2019-20). The distribution of areas of targeted crops (Aman, Aus, and Boro paddy) is described in Table 2.9. The table shows that Aman paddy (winter paddy) is the predominant type of paddy, accounting for approximately 66% and 82% (2020-21) of the total paddy planted area in the districts of Purba Bardhaman and Coochbehar, respectively. The table illustrates that from 2019-20 to 2020-21, the gross cropped area in Purba Bardhaman district increased by 4.52 percent, whereas in Coochbehar district it decreased by 2 percent. Flooding during Aman rice transplanting and precipitation just prior to harvest reduced the total paddy planted area in Coochbehar. The Purba Bardhaman district covered around 9.82% of West Bengal's paddy-cultivated area. This district contributes not just Aman rice, but also Aus and Boro rice. The table shows that around 66.26% of the paddy gross cropped area in Purba Bardhaman district was covered with Aman paddy (winter paddy), while the remaining 32.74% and 1% were covered by Boro and Aus paddy, respectively, in 2020-21. However, in the Coochbehar districts, Aman paddy covered approximately 82.33% of the total cultivated paddy area, followed by Boro (15.91%) and Aus (1.75%).

Table 2.9: Area under crops in blocks (In percent of GCA)

Districts	Blocks	2019-2020				2020-2021			
		Aman Paddy (ha)	Aus Paddy (ha)	Boro Paddy (ha)	Gross Cropped Area. (GCA)	Aman Paddy (ha)	Aus Paddy (ha)	Boro Paddy (ha)	Gross Cropped Area. (GCA)
Purba Bardhaman	Aushgram-II	18368	704	2209	21281	18783	568	2051	21402
	Bhatar	30326	1588	19615	51529	33175	401	19838	53414
	Ketugram-I	15089	46	4964	20099	15719	73	4582	20374
	Bardhaman-I	16799	499	7315	24613	16793	418	8158	25369
	Manteswar	22583	1	19352	41936	26173	205	20044	46422
	Total (%)	**103165 (64.70)**	**2838 (1.78)**	**53455 (33.52)**	**159758 (100)**	**110643 (66.26)**	**1665 (1.00)**	**54673 (32.74)**	**166981 (100)**
Coochbehar	Coochbehar-I	21731	217	5015	26963	22766	390	5795	28951
	Coochbehar-II	23458	478	1825	25761	22315	666	2434	25415
	Mathabhanga-I	21562	159	2109	23830	20524	130	2990	23644
	Mathabhanga-II	20772	175	4135	25082	17020	340	4408	21768
	Sitalkuchi	21327	411	4573	26311	20648	671	4334	25653
	Total (%)	**108850 (85.07)**	**1440 (1.13)**	**17657 (13.80)**	**127947 (100)**	**103273 (82.33)**	**2197 (1.75)**	**19961 (15.91)**	**125431 (100)**
Source: **Additional Director of Agriculture (Evaluation), Govt. of West Bengal 2019-20 & 2020-21**									

Table 2.9 reflects that Boro paddy covered a greater percentage of land in Purba Bardhaman (32.74%) than Coochbehar (15.91%) because better irrigation facilities are available in the Purba Bardhaman district, the maximum area covered under the Canal system irrigation irrigates 90.69% of the total irrigated land, and there is a market for Boro paddy after harvesting.

2.10 Chapter Summary

i. West Bengal, a major rice-producing state, occupies the prime position by contributing about 14 percent of all India's production and Procurement share at about 3 percent of the total paddy procurement of our country.

ii. The procurement of rice across the state was analysed, and it was found that both central and state agencies were involved in procuring rice across the state at varying levels. But in West Bengal, only the State Government (wb.food.gov.in) is responsible for the entire paddy procurement process.

iii. The amount of paddy procured in West Bengal in 2021–2022 (35.31 lakh metric tonnes) is more than three times what it was in 2013–14 (10.62 lakh metric tonnes). The state government purchases 94% to 97% of the total paddy, and the rest is procured by FCI. After the DCP scheme begins, paddy procurement increases year after year. (Table 2.2).

iv. In accordance with the explanation above, West Bengal's procurement contribution was approximately 6.91% in 2013–14, which increased to 17% in 2020–21. West Bengal is one of the states where the lowest proportion of production is procured. (Table 2.3)

v. We have seen that in the Coochbehar district, the percentage of sub-marginal farmers (56%) is much higher than in the Purba Bardhaman (49%) district, but in the case of marginal farmers, the percentage is more or less the same, around 25% in both districts.

vi. The above justification declares that the cropping intensity (169.58%) in Purba Bardhaman district is lower than the cropping intensity (203.42%) in Coochbehar district, though the percentage of irrigated area is higher in Purba Bardhaman district (71.54%) than in Coochbehar district (43.92%). This happened because water is not available year-round in the canal system in Purba Bardhaman district, and farmers in Coochbehar district include cash crops such as tobacco in their cropping patterns.

vii. The above explanation illustrates that around 66.26% of the paddy gross cropped area in Purba Bardhaman district is covered with Aman paddy (monsoon paddy), while 32.74% is covered by Boro (summer) paddy in 2020-21. But in the Coochbehar district, Aman paddy covered approximately 82.33% of the total paddy cultivated area, followed by Boro (15.91%).

viii. The justification provided above shows that the gross cropped area in Purba Bardhaman district increased from 2019-20 to 2020-21by 4.52 percent, while it declined in Coochbehar district by 2 percent due to floods during the transplanting of Aman rice and precipitation right before harvest, which resulted in a fall in the total paddy planted.

The explanation stated that the Boro paddy covered a greater percentage of land in Purba Bardhaman (32.74%) than in Coochbehar (15.91%) because better irrigation facilities are available in Purba Bardhaman. The maximum area under the Canal system irrigates 90.69% of the total irrigated land.

CHAPTER III
HOUSEHOLD CHARACTERISTICS, SOCIO-ECONOMIC PROFILE AND LAND HOLDING STRUCTURE

It is very important to enquire into the socio-economic profile of a study area, as it reveals the condition of the local demography. This chapter will present the socio-economic conditions of the sample villages, where people are selling paddy at the minimum support price (MSP) procured by the Government.

3.1 Socio-Economic Profile of Sample Household

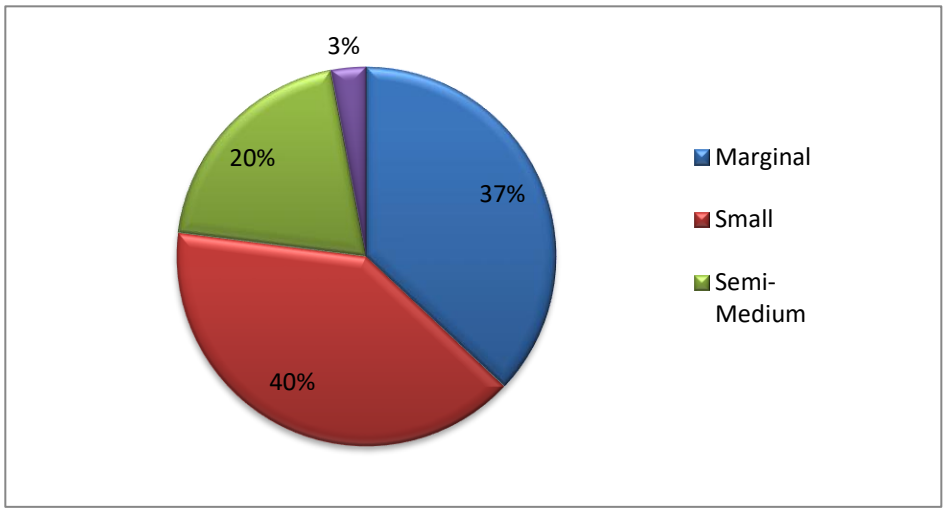
In Table 3.1, it is seen that in our sample, most of the farmers have small landholdings, followed by marginal, indicating a lower holding of agricultural land. Marginal farmers are higher in Coochbehar than in Purba Bardhaman, and the percentage of small farmers is higher in Purba Bardhaman. The number of semi-medium and medium farmers is higher in Purba Bardhaman, as land holding capacity is abundant in this district. The maximum sample household in our study is small and marginal, as shown in Fig. 3.1, indicating that farmers can sell their entire produce at MSP and do not depend more on local markets. It is important to note that medium and large farmers are the worst sufferers in selling their paddy in MSP, as their huge production is not procured for a quota system in our sample area.

Table 3.1: Number (percentage) of Landholders / Farmers with the Size of Operated Land in hectares

Categories (Ha)	Coochbehar		Purba Bardhaman		Total (In Number)	Percentage (%)
	Frequency	Percentage (%)	Frequency	Percentage (%)		
Marginal (<1)	41	22.78	26	14.44	**67**	**37**
Small (1-2)	35	19.44	37	20.55	**72**	**40**
Semi-Medium (2-4)	13	7.22	22	12.22	**35**	**20**
Medium (4-10)	1	0.55	5	2.78	**6**	**3**
Total	**90**	**50**	**90**	**50**	**180**	**100**

Source: Field Survey 2022

Figure 3.1: Frequency of Landholders

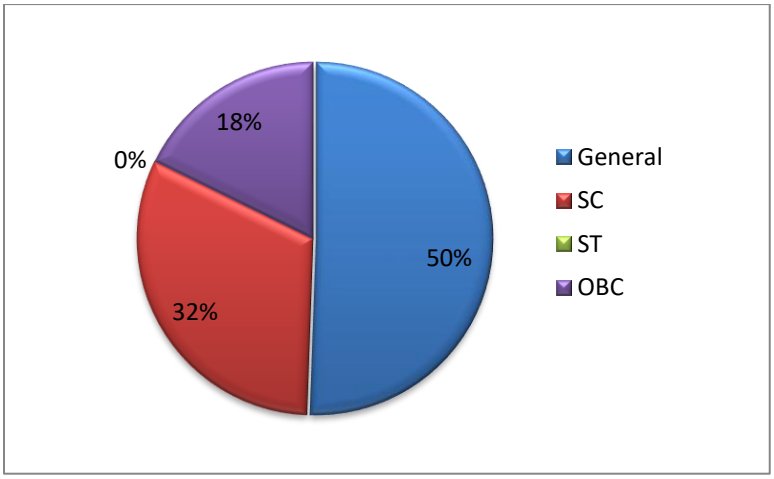


Source: Field Survey 2022

3.2 Land Size-wise Social Category

In Fig. 3.2, we observe that most of the sample households belong to the general category, followed by the scheduled castes and OBCs. The study did not find any scheduled tribe households. Table 3.2 shows the same thing across two districts and landholding classes. It is observed that most marginal farmers in Coochbehar are from the scheduled caste, whereas most of the sample households of marginal farmers in Purba Bardhaman belong to the general category. It is also seen that the scheduled caste concentration is higher in Coochbehar than in Purba Bardhaman.

Figure 3.2: Landholders in Social Groups



Source: Field Survey 2022

Table 3.2: Land Size-wise Social Category

Social Grouping/Land Size	Coochbehar				Purba Bardhaman				Grand Total (In Numbers)
	General	OBC	SC	ST	General	OBC	SC	ST	
Marginal	5	7	29	0	19	7	0	0	**67**
Small	12	4	19	0	29	7	1	0	**72**
Semi-Medium	3	2	8	0	18	4	0	0	**35**
Medium	1	0	0	0	4	1	0	0	**6**
Grand Total	**21**	**13**	**56**	**0**	**70**	**19**	**1**	**0**	**180**

Source: Field survey 2022

3.3 Land Size-wise Educational Qualification of Household Head

Table 3.3 below presents the percentage distribution of educational qualifications across land-holding categories. It is observed that the educational attainment of most households in the sample is up to the secondary level in both districts, Coochbehar and Purba Bardhaman. It is also observed that the primary- and secondary-level educated are both higher in Coochbehar than in Purba Bardhaman. The overall distribution of educational attainment indicates that most household heads are moderately educated.

Table 3.3: Land Size-wise Educational Qualification of Household Head

Districts	Land Size	Illiterate	Primary	Secondary	Higher Secondary	Graduate & above	Grand Total
Coochbehar	**Marginal**	1	12	21	4	3	**41**
	Small	0	8	22	2	3	**35**
	Semi-Medium	0	3	6	1	3	**13**
	Medium	0	0	0	0	1	**1**
Purba Bardhaman	**Marginal**	2	5	15	3	1	**26**
	Small	1	5	20	5	6	**37**
	Semi-Medium	0	0	11	4	7	**22**
	Medium	0	0	2	1	2	**5**
	Grand Total	**4**	**33**	**97**	**20**	**26**	**180**

Source: Field survey 2022

3.4 Average Family Size across Land Holding Classes

Table 3.4 presents the distribution of average family size across districts and landholding classes. It is observed that the average family size increases up to the semi-medium category in the Coochbehar district, but thereafter it falls. For Purba Bardhaman district, no such clear pattern is shown. But it is evident that, among marginal farmers, the average family size is much higher in Purba Bardhaman than in Coochbehar, indicating that per capita landholding is lower in Purba Bardhaman. From this result, we can infer that the condition of the marginal farmers is poorer in Purba Bardhaman district than in Coochbehar. It is also observed that there is an increasing trend in average family size across landholding classes, indicating that family size increases with greater landholding. It is observed that for marginal and medium farmers, the state average is much lower than Purba Bardhaman; for other categories, it is higher.

Table 3.4: Average Family Size across Land Holding Classes

Farmers' Class	Coochbehar	Purba Bardhaman	Overall
Marginal	3.54	5.35	4.24
Small	4.77	4.49	4.63
Semi-Medium	6.23	4.36	5.06
Medium	5	5.8	5.67

Source: Field survey 2022

3.5 Primary Occupations with Land Size Categories

Since our sample includes only farmers who have sold paddy under MSP, the primary occupation is usually self-employment in farming. Table 3.5 shows that farming is the primary occupation in Purba Bardhaman, often called the “Rice Bowl of West Bengal”. For both, the district's self-employed in non-farming activities is the second most popular occupation, and it is higher in Coochbehar. The primary occupation of most of the marginal farmers is farming in Coochbehar, and small farmers are in Purba Bardhaman. Here, it is important to note that others' occupations include all types of pensions (Govt. pension, old-age pension, Krishakbandhu, PM-Kisan, etc., whose share is quite low in both sample districts.

Table 3.5: Primary Occupations with Land Size Categories

Land Size	Coochbehar					Purba Bardhaman					Grand Total (In Numbers)
	Self-employed in farming	Self-employed in non-farming	Salaried	Wage earner in agriculture	Others incl. Pension	Self-employed in farming	Self-employed in non-farming	Salaried	Wage earner in agriculture	Others incl. Pension	
Marginal	23	14	1	0	3	20	2	1	0	3	**67**
Small	18	17	0	0	0	30	2	0	0	5	**72**
Semi-Medium	10	3	0	0	0	16	5	0	0	1	**35**
Medium	0	1	0	0	0	5	0	0	0	0	**6**
Grand Total	**51**	**35**	**1**	**0**	**3**	**71**	**9**	**1**	**0**	**9**	**180**
Percentage (%)	**56.67**	**38.89**	**1.11**	**0**	**3.33**	**78.89**	**10**	**1.11**	**0**	**10**	

Source: Field survey 2022

3.6: House Type in Number (Percentage) with Land Size Categories

Table 3.6 shows the distribution of three house types, Kutcha, Semi-Pucca, and Pucca, across districts and land holding classes. It is observed that in Coochbehar, semi-pucca houses dominate all types of houses in both districts. However, in Purba Bardhaman, most households have Pucca houses, followed by Kutcha houses. In Purba Bardhaman, most marginal and small farmers live in kutcha houses, indicating poor living conditions. Only one medium farmer in Coochbehar has a kutcha house; all five medium landholding households in Purba Bardhaman have pucca houses, indicating a clear inequality in Purba Bardhaman specifically.

Table 3.6: House Type in Number (Percentage) with Land Size Categories

Land Size	Coochbehar			Purba Bardhaman			Grand Total (In Numbers)
	Kutcha House	Semi-Pucca House	Pucca House	Kutcha House	Semi-Pucca House	Pucca House	
Marginal	16	25	0	11	6	9	67
Small	9	25	1	17	4	16	72
Semi-Medium	2	10	1	5	2	15	35
Medium	1	0	0	0	0	5	6
Grand Total	28	60	2	33	12	45	180
Percentage (%)	31.11	66.67	2.22	36.66	13.34	50	

Source: Field survey 2022

3.7 Assets Holding

Table 3.7 presents the distribution of physical assets across landholding classes and two districts. It is observed that, in the case of economically important animals such as cows, goats, and buffaloes, all land categories except medium farmers hold more on average in Coochbehar than in Purba Bardhaman. The story is almost the same for holding tractors across both districts, while the medium and overall averages in Purba Bardhaman are slightly higher. It is important to note that the only medium farmer in Coochbehar does not own any economic assets. Pump set and motorcycle holding are increasing slightly across land holding sizes in both districts, whereas television holding is almost the same in both districts across all land holding classes.

Table 3.7: Selected Assets (per household) Land size-wise (in Average)

	Assets/ Land Size	Economic animals (Cows, Buffaloes, goats, etc.)	Tractor	Pumpset (Diesel & Electric)	Motorcycle	Television
Coochbehar	Marginal	4.13	0	1.03	1	1
	Small	4.21	1	1.03	1.14	1
	Semi-Medium	5.08	1	1.09	1.27	1.09
	Medium	0	0	0	0	0
	Average	4.29	1	1.04	1.14	1.02
Purba Bardhaman	Marginal	3.16	0	1	1	1
	Small	2.89	1	1	1	1
	Semi-Medium	3.21	1	1	1.07	1
	Medium	4.75	1.5	1.5	1.4	1
	Average	3.16	1.22	1.06	1.06	1
Overall Average		3.78	1.17	1.05	1.09	1.01

Source: Field survey 2022

3.8 Source of Credit with Land Size Categories

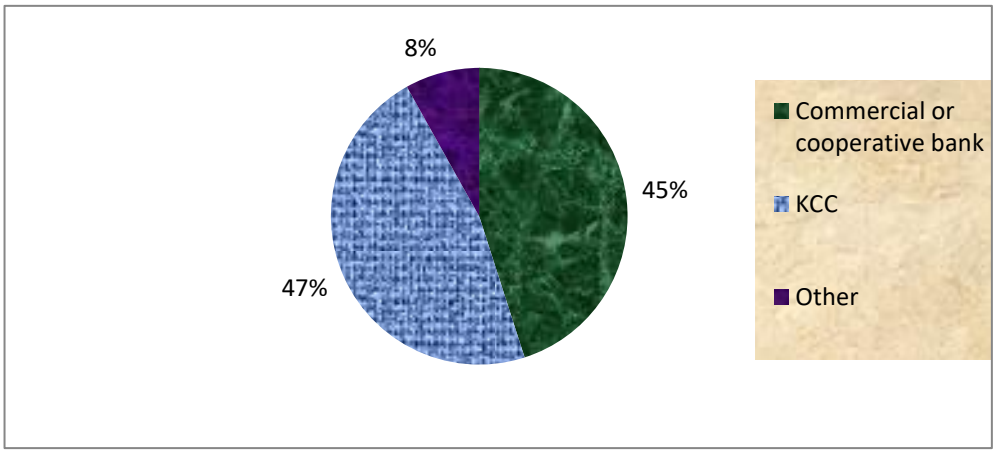
Table 3.8 shows the credit profile of the sample households. It is observed that most borrowing is done under the Kisan Credit Card facility, followed by loans from commercial or cooperative banks (Fig. 3.3). Kisan Credit Card loans are more than twice as high in Coochbehar as in Purba Bardhaman. The loan amount is increasing across landholding classes in both districts. In both districts, small farmers are borrowing at the highest interest rates, and overall, interest rates are higher in Coochbehar than in Purba Bardhaman. However, it is worth noting that the amount of non-institutional loans is significantly lower than that of institutional loans in the study area.

Table 3.8: Details of Borrowing (Institutional-Short-term or crop loan)

	Land Size	Commercial or cooperative bank	Kisan Credit Card	Others (non-institutional)	Borrowing Amount (per loanee HH)	Rate of Interest (Average)
Coochbehar	**Marginal**	5	15	3	59000	6.95
	Small	5	15	4	77292	12.21
	Semi-Medium	2	5	0	312875	8.20
	Medium	0	0	1	381000	18
	Total	**12**	**35**	**8**	**108857**	**9.89**
Purba Bardhaman	**Marginal**	11	1	0	48644	7.30
	Small	12	10	1	60896	7.46
	Semi-Medium	12	5	0	112412	7.20
	Medium	3	1	0	93750	7
	Total	**38**	**17**	**1**	**75986**	**7.31**
Overall Grand Total		**50**	**52**	**9**	**Mean=92276**	**8.28**

Source: Field survey 2022

Figure 3.3: Institutional-Short-term or crop loan



3.9 Average area Distribution and Cropping intensity of Sample HHs

It is very usual to note that the average gross cropped area and the average net cultivated area follow an increasing pattern across land-holding classes in both districts. In Coochbehar, cropping intensity is highest among medium landholders, followed by marginal farmers, whereas in Purba Bardhaman, it is highest among marginal farmers. In both districts, high cropping intensity among marginal farmers indicates greater potential for cropping on their lands. It is also evident that cropping intensity is higher in Coochbehar, revealing that more than one crop is cultivated throughout the year. In the study, it is observed that, apart from paddy, various vegetables, potatoes, and tobacco are cultivated in Coochbehar, whereas in Purba Bardhaman, Aman paddy and potatoes are most dominant.

Table 3.9: Average area Distribution and Cropping intensity

Farmer class	Coochbehar			Purba Bardhaman		
	Average Gross crop Area (Ha)	Average net Cultivated Area (Ha)	Cropping intensity	Average Gross crop Area (Ha)	Average net Cultivated Area (Ha)	Cropping intensity
Marginal	1.11	0.55	202	1.44	0.84	171
Small	2.11	1.14	185	2.41	1.57	154
Semi-Medium	3.31	2.07	160	3.67	2.29	160
Medium	11.87	5.67	209	6.56	4.28	153
Average	**1.94**	**1.05**	**185**	**2.67**	**1.68**	**159**

Source: Field survey 2022

3.10 Average Leased-in and Leased-out Area of Sample HHs

Tables 3.10 and 3.11 present the average leased-in and leased-out land profiles across landholding classes in both districts. In Coochbehar, marginal farmers are the most leased-in cultivators by number, whereas this is not true for smallholders in Purba Bardhaman. It reveals that marginal and smallholders are operating with more leased-in lands, for which their cropping intensity is higher than that of other landholding classes in both districts. It is also observed that the average holding of leased-in land is increasing across landholding classes, indicating that small and marginal farmers are taking less leased-in land but cultivating more crops.

Table 3.10: Average Land Leased in (In Hectare)

Land Size	Coochbehar		Purba Bardhaman	
	Numbers	Average (Ha.)	Numbers	Average (Ha.)
Marginal	10	0.26	7	0.31
Small	9	0.50	11	0.59
Semi-Medium	2	0.54	9	0.93
Medium	1	2.70	3	1.89
Overall Avg.		**0.49**		**0.76**

Source: Field survey 2022

Table 3.11: Average Land Leased out (In Hectare)

Land Size	Coochbehar		Purba Bardhaman	
	Numbers	Average (Ha.)	Numbers	Average (Ha.)
Marginal	4	0.39	4	1.05
Small	6	0.79	1	0.40
Semi-Medium	1	2.43	0	0
Medium	0	0	0	0
Overall Avg.		**0.79**		**0.92**

Source: Field survey 2022

It is interesting to observe in Table 3.11 that in Purba Bardhaman, most of the leased-out land came from marginal holders, with a higher average than from small holders. No semi-medium and medium holders leased out their land in Purba Bardhaman. In Coochbehar, most smallholders have leased out their land, averaging 0.79 hectares, but this average is increasing across landholding classes, which is very noticeable. Overall, the average leased-out land is higher in Purba Bardhaman than in Coochbehar.

3.11 Chapter Summary

i. Most of the farmers are small by their land holding, followed by marginal, indicating a lesser holding of agricultural land in our sample. Marginal farmers are higher in Coochbehar than in Purba Bardhaman, and the percentage of small farmers is higher in Purba Bardhaman.

ii. The maximum sample household of our study is small and marginal, indicating that farmers can sell their total produce at MSP and do not have to depend more on local markets. It is important to note that medium and large farmers are the worst sufferers in selling their paddy in MSP, as their huge production is not procured for a quota system in our sample area.

iii. Most of the sample households belong to the general category, followed by the scheduled caste and OBC. The study did not find any scheduled tribe households. It is observed that most marginal farmers in Coochbehar are from the scheduled caste, whereas most of the sample households of marginal farmers in Purba Bardhaman belong to the general category. It is also seen that the scheduled caste concentration is higher in Coochbehar than in Purba Bardhaman.

iv. It is observed that the educational attainment of most households in the sample is up to the secondary level in both the districts, Coochbehar and Purba Bardhaman. It is also observed that both the primary- and secondary-level educated are higher in Coochbehar than in Purba Bardhaman.

v. Since our sample only includes the farmers who have sold paddy in MSP, usually the primary occupation appears to be self-employed in farming. It is evident that farming is the primary occupation in Purba Bardhaman, as it is called the “Rice Bowl of West Bengal”. For both, the district's self-employed in non-farming activities is the second most popular occupation, and it is higher in Coochbehar.

vi. It is observed that the average family size is increasing till the semi-medium category for the Coochbehar district, but after that, it falls. For Purba Bardhaman district, no such clear pattern is shown. But it is evident that, among marginal farmers, the average family size is much higher in Purba Bardhaman than in Coochbehar, indicating that per capita landholding is lower in Purba Bardhaman. From this result, we can infer that the conditions of the marginal farmers are poorer in Purba Bardhaman district than in Coochbehar.

vii. It is noticed that in Coochbehar, holding of semi-pucca houses dominates over all the types of houses in both the districts. However, in Purba Bardhaman, most households have Pucca houses, followed by Kutcha houses. In Purba Bardhaman, most marginal and small farmers live in kutcha houses, indicating poor living conditions.

viii. It is observed that in the case of economic animals like cows, goats, buffaloes, etc., all the land categories except medium farmers have more animals on average in Coochbehar than Purba Bardhaman. The story is almost the same for holding tractors in both districts, while the medium and overall averages for Purba Bardhaman are slightly higher. Pump set and motorcycle holding are increasing slightly across land holding sizes in both districts, whereas television holding is almost the same in both districts across all land holding classes.

ix. It is seen that most of the borrowing is done under the facility of the Kisan Credit Card, followed by loans borrowed by commercial or cooperative banks. Kisan Credit card loans are more than twice as high in Coochbehar as in Purba Bardhaman. The loan amount is increasing across landholding classes in both districts.

x. It is very usual to note that the average gross cropped area and the average net cultivated area are following an increasing pattern across land-holding classes in both districts. In Coochbehar, cropping intensity is highest among medium landholders, followed by marginal farmers, whereas in Purba Bardhaman, it is highest among marginal farmers. In both districts, high cropping intensity among marginal farmers indicates greater potential for cropping on their lands.

xi. It is seen that in Coochbehar, marginal farmers are the most leased-in cultivators by number, whereas this story is true for small holders in Purba Bardhaman. It reveals that marginal and smallholders are operating with more leased-in land, for which their cropping intensity is higher than that of other landholding classes in both districts. It is interesting to observe in Table 3.11 that in Purba Bardhaman, most of the leased-out land came from marginal holders with a higher average than from small holders. No semi-medium and medium holders leased out their land in Purba Bardhaman. In Coochbehar, most smallholders have leased out their land, averaging 0.79 hectares, but this average is increasing across landholding classes.

CHAPTER IV
PRODUCTION AND PROCUREMENT DETAILS

4.1 Introduction

A decentralized procurement system is a very impactful policy ensured by the government that plays an essential role in the supply management and in market clearing at the grass-roots level of food grain production in Indian agriculture. The procurement system is designed to secure the 'Minimum Support Price' provided by the Government by buying food grains from producers, on the one hand, and to ensure a food buffer stock for the 'Public Distribution System' for the nation, on the other hand. Thus, this policy has a dual developmental role in a developing country like India. In this chapter, the study focuses on the Government's production and procurement status for the targeted crop, specifically Aman Paddy, produced by the sample household in West Bengal during the rainy season.

4.2 Production Details of Sample Households

West Bengal is predominantly a paddy-producing state and ranks first among all the states in India. Hence, in the procurement system, paddy is an obvious choice as the targeted crop in the state. Currently, there are primarily two types of paddy cultivated in different seasons in West Bengal: Aman Paddy (in the rainy season) and Boro Paddy (in the summer season). However, this study found that only Aman Paddy is the leading target crop for procurement in West Bengal.

4.2.1 Distribution of Land for Targeted Crops

Table 4.1.1 below describes the distribution of Aman Paddy land in the two sample districts of West Bengal. From the table, it is found that, overall, 47.94% of the total gross cropped area is distributed for the cultivation of the targeted crop, Aman Paddy, and 87.74% of the total net cropped area in Coochbehar. In the district of Purba Bardhaman, the land distribution of Aman Paddy is more than that of Coochbehar. The percentage of Aman Paddy cultivation is approximately 60.30% of the total gross cropped area, and it accounts for almost 96% of the net cropped area. The table also shows the land distribution across the size of the farming classes in both sample districts, Coochbehar and Purba Bardhaman. The table shows that the percentage distribution of land for Aman Paddy is quite similar to the overall percentage across the farmers' classes in the sample districts.

Table 4.1.1: Average area Distribution of procurement targeted crop: Paddy Cultivation

Farmer Class	Coochbehar					Purba Bardhaman				
	Average Gross Crop Area (Ha)	Average Net Crop Area (Ha)	Average paddy Cultivated Area (Ha)	% of Gross Cropped Area	% of Net Cropped Area	Average Gross crop Area (Ha)	Average net Cultivated Area (Ha)	Average paddy Cultivated Area (Ha)	% of Gross Cropped Area	% of Net Cropped Area
Marginal	1.11	0.55	0.51	45.94	91.69	1.44	0.84	0.82	57.18	98.35
Small	2.11	1.14	0.95	44.94	83.35	2.42	1.57	1.54	63.48	98.08
Semi-Medium	3.31	2.08	1.85	55.81	89.00	3.67	2.29	2.21	60.16	96.34
Medium	11.88	5.67	5.40	45.45	95.24	6.56	4.28	3.71	56.59	86.75
All	1.94	1.06	0.93	47.94	87.74	2.67	1.68	1.61	60.30	95.83

Source: Field survey 2022

4.2.2 Cost, Yield and Production of Targeted Crops

The study aims to estimate the average cost, production, and yield in the sample area. Table 4.1.2 shows that the average cost per hectare of Aman Paddy in Coochbehar is Rs. 54804/-, whereas in the sample district of Purba Bardhaman it is Rs. 54418/-, slightly lower than in Coochbehar. Across the farmer classes, the average cost is highest for Semi-Medium farmers and lowest for medium farmers in the district of Coochbehar. In the sample district of Purba Bardhaman, the cost per hectare is lower for Marginal farmers and higher for Semi-Medium farmers. Across the two sample districts, the overall cost per quintal of paddy is higher in Coochbehar (Rs. 1399.13) than in Purba Bardhaman (Rs. 1139.88).

The study estimated the average yield per hectare in both the Coochbehar and Purba Bardhaman sample districts. From Table 4.1.2, the average yield per hectare is much higher in Purba Bardhaman (47.74qts/ha) than in Coochbehar (39.17 qts/ha). This difference arises because Purba Bardhaman lies in the fertile alluvial plains of the Gangetic basin, with highly productive soils, reliable irrigation facilities, and extensive canal networks. In contrast, Coochbehar, located in northern West Bengal, faces more flood-prone conditions, less assured irrigation, and relatively sandy or less fertile soils, which limit productivity Across the size of the farming classes, the study is not able to draw any clear inference about the fundamental debate between land size and productivity, as, in table 4.1.2, it is found that the productivity is higher for medium farmers in the district of Coochbehar, but in the district of Purba Bardhaman, the productivity is highest for the marginal farmer classes for our sample.

Based on average total production, the district of Coochbehar has a total production of 36.29 quintals. For the district of Purba Bardhaman, it is about 76.56 quintals per cultivator's household. This study also found that average production increases with landholding size, as shown in Table 4.1.2, supporting the general hypothesis.

Table 4.1.2: Cost, Yield and Production of procurement targeted crop: Aman Paddy Cultivation

Farmer Class	Coochbehar				Purba Bardhaman			
	Average Cost Rs. /Ha	Average Cost Rs. /Qtl	Average Yield Qtl/Ha	Average Total Production (Qtl)	Average Cost Rs. /Ha	Average Cost Rs. /Qtl	Average Yield Qts/Ha	Average Total Production (Qts)
Marginal	54488	1380.49	39.47	19.84	53354	1043.90	51.11	42.64
Small	54829	1381.08	39.70	37.31	54313	1222.16	44.44	68.59
Semi-Medium	55934	1542.58	36.26	68.83	55761	1116.11	49.96	109.33
Medium	52241	1119.13	46.68	252.00	54820	1225.03	44.75	167.80
All	54804	1399.13	39.17	36.29	54418	1139.88	47.74	76.56

Source: Field survey 2022

4.2.3 Uses of Targeted Crops

Table 4.1.3: Uses of procurement targeted crop: Paddy in sample household

Farmer Class	Coochbehar			Purba Bardhaman		
	Average Total Production Qts (%)	Average Consumption Qts (%)	Average Marketable Qts (%)	Average Total Production Qts (%)	Average Consumption Qts (%)	Average Marketable Qts (%)
Marginal	19.84 (100.00)	5.54 (27.91)	14.30 (72.09)	42.64 (100.00)	1.12 (2.62)	41.52 (97.38)
Small	37.31 (100.00)	10.00 (26.82)	27.30 (73.18)	68.59 (100.00)	2.01 (2.93)	66.58 (97.07)
Semi-Medium	68.83 (100.00)	14.46 (21.01)	54.37 (78.99)	109.33 (100.00)	1.64 (1.50)	107.69 (98.50)
Medium	252.00 (100.00)	0.00 (0)	252.00 (100.00)	167.80 (100.00)	3.60 (2.15)	164.20 (97.85)
All	36.29 (100.00)	8.50 (23.42)	27.79 (76.58)	76.56 (100.00)	1.75 (2.29)	74.81 (97.71)

Source: Field survey 2022

Table 4.1.3 depicts the pattern of use of targeted procuring crops, i.e., Aman Paddy, in both the sample districts. In the district of Coochbehar, overall, 23.42 percent of the total production is used for consumption purposes, while the remaining 76.58 percent is sold in the market. On the other hand, in the district of Purba Bardhaman, the average use as consumption is significantly lower (only 2.29 percent), and almost 97.71 percent of total production is treated as marketable surplus and sold in various markets, including CPCs.

4.3 Disposal Pattern of Sample Households and Procurement Details

Crop disposal is the most important issue for crop growers, as it ultimately generates revenue from cultivation. The appropriate market price of the crop is essential to generate sufficient revenue for crop growers. In this section, the study focuses on the marketing pattern for the targeted crop, Aman Paddy, and the prices received by crop growers in the market. To understand the role of procurement centres as market-clearing agents and supply chain management tools, this study will compare their operational activities as marketing channels with those of the local market. The following section describes the existing operational activities of the procurement centres.

4.3.1 Disposal Pattern of Procurement Targeted Crop: Aman Paddy in Sample Household

In Table 4.2.1, it is found that overall 48.72 percent of the total disposal quantity of Aman Paddy is sold in the Central Procurement Centre (CPC), and the remaining 52.28 percent of the quantity of Aman Paddy is sold in the Local Market in the district of Coochbehar. On the other hand, overall, 63.71 percent of the total disposal quantity of Aman Paddy is sold at the Central Procurement Centre (CPC), and the remaining 36.29 percent quantity is sold in Local Markets in the district of Purba Bardhaman.

Across the farmer's class, it is found that almost 74.13 percent of the total sale quantity of Aman Paddy of Marginal farmers is sold in the CPC and the rest of the output is sold in the local market in the district of Coochbehar, and it is 49.05 percent, 38.20 percent, and 7.94 percent for Small, Semi-medium and Medium class farmers, respectively. Similarly, in the district Purba Bardhaman, the percentage of CPC quantity sold to total sales is 73.10%, 74.18%, 56.07%, and 42.02%, respectively, for Marginal. Small. Semi-Medium and Medium class farmers.

From the above discussion, the study found two important observations. The most concerning aspect at first is that, as landholding size increases, the sale quantity in CPC decreases dramatically in both the district of Coochbehar and the district of Purba Bardhaman. Between the two districts, the situation is more pathetic in Coochbehar. The main reason is the system of rationing the sellable quantity (quota) among

farmers, irrespective of the size of the farming class. i.e. his or her land amount. The CPC has set a sales quantity limit for all farmer classes. Hence, in the present CPC procurement system, a marginal farmer with low production can sell almost the same quantity of output as a medium or large farmer. In these circumstances, large farmers with high production are unable to sell their output through CPCs.
Secondly, CPC operational activities are better in Purba Bardhaman than in Coochbehar.

Table 4.2.1: Disposal Pattern of procurement targeted crop: paddy in sample household

Farmer Class	Coochbehar			Purba Bardhaman		
	Total Marketable Qts (%)	Sold in CPC Qts (%)	Sold in the Local Market Qts (%)	Total Marketable Qts (%)	Sold in CPC Qts (%)	Sold in the Local Market Qts (%)
Marginal	14.30 (100.00)	10.60 (74.13)	3.70 (25.87)	41.52 (100.00)	30.35 (73.10)	11.17 (26.90)
Small	27.30 (100.00)	13.39 (49.05)	13.91 (50.95)	66.58 (100.00)	49.39 (74.18)	17.19 (25.82)
Semi-Medium	54.37 (100.00)	20.77 (38.20)	33.60 (61.80)	107.69 (100.00)	60.38 (56.07)	47.31 (43.93)
Medium	252.00 (100.00)	20.00 (7.94)	232.00 (92.04)	164.20 (100.00)	69.00 (42.02)	95.20 (57.98)
All	27.79 (100.00)	13.26 (48.72)	14.53 (52.28)	74.81 (100.00)	47.66 (63.71)	27.15 (36.29)

Source: Field survey 2022

4.3.2 Selling Price of Procurement Targeted Crop: Paddy in Different Markets

In this section, the study aims to demonstrate the price variation in CPC and local markets within the study area. From Table 4.2.2, we can see that the average price per quintal of Aman Paddy is the same at Rs. 1888/- in CPC in both districts. It is noted that the central procurement price is set nationally at Rs. 1868/- per quintal, and the West Bengal state government is providing an additional Rs. 20 per quintal as an incentive (Utsaha Bhata) to promote farmers' sales of CPC. The price is unique among all CPC operation centres in the state. The local market price of Aman Paddy is the prevailing rate for trading and varies depending on the various marketing mechanisms. Here, the study calculated the price margin of the local market from the CPC price, i.e., the price margin equals the CPC price minus the local market price. The table shows that the average price margin per quintal for Aman Paddy is Rs. 505.54/- in the district of Coochbehar, and Rs. 403.15/- in the district of Purba Bardhaman. This clearly indicates the price benefits to farmers from selling in CPC rather than local markets. The table also shows that the overall local market price of Aman Paddy per quintal is lower in the Coochbehar district than in Purba Bardhaman. Across farmer sizes, the local market price for medium farmers is highest in both districts; hence, their price margin is lowest.

4.2.2 Selling Price of Procurement Targeted Crop: Paddy in Different Markets

Farmer Class	Coochbehar			Purba Bardhaman		
	Price Received from CPC (Price/Qts)	Price Received from Local Market (Price/Qts)	*Price Margin (Rs. / Qts)	Price Received from CPC (Price/Qts)	Price Received from Local Market (Price/Qts)	*Price Margin (Rs. / Qts)
Marginal	1888.00	1384.38	503.63	1888.00	1466.67	421.33
Small	1888.00	1376.67	511.33	1888.00	1479.29	408.71
Semi-Medium	1888.00	1362.50	525.50	1888.00	1494.52	393.48
Medium	1888.00	1750.00	138.00	1888.00	1530.00	358.00
All	1888.00	1382.46	505.54	1888.00	1484.85	403.15

***Source*:** Field Survey 2021 *CPC Price – Local Market Price

4.3.3 Selling Cost in CPC of Targeted Crop: Paddy in Different Markets

Selling cost is the cost incurred by the producers or sellers to sell the output in the market. Lower selling costs indicate better market conditions for sellers, which makes the market more efficient. In the current market situation, labour, transportation, weight-related costs, market taxes/levies, etc., are common costs farmers incur when selling their products. In the CPC, the study found no market tax/levy or cost for weight but finds some other type of costs, cost of bags (the farmers must sell along with their bag. Hence, they need to buy bags for selling their crop Aman Paddy in CPC) and cost of percentage loss per quintal in terms of quality of paddy, i.e., cost of weight loss for moisture and quality of paddy.

In the following tables 4.2.3 and 4.2.4, all costs associated with the sale of the targeted procurement crop, Aman Paddy, are presented for the CPC and local markets, respectively. Table 4.2.3 describes the cost pattern for sample farmers selling their output in the CPC. The table shows that the overall selling cost is about Rs. 236/- per quintal in Coochbehar and about Rs. 197/- per quintal in Purba Bardhaman. Among the total selling costs, the cost of weight loss is higher in both districts. Comparing the two districts, it is found that a bag costs only in the Coochbehar district, whereas in Purba Bardhaman, such a cost is not observed. Among the farmers' class, the study found that selling costs are relatively lower for Medium-Class farmers in both districts and highest for Semi-Medium farmers in the district of Coochbehar. In contrast, in the district of Purba Bardhaman, the Marginal farmers face the highest cost of selling their crops in CPC.

Apart from the CPC, Table 4.2.4 shows the selling cost in the Local Market for the targeted crop, Aman Paddy. The table shows that the average selling cost per quintal in the district of Coochbehar is

around Rs. 60/-, whereas it is Rs. 46/- per quintal in the district of Purba Bardhaman. Among total marketing costs, about 79 percent is for transportation, and about 21 percent is for taxes or commissions to enter the market in the district of Coochbehar. It is found that the commission or tax required to enter the market is highest for Marginal farmers and decreases as landholding size increases. The cost is observed to be zero for the highest class of farmers, Semi-Medium, in the district of Coochbehar. On the other hand, in the district of Purba Bardhaman, no market taxes or commissions are observed in the sample study, and all marketing costs in the Local Market are incurred for transportation to the market.

Compared with marketing or selling costs, the overall average cost per quintal of Aman Paddy in CPC is almost 4 times higher than in the Local Market in both the sample districts of West Bengal. The costs, such as bag costs and quality-related weight loss due to moisture, are found only in CPC, whereas taxes and commissions in the market are found only in the Local Market. Transportation costs are common costs incurred by farmers when selling in both markets.

The cost of weight loss for moisture and the quality of paddy for both the district and the cost of the bag in the district of Coochbehar are the main contributors to increasing marketing cost in the CPC than the Local Market. This cost reduces the realization of the price benefit from the CPC and is the main obstacle in getting the optimum benefit from the CPCs.

4.2.3 Cost of procurement targeted crop: Paddy in CPC

Farmer Class	Coochbehar						Purba Bardhaman					
	Labour Cost	Transportation cost	Cost of Bags	Cost of Weight Loss	Taxes /Commission in the Market	Total Cost (Rs/Qtrs.)	Labour Cost	Transportation	Cost of Bags	Cost of Weight Loss	Taxes /Commission in the Market	Total Cost (Rs/Qtrs.)
Marginal	13.10 (5.69)	47.65 (20.69)	48.24 (20.94)	121.34 (52.68)	0 (0.00)	230.33 (100.00)	4.38 (1.94)	55.77 (24.67)	0 (0.00)	165.93 (73.39)	0 (0.00)	226.08 (100.00)
Small	15.91 (6.75)	43.84 (18.61)	48.00 (20.37)	127.84 (54.27)	0 (0.00)	235.60 (100.00)	5.43 (2.75)	50.95 (25.77)	0 (0.00)	141.34 (71.48)	0 (0.00)	197.72 (100.00)
Semi-Medium	18.62 (7.32)	56.42 (22.16)	55.38 (21.75)	124.17 (48.77)	0 (0.00)	254.60 (100.00)	3.91 (2.36)	55.68 (33.54)	0 (0.00)	106.41 (64.10)	0 (0.00)	166.01 (100.00)
Medium	10.00 (4.78)	50.00 (23.89)	36.00 (17.20)	113.28 (54.13)	0 (0.00)	209.28 (100.00)	4.40 (2.54)	54.00 (31.11)	0 (0.00)	115.17 (66.35)	0 (0.00)	173.57 (100.00)
All	14.95 (6.35)	47.46 (20.14)	49.04 (20.81)	124.19 (52.70)	0 (0.00)	235.65 (100.00)	4.70 (2.39)	53.67 (27.27)	0 (0.00)	138.45 (70.34)	0 (0.00)	196.82 (100.00)

Source: Field survey 2022

4.2.4 Cost of procurement targeted crop: Paddy in the Local Market

Farmer Class	Coochbehar						Purba Bardhaman					
	Labour Cost	Transportation	Cost of Bag	Cost of Weight Loss	Taxes /Commission in Market	Total Cost (Rs/Qts)	Labour Cost	Transportation	Cost of Bag	Cost of Weight Loss	Taxes /Commission in Market	Total Cost (Rs/Qts)
Marginal	0 (0.00)	43.30 (74.59)	0 (0.00)	0 (0.00)	14.75 (25.41)	58.05 (100.00)	0 (0.00)	35.00 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	35.00 (100.00)
Small	0 (0.00)	45.58 (78.14)	0 (0.00)	0 (0.00)	12.75 (21.86)	58.33 (100.00)	0 (0.00)	48.33 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	48.33 (100.00)
Semi-Medium	0 (0.00)	60.00 (93.70)	0 (0.00)	0 (0.00)	4.03 (6.30)	64.03 (100.00)	0 (0.00)	50.00 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	50.00 (100.00)
Medium	0 (0.00)	50.00 (100.00)	0 (0.00)	0 (0.00)	0.00 (0.00)	50.00 (100.00)	0 (0.00)	50.00 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	50.00 (100.00)
All	0 (0.00)	47.01 (78.85)	0 (0.00)	0 (0.00)	12.61 (21.15)	59.62 (100.00)	0 (0.00)	46.00 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	46.00 (100.00)

Source: Field survey 2022

4.4 Procurement System and Local Economy

Procurement plays an important role in marketing clearance at the village level and serves as a major alternative marketing channel, enabling farmers to sell their products directly to procurement centres. The procurement centre's selling price is also relatively higher than the local market price, as it ensures the Minimum Support Price (MSP) for the crops. So, it leads to higher crop revenue and gives farmers greater economic benefits. Table 4.3.1 below shows that the above discussion about the procurement centres benefited farmers by providing more incentives for crop salesAs shown in Table 4.3.1, the study calculated the Input-Output ratio (I-O Ratio), i.e., the ratio of realized output received for one rupee invested as input. The table shows that the overall average I-O ratio at CPC in the Coochbehar district is about 1.26, indicating that for every rupee invested in agriculture, the return is 1.26 rupees. In Purba Bardhaman district, the I-O ratio is 1.61, higher than that of Coochbehar district. Compared with the CPC and Local Market, the I-O ratio in the district of Coochbehar is below one, indicating that for every one rupee invested in agriculture, it returns only 92 paisa, i.e., less than the input cost. The result clearly indicates a loss for farmers who sell their products in the Local Market in the district of Coochbehar. On the other hand, in Purba Bardhaman district, the I-O ratio is 1.27, which is lower than that in CPC. Thus, based on this discussion, the study concludes that CPC, as a marketing channel, plays a crucial role in generating income from agricultural activities in both Coochbehar and Purba Bardhaman districts.

Table 4.3.1 Input-Output Ratio (I-O Ratio) of Targeted crop: Paddy in Different Markets

Farmer Class	Coochbehar					Purba Bardhaman				
	Input Cost/Qts	Output Price/Qts in CPC	Output Price/Qts in Local Market	I-O Ratio in CPC	I-O Ratio in Local Market	Input Cost/Qts	Output Price/Qts in CPC	Output Price/Qts in Local Market	I-O Ratio in CPC	I-O Ratio in Local Market
Marginal	1462.27	1888.00	1384.38	1.29	0.95	1052.14	1888.00	1466.67	1.79	1.39
Small	1457.63	1888.00	1376.67	1.30	0.94	1254.47	1888.00	1479.29	1.51	1.18
Semi-Medium	1747.80	1888.00	1362.50	1.08	0.78	1146.17	1888.00	1494.52	1.65	1.30
Medium	1119.05	1888.00	1750.00	1.69	1.56	1273.57	1888.00	1530.00	1.48	1.20
All	1497.89	1888.00	1382.46	1.26	0.92	1170.61	1888.00	1484.85	1.61	1.27

I-O Ratio = Output Price/Input Cost; Indicating Earnings per Rupee Investment.

4.5 Chapter Summary

i. This study found that only Aman Paddy is the leading targeted crop for procurement in West Bengal. Overall, the total gross cropped area and the total net cropped area are higher in Purba Bardhaman than in Coochbehar for Aman Paddy. Thus, it is found that the land distribution for targeted crops, such as Aman Paddy, in the district of Purba Bardhaman is more than in the district of Coochbehar.

ii. Across the two sample districts, it is found that the overall cost per quintal of paddy is higher in the district of Coochbehar than in Purba Bardhaman. It is also found that the average yield per hectare is much higher in Purba Bardhaman than in Coochbehar across all farmer classes.

iii. The study cannot draw any inferences about the fundamental debate between land size and productivity. Productivity is higher among medium farmers in the district of Coochbehar, but in the district of Purba Bardhaman, it is highest among marginal farmers.

iv. It is observed that overall, the total disposal quantity of Aman Paddy sold in the Central Procurement Centre (CPC) in the district of Coochbehar is higher than in the district of Purba Bardhaman.

v. The most concerning aspect is that, as the size of land holdings increases, the sale quantity in CPC decreases drastically in both districts of Coochbehar and Purba Bardhaman. Among the two districts, the situation is more pathetic in Coochbehar. The main reason is the system of rationing the sellable quantity among farmers, irrespective of the size of the farming class. The CPC has set a universal quantity limit (Quota) for all farming classes. Hence, in the present CPC procurement system, a marginal farmer with low production can sell almost the same quantity of output as a medium or large farmer. In these circumstances, large farmers with high production values are unable to sell their entire output in CPC.

vi. The average selling price per quintal of Aman Paddy is found at Rs. 1888 /- in CPC in both districts. Here, the study found that the central procurement price is set nationally at Rs. 1868/- per quintal, and the state government of West Bengal provides an additional Rs. 20 per quintal as an incentive (UtsahaBhata) to promote farmers' sales in CPC. The price is unique in all CPC operations in the state.

vii. The average price margin per quintal is higher for Aman Paddy in the district of Coochbehar than in Purba Bardhaman, which indicates the price benefits to the farmers from selling in CPC than in the Local Markets, and which is in favour of Purba Bardhaman in terms of price margin.

viii. The study also found that the overall local market price of Aman Paddy per quintal is lower in the Coochbehar district than in Purba Burdhaman. Across the size of farming classes, it is observed that the local market price for medium farmers is highest in both districts; hence, the price margin is lowest for these farmers.

ix. In the CPC, the study found no market tax/levy or cost for weight but finds some other type of costs, cost of bags (the farmers have to sell along with their bag; hence, farmers need to buy the bag for selling their crop in CPC) and cost of percentage loss per quintal in terms of quality of paddy, i.e., cost of weight loss for moisture and quality of paddy.

x. The study found that the overall selling cost of Aman Paddy in CPC is higher in Coochbehar than in Purba Bardhaman. Among the total selling costs, the cost of weight loss is the highest in both districts. It is also found that a bag costs only in the Coochbehar district, whereas in Purba Bardhaman, such costs are not observed. Among the farmer sizes, the study found that selling costs are relatively lower for Medium-Class farmers in both districts and highest for Semi-Medium farmers in the district of Coochbehar. In contrast, in Purba Bardhaman district, marginal farmers face the highest cost of selling their crops in the CPC.

xi. From the study, it is evident that the average selling cost per quintal in the Local Market is very much lower than the CPC. Comparing the two districts, the average selling cost in the Local Market of Coochbehar district is higher than that in Purba Bardhaman district. Among these, most of the cost is incurred for transportation, followed by taxes or market commissions in the Coochbehar district, where it is found that the commission or taxes in the market are highest for Marginal farmers, and it reduces as land holding size increases, and the cost is observed to be zero for the highest class of farmers, i.e., Semi-Medium in the district of Coochbehar. On the other hand, in the district of Purba Bardhaman, no market taxes or commissions are observed in the study area, and all marketing cost in the Local Market is incurred for transportation to the market.

xii. It is found that the overall average selling cost per quintal of Aman Paddy in CPC is almost four times higher than the Local Market in both the sample district of the state of West Bengal. The costs, such as bag costs and quality-related weight loss due to moisture, are found only in CPC, whereas taxes or commissions in the market are found only in the Local Market. The cost of moisture-induced weight loss and the quality of paddy, as well as the cost of bags in the district of Coochbehar, are the main factors contributing to higher marketing costs in the CPC compared to the Local Market. This cost reduces the realization

of the price benefit from the CPC and is the main obstacle to getting the optimum benefit from the CPC.

xiii. Comparing two districts, CPC's operations are more efficient in Purba Bardhaman than in Coochbehar in West Bengal. The study also found that the profitability from Aman Paddy is higher in Purba Bardhaman than in Coochbehar. With these findings, the study concludes that CPC efficiency can increase the benefits from the cultivation and play a significant role in economic development in the rural agrarian sector.

CHAPTER V
CONSTRAINTS AND PERCEPTIONS

5.1 Introduction

Decentralized procurement schemes for paddy and wheat are considered an important pillar of the Indian Agricultural Price Policy. The main goal of this scheme is to provide price security to farmers. The support prices are encouraging farmers nationwide to grow crops. In this study, we examine how farmers are aware of the MSPs of the crops they grow. It is to be noted that the constraints to marketing farm produce by farmers are presented by the farmer category. The crop selected for the study was paddy. Various suggestions from farmers to address the problems they face are also listed in this section. Details of the problems farmers face in marketing their produce, by category, along with suggestions to address them, are presented below.

5.2 Perceptions of farmers about Procurement

Respondents' perceptions are classified according to different MSP criteria. Table 5.1 presents the critical areas perceived by farmers regarding MSP, including awareness of MSP, awareness of the quality parameters prescribed for the procurement of Paddy, predictability of procurement, delays in procurement, delays in receipt of payment, etc. Table 5.1 shows the problems faced by paddy farmers in West Bengal during the marketing of their produce, categorised by type. It is found that medium farmers are more aware of MSP, followed by semi-medium, medium, and small, respectively, which is not unusual. Awareness of quality parameters and the predictability of Government procurement also show a similar pattern, revealing that the MSP pushes farmers to be aware of quality judgments and the certainty of Government procurement by the competent authority. It is found that across all classes of farmers, most are facing delays in government procurement, i.e., beyond 15 days of harvesting, and a very small percentage sell within 15 days. About 34 percent (within a week) of semi-medium farmers faced delayed payment and exploitation by market intermediaries, and about 94 percent faced delayed paddy procurement. It was also observed that about 87 percent and 85 percent of the small and marginal farmers, respectively, faced delayed procurement while marketing paddy in West Bengal markets. So, it is shown that procurement hit the most semi-medium farmers, followed by the small, which does not follow a normal tendency; as in any that followed small and semi-medium, found no tendency.

Table 5.1: Perceptions of farmers about Procurement Land Size-wise (In %)

Perceptions	Criteria of response	Marginal	Small	Semi-Medium	Medium	Grand Total
Awareness of the MSP	Yes	16.42	16.66	22.85	66.67	19.45
awareness of the quality parameters prescribed for the procurement of wheat and Paddy	Yes	31.34	34.72	62.86	83.34	40.56
Predictability of Government Procurement, if any	Yes	79.10	80.56	97.14	100	83.89
Delay in government procurement	Within 7 days of harvesting	5.97	2.78	2.86	0	3.89
	Within 15 days of harvesting	8.96	9.72	2.86	0	7.78
	Beyond 15 days of harvesting	85.07	87.50	94.28	100	88.33
Delay in the receipt of payment on time	Within 3 days	58.20	62.50	57.14	33.33	58.89
	Within a week	32.83	31.94	34.28	66.67	33.89
	Within a month	2.98	4.17	2.86	0	3.33
	More than a month	5.97	1.39	5.71	0	3.89
Procurement's effect on the area under targeted crops	Yes	44.78	58.33	45.71	66.67	51.11

Source: Field survey 2022

In Table 5.1, it was observed that the majority of marginal farmers (about 83.58 percent) were unaware of the MSP, and only 31.34 percent were aware of the quality parameters prescribed for paddy procurement. In the case of a medium farmer, the awareness percentage regarding MSP and the quality parameters is approximately 66.67 percent and 100 percent, respectively. And 83.89 percent of farmers are hopeful that they will give paddy to centralized procurement centres (CPCs) in the upcoming year. Additionally, we have observed that 51.11 percent of farmers believe that paddy procurement affects the local cropping pattern. One crop in their cropping scheme must be paddy. So, it is true that every farmer faces challenges when marketing paddy in the CPCs. These problems have defeated the very purpose of the Government's monopoly procurement system, as it has miserably failed to ensure fair and remunerative prices for farmers.

5.3 Production Problems and Marketing Problems

The results of the analysis of the farmer opinion survey conducted in the research area show that the farmers had numerous difficulties when trying to sell their paddy to the Centralized Procurement Centre (CPCs). To understand the depth of the problems in detail, the farmers were divided into four groups: marginal, small, semi-medium, and medium. Farmers facing different types of problem like deduction percentage of paddy is more with respect to quality which was called as 'Khad' in local term, not getting serial number at procurement centre due to long waiting list, interference of middleman and local political leaders, delay in procurement process, facing different problems during card renewal, taken less quantity of paddy according to field size, etc. The problems of the farmers are listed in Table 5.2, which arose during the primary survey.

From Table 5.2, it can be understood that the need for provisioning assistance of good-quality seedlings in sufficient quantity (77.78%) is the first and foremost major problem of all the paddy producers, irrespective of the size of their land holdings in the study area. The existence of middlemen problems (68.89%) and not getting a remunerative price for produce in the local market (74.44%) were the problems reported by marginal and small, semi-medium, and medium farmers. On the other hand, credit availability facilities (28.33%) are a minor problem across all four farmer classes because most farmers did not want to take a loan from a bank (commercial, co-operative, or industrial). Table 5.2 shows that marginal and small farmers faced the same problem, whereas medium farmers did not. Except for the problem of credit facilities, the semi-medium and medium farmers were the worst-affected group in terms of numbers, compared to the marginal and small farmers. It doesn't mean that the marginal and small farmers were not as affected as the other group. Most marginal (76.12%) and small farmers (80.56%) have difficulty obtaining sufficient quantities of high-quality seedlings. Small farmers are having issues securing a fair price for their goods on the local market (76.39%) and with intermediaries and middlemen taking advantage of them (68.06%). The lack of appropriate supplies of high-quality seedlings and the inability to obtain a fair price for their output on the local market, respectively, were problems that affected about 71.43 percent and 80 percent of semi-medium farmers.

Table 5.2: Production Problems and Marketing Problems (In Percentage)

Land Size	Production Problem		Marketing problems	
	Need for provisioning assistance of good quality seedlings in sufficient quantity (High)	**Availability of credit facilities (High)**	**Problems in not getting a remunerative price for produce in the local market (High)**	**Cheating by middlemen (High)**
Marginal	51 (76.12)	20 (29.85)	45 (67.16)	47 (70.15)
Small	58 (80.56)	23 (31.94)	55 (76.39)	49 (68.06)
Semi-Medium	25 (71.43)	7 (20.00)	28 (80.00)	24 (68.57)
Medium	6 (100.00)	1 (16.67)	6 (100.00)	4 (66.67)
Grand Total	**140 (77.78)**	**51 (28.33)**	**134 (74.44)**	**124 (68.89)**

Source: Field survey 2022

5.4 Sources of Awareness

MSP serves as a safety net for farmers because the government reduces other risks through agricultural insurance schemes. The farmer must be aware of the MSP for the crops they grow so they can refuse to sell the produce at a price below the MSP. Table 5.3 presents the percentages of sources of awareness of the latest technical knowledge, the practice package, etc. Among farmers who benefited in various ways, the table shows that about 25.56 percent of marginal farmers and 25 percent of small farmers have gained awareness and knowledge, as well as various kinds of help from Krishi Prayukti Sahayak (KPS) or Assistant Director of Agriculture (ADA). We can see from this table that most individuals learn from KPS and ADA. The Krishi Vigyan Kendra (KVK) and Kisan Call Centre (KCC) have little impact on the dissemination of advanced farming techniques. Over 23.89 percent of farmers are joined with different kinds of governmental agricultural support systems, where they may learn about the uses, dosages, and best times to use pesticides, insecticides, and fertilisers, and have access to various agricultural assistance programmes and keep up with the prices of various agricultural crops.

Table 5.3: Sources of Awareness of farmers with the latest technical knowledge, and kind of help in augmenting production from other sources (In %)

Land Size	KGK/KVK	Call centres	Others (ADA+KPS)	Grand Total (In Numbers)
Marginal	0	1.64	25.56	**18**
Small	0	0	25	**18**
Semi-Medium	0	0	20	**7**
Medium	0	0	0	**0**
Grand Total	0	0.55	23.33	**43**

Source: Field survey 2022

5.5 Chapter Summary

i. The medium farmers are more aware of the MSP, followed by semi-medium, medium and small, respectively, which is not very unusual.

ii. About 34 percent (within a weak margin) of the semi-medium farmers faced the problem of delayed payment and exploitation by market intermediaries, and about 94 percent of them faced the problem of delayed procurement of paddy.

iii. And about 87 percent and 85 percent of the small and marginal farmers, respectively, faced the problem of delayed procurement while marketing paddy in the markets of West Bengal.

iv. The majority of the marginal farmers, about 83.58 percent, were not concerned about awareness of the MSP, and only 31.34 percent of marginal farmers were aware of the quality parameters prescribed for the procurement of paddy.

v. About 83.89 percent of farmers are hopeful that they will give paddy to centralized procurement centres (CPCs) in the upcoming year.

vi. We have observed that 51.11 percent of farmers believe that the procurement of paddy affects the cropping pattern in the local region.

vii. Farmers facing different types of problem include high deduction percentage of paddy with respect to quality which is called as 'Khad' in local term, difficulty in getting serial number at procurement centre due to long waiting list, interference of middleman and local political leaders, delay in procurement process, facing different problems during card renewal, selling less quantity of paddy according to field size, etc.

viii. The need for provisioning assistance of good-quality seedlings in sufficient quantity (77.78%) is the first and foremost major problem of all the paddy producers, irrespective of the size of their land holdings in the study area.

ix. Existence of middlemen problems (68.89%) and not getting remunerative price for produce in local market (74.44%) were the problems accounted for by marginal and small, semi-medium, and medium farmers.

x. Most marginal (76.12%) and small farmers (80.56%) have trouble with not getting good quality seedlings in sufficient quantity.

xi. Small farmers are having issues with securing a fair price for their goods on the local market (76.39%) and intermediaries and middlemen (68.06%) taking advantage of them.

xii. The Krishi Vigyan Kendra (KVK) and Kisan Call Centre have little effect on the dissemination of farming-related information, advice and new farming techniques.

xiii. About 25.56 percent of marginal farmers and 25 percent of small farmers are gaining awareness and knowledge, and different kinds of help from Krishi Prayukti Sahayak (KPS) or Assistant Director of Agriculture (ADA).

CHAPTER VI
SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

6.1 Summary and Conclusion

West Bengal is a major rice-producing state in India, accounting for about 14% of the country's total rice production. Rice procurement in West Bengal is the sole responsibility of the State Government (wb.food.gov.in), unlike in other states, where both central and state agencies are involved. The amount of paddy procured in West Bengal has increased significantly since 2013-14, with the state government purchasing 94-97% of the total paddy, and the rest being procured by the FCI. West Bengal's procurement contribution has increased from approximately 6.91% in 2013-14 to 17% in 2020-21, making it one of the states where the lowest proportion of production is procured.

The study shows that the percentage of sub-marginal farmers in Coochbehar district is higher than in Purba Bardhaman, while the percentage of marginal farmers is roughly the same in both districts. The cropping intensity in Coochbehar district is higher than in Purba Bardhaman, despite the latter having more irrigated area, due to the availability of the irrigation system and the inclusion of cash crops like tobacco in Coochbehar's cropping patterns. Aman paddy covers a higher percentage of the total paddy cultivated area in Coochbehar district than in Purba Bardhaman district. The gross cropped area in Purba Bardhaman district increased from 2019-20 to 2020-21, while it declined in Coochbehar district due to floods during Aman rice transplanting and precipitation just before harvest. Better irrigation facilities are available in Purba Bardhaman district, resulting in a higher percentage of land under Boro paddy than in Coochbehar district.

The study finds that Aman Paddy is the leading targeted crop for procurement in West Bengal, and the land distribution to this crop is higher in Purba Bardhaman than in Coochbehar. The overall cost per quintal of paddy is higher in Coochbehar than in Purba Bardhaman, but the average yield per hectare is much higher in Purba Bardhaman. The study also identifies the main reasons why large farmers with high production values are unable to sell their entire output at the central procurement centre (CPC).

Furthermore, the study reveals that the average selling price per quintal of Aman Paddy in CPC is higher than the local market price, but the overall selling cost of Aman Paddy in CPC is also higher than the local market, and the cost of weight loss is the highest. In addition, the study finds that there are no market taxes or commissions in the district of Purba Bardhaman, and all marketing costs in the local market are incurred for transportation to the market.

The level of awareness about MSP among farmers is higher among medium farmers compared to small and marginal farmers. Delayed payments, delayed paddy procurement, and exploitation by market intermediaries are major problems faced by semi-medium farmers. Small and marginal farmers also face delayed procurement and the problem of not receiving a fair price for their produce in the local market. The existence of middlemen is a significant problem for them. The provision of high-quality seedlings in sufficient quantity is the most pressing issue for all farmers, regardless of landholding size. The Krishi Vigyan Kendra (KVK) and Kisan Call Centre have little effect on disseminating farming-related information and new farming techniques. However, marginal and small farmers gain awareness and knowledge, as well as various kinds of support from Krishi Prayukti Sahayak (KPS) or Assistant Director of Agriculture (ADA).

6.2 Policy Recommendations

Based on the findings of this study and concluding observations, the following recommendations and policy suggestions are proposed:

Improving irrigation facilities: As mentioned before, Purba Bardhaman district has better irrigation facilities, resulting in higher yields and a higher percentage of land under Boro paddy than in Coochbehar district. The government can invest in improving irrigation facilities in areas with lower cropping intensity to boost yields and productivity.

Addressing issues faced by small and marginal farmers: Small and marginal farmers face several challenges, including delayed payments, delayed procurement, failure to receive a fair price for their produce in the local market, and exploitation by middlemen. The government can take steps to address these issues by ensuring timely payments and procurement, promoting farmer-producer organizations, and providing farmers with access to better markets and pricing information.

Awareness about MSP: Awareness of MSP is higher among medium farmers than among small and marginal farmers. The government can increase awareness of MSP among farmers by making them frequently visit the Krishi Vigyan Kendra (KVK) and the Assistant Director of Agriculture (ADA) office, and by meeting with the Krishi Prayukti Sahayak (KPS), Assistant Technology Manager (ATM), and Block Technology Manager (BTM). The government should also organize awareness campaigns and training programs.

Improving dissemination of farming-related information: The Krishi Vigyan Kendra (KVK) and Kisan Call Centre have little effect on disseminating farming-related information and new

advanced farming techniques. The government can invest in improving the effectiveness of these institutions or exploring alternative means of disseminating farming-related information, such as through mobile applications and social media. All of these also help reduce production costs by incorporating advanced farming techniques and technologies, and, on the other hand, increase production, productivity, and net farm income on a sustained basis.

Addressing a transparent system: The government will aim to achieve significant milestones in reforming the DCP system by adding advanced technology and software and making it more transparent and leak-proof. Through efficient data mining and the confluence of technologies and software, it is possible to make a people-centric, engaging, and responsive administration. Whatever the policy, the government must build consensus and lay the groundwork for its successful implementation.

Encouraging crop diversification: The study finds that cash crops, such as tobacco, are included in Coochbehar's cropping patterns, thereby contributing to higher cropping intensity. The government can encourage crop diversification by promoting other cash crops suitable to the region and by providing farmers with access to markets and pricing information.

Addressing weight loss costs: The study finds that the cost of weight loss is the highest in the selling cost of Aman Paddy in CPC. The government can address this issue by investing in improved storage and transportation facilities, reducing the cost of weight loss, and ensuring that farmers receive fair prices for their produce.

Addressing every farmer to sell their paddy to the procurement centre: Every farmer should get a chance to sell their paddy to the procurement centre by increasing the quantity of paddy procured by the government. Normally, very few farmers in the village get the chance to sell paddy to the procurement centre because the rice mill procures only a limited quantity per government order. There is a need to modify government orders and increase procurement capacity at the procurement centre and the rice mill.

Increasing price gap: The price gap between the local price and the support price of paddy has increased. Every year, the support price increased by around 5% relative to the cost of cultivation as determined by the Commission for Agricultural Costs and Prices (CACP), Government of India, and local prices have remained more or less constant over the last 2-

3 years. Farmers will benefit and earn more money by selling their paddy to the procurement centre at the support price.

Opening temporary procurement centres: The government agencies will open temporary procurement centres in rural areas, helping farmers sell their paddy in their villages. Normally, each block has one centralized procurement centre, so a huge number of farmers are unable to sell their paddy at a remunerative price. As a result, large numbers of farmers couldn't take advantage of the decentralized procurement scheme. That's why one or two temporary procurement centres or campaigns will be required in each block.

Improving Storage facilities: Storage facilities are required to increase procurement quantities. It may be mentioned that the procurement quantity of paddy was 10.62 lakh metric tonnes in 2013-14. At present (2021-22), it has increased to around 35.31 lakh metric tonnes, with several steps being taken by the state government in the past six years that will further increase with the setting up of the upcoming storehouses. The storage capacities are created by the West Bengal State Warehousing Corporation. Therefore, if storage capacities increase further, farmers will be able to sell their entire paddy production in bulk quantities, as well as procure paddy from farmers immediately after harvest through the Centralized Procurement Centre.

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ANNEXURES

Annexures-I

Decentralized Procurement Scheme for Procurement of Wheat and Paddy

District cum Procurement Centre Schedule*

Reference year (calendar year 2021)

* The schedule can be filled from District Statistical Abstract, in the office of District Agriculture Officer in the district headquarter.
The part of schedule can be filled from the office of nodal agency for Government procurement. In absence of the concerned official it can be filled with the officials who have looked after government procurement in the district or blocks.

1. Administrative Features

1.1 Name of the District: _____ 1.2 State: _____

1.3 Agro-Meteorology Division[1]: _____

1.4 Number of Blocks: _____ 1.5 Number of Villages: _____

1.6 Mobile No:_____

2. Demographic details of District

Particulars	Block-I	Block-II	Block-III	Block-IV	Block-V
Total population					
Rural Population (%)					
Rural literacy (%)					
% of rural male literacy					
% of rural female literacy					
Non-agriculture workers (%)					
Agriculture labour (%)					
Number of rural households					
% of Agriculture Household (no)					

[1] Agro-metrology division referred here is the classification of country into 35 agro-climatic regions for which rainfall data are published by the Metrology Department of Government of India.

3.Different Categories of Farm Households in district

Size of Farm	Block-I	Block-II	Block-III	Block-IV	Block-V
Sub-marginal (less than 0.4 hac)					
Marginal (0.4 -1 hac)					
Small (1.1-2 hac)					
Semi-medium (2.1-4 hac)					
Medium (4.1-10 hac)					
Large (more than 10 hac)					

4. Land Use Classification (in Hac)

Particulars	Block I	Block II	Block III	Block-IV	Block-V
Geographical area					
Net area sown.					
Gross Cropped Area.					
Cropping intensity in %					

5. Implements, Infrastructure and Institutions

Particulars	Block I	Block II	Block III	Block-IV	Block-V
Tractors (no.)					
Tubewells (no.)					
Electric operated tubewells (no.)					
Bank / cooperative bank					
Post office					
Functional Co-operative Societies,					
Functional SHGs					
Existence of KGK / KVK					
Fair Price Shops/Ration Dept.					
Ag. Produce Markets (APMC or non-APMC Anaj mandi)					
PSS procurement centres					

1. **Net Sown Area irrigated with alternate Sources of Irrigation**

Sources	**Block I**	**Block II**	**Block III**	**Block-IV**	**Block-V**
Tube-well					
Canals					
Tanks					
Others					

7. Area under crops in blocks during the last three Years

Crops/Area (hac)	**2020-21**					**2019-20**				
	Block I	Block II	Block III	Block IV	Block V	Block I	Block II	Block III	Block IV	Block V

8. Information about targeted crop in District

Particulars	**Block-I**	**Block II**	**Block III**	**Block IV**	**Block V**
Area under Targeted crop (hac)					
%age of total cropped area in the district					
Total Production (qtls)					
Productivity (per hac)					
Avg. price (Rs./qtl) with quality (if any)					

9. Details from Agriculture produce Marketing Committee (APMC)/regulated market about Procurement operation

Particulars	**Details**
Procurement centre in the regulated market (APMC) for crop	Yes / No
If yes, charges paid to market committee	
Procurement started dd/mm/yy	
Crops Procured	
Procuring agencies	
Total quantity procured (qtls) with dates	

10. Problems in Procurement operation as narrated by District Agriculture officer.

11. Cost of cultivation of targeted Crop according to varieties of targeted crop (from District Agriculture Officer, KGK/KVK)

Input-output details with units	Crop 1 (Paddy)	Crop 2 (Wheat)
Expected sowing time (week & month)		
Nursery Area for one hect. of transplanted crop		
Land preparation cost (Rs.)		
Seed Qty. (Kg)		
FYM Qty. (in ton)		
Seedling transfer time / period		
Fertilizer & nutrients (in kg of nutrients)		
Urea		
DAP		
Other 'P' fertilizer		
MOP/other 'K' fertilizer		
Zinc		
Other nutrients		
Prevalent pests and Pesticides		

Name		
Qty		
Name		
Qty		
Name		
Qty		
Irrigation Timings and Qty		
Land rent		
Any other recommended operation		
Harvesting period / weeks / months		
Expected quantity of Main Product (qtls.)		
By Product (qtls.)		

Annexures-II

Procurement Centres / Officials

If officials are not available, please direct these questions to district and block officials who looked after procurement operations

Name of the person and designation:
Mobile no:

1. Detailed location of Procurement Centres in different blocks of District

1.1 Crops targeted _____ 1.2 Periods started _____

1.3 Number, name and places of procurement centres with blocks and villages covered by a Procurement centre and also its association with APMC

i. _____
ii. _____
iii. _____
iv. _____
v. _____
vi. _____
vii. _____
viii. _____
ix. _____
x. _____

1.4 Availability of warehousing facility: a) Yes b) No

1.6 Warehouse owned by whom? a) Public b) Private c) Co-operative d) others

1.5 If Yes in 1.4, Cost of Warehouse (per sack/bag) _____

2. Documenting process of purchase of targeted crop in procurement centre especially in relation to:

a. Date of initiation of operation (dd/mm/yr) _____

b. Date of notification (dd/mm/yr)_____

c. Identification of farmers for procurement _____

c. Involvement of other government staffs or agencies _____

d. Closing of operation (dd/mm/yr)_____

e. Amount Procured _____

f. Total costs involved in procurement operation in district_____

3. Mode of payment

Direct Payment in account of farmers:

i) within 3 to 7 days of procurement,
ii) after around 30 days of procurement,
iii) after around 6 months of procurement

5. Costs (if any) in disposing of targeted crop

i. Labour charges for loading/ unloading_____
ii. Cost of packing material_____
iii. Market fee (if any) _____
iv. Commission (if any) _____
v. Taxes, Octroi (if any)
vi. Other costs , if any_____

6. Price of procured commodity at the time of selling / disposing and to whom

7. Problems, in operation of Procurement as narrated by Procurement agency official

_____

Annexures-III

Decentralized Procurement Scheme for Procurement of Wheat and Paddy

Reference year (calendar year 2021)

Village Schedule*

* Village schedule to be filled by enquiring from Village head (Sarpanch / Gram pramukh) and Subject Matter Specialist (SMS**).** SMS can be a person with sufficient knowledge about targeted crop; at times employed in KGK/KVK, also village adviser in certain states can also be used as SMS.

1. General Information

1.1 Name of Village_____
1.2 Name of Tehsil, District and State_____
1.3 Distance from Nearby Town _____ nearest Bus stand_____ and Railway Station_____
1.4 Mobile no. of the person:_____

2. Demographical details of Village in particular Block

Number of households				**No. of agricult. household**	**No. of non-agricult. household**	**No. of agricult. labour household**	**Total Population**	**Literacy (%)**
General	S.C.	S. T.	OBC/ others					

3. Socio- Economic Status of Village Households

No. of Household according to size of holding					
Sub-marginal (less than 0.4 hac)	Marginal (0.4 -1 hac)	Small (1.1-2 hac)	Semi-medium (2.1-4 hac)	Medium (4.1-10 hac)	Large (more than 10 hac)

4. Land use Classification of village (in hac)

PARTICULARS	**in hectares**	**% to Geographical area**
Geographical area		

Net area sown		
Area sown more than once		
Gross Cropped Area		
Cropping intensity in %		

5. Net Area irrigated by different sources in village/block (in hac)

Canal		**Tanks**		**Well**		**Tubewells**				**Others (specify)**	
						Electric		**Diesel operated**			
Area In Hec	**% of net area sown**	**Area In Hec**	**% of net area sown**	**Area In Hec**	**% of net area sown**	**Area In Hec**	**% of net area sown**	**Area In Hec**	**% of net area sown**	**Area In Hec**	**% of net area sown**

6. a) Proximity to river

b) Presence of canal in village: ____. If yes, distance (km) from nearest canal_____

c) Availability of Khad / pond / closed water body in village:

Number: _____ Area in hectare (aprox.) _____

7. Details of market and market related infrastructure and institution in village /near village

Facility	**Available within Village or not**	**If not, then place of availability**	**Distance (in km.)**
1. High School (Public)			
2. Private High School			
3. Primary Health Centre			
4. Private Medical Practitioner			
5. Active NGO or SHGs (No.)			
6. Post Office.			
7. Commercial Banks			
8. Co-operative Bank			
9. Farm Produce Storage Facility			
10. Fair Price Shop/Ration Dept. (No.)			
11. Ag. Produce Market (APMC)			

12. Government Procurement Centre			
13. Existence of Village market / hat (nos.)			

8. Details on Procurement

8.1 Started on_____

8.2 Crops targeted_____

8.3. Number of village covered by one PC_____

8.4. Distance of PC from your Village _____

8.5. Mode of transportation_____

9. Information regarding the target crop

Crop	Area under crop (in Ha)	Total production (in qtls)	Extent of Loss through pest and disease	Marketed through government procuremet (qtls)	Price received (Rs./qtl)	Marketed through other marketing channel (qtls)	Price received (Rs./qtl)

10. Problems perceived by village Pradhan (head) in implementation of Government Procurement

10.1

10.2

10.3

10.4

_____

Annexures-IV

Decentralized Procurement Scheme for Procurement of Wheat and Paddy

Reference year (calendar year 2021)

Household Schedule

1. **General Information**

i) Schedule no._____ ii) Name of Farmer_____

iii) Village & P.O. _____iv) Block _____

v) District _____vi) Social Grouping: SC/ST/OBC/Gen,

vii) Mobile No: _____

2. Family composition

S. No.	Name	Age	Sex	Marital Status (Code1)	Education (Code 2)	Activity Status (Code 3)	
						Main Occupation	Subsidiary Occupation
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Code 1: M = Married, UM = Unmarried, W = Widow

Code 2: Illiterate =0, Primary = 5, Secondary = 10, Higher secondary = 12, Graduate and above = 15

Code 3: 1= Self employed in farming, 2= Self employed in non farming, 3 = Salaried, 4 = wage earner in agriculture, 5 = wage earner in non-agriculture, 6 = Pension, 7 = Dependent, 8 Household work, 9 = Student, 10 = other (list) a = _____; b = _____; c = _____; d = _____

3. Information about Land used in hectares

i) Size of land holding _____ Leased in_____ Leased out_____

ii) Term of Leasing (code 4)* _____

iii) Total operational holdings _____ No. of fragments/plots_____

iv) Area under Crop Cultivation_____ Area under Orchard _____

v) Cropped Area Irrigated_____ Unirrigated_____

vi) Source of Irrigation: Canal/Well/Tube well/Tank/Any other specify

* Code 4 (term of leasing): 1= share cropping, 2 = fixed rent in cash, 3 =both, 5= against labour, 6 = other arrangements if any, name _____

4. Asset Holding

Sr. No.	Kind	No.	Quality of Assets (Good, Bad)
1.	Residential house - Thatched roof - Concrete roof - Kuccha floor - Pukka floor		
2.	Animals - cows - Buffaloes - Other economic animals (if any)		
3.	Tractor Threshing machine		
4.	Pumpset: Diesel / Electric		

5. 6. 7. 8. 9.	Tubewell Other important asset Motorcycle Television		

5. Details of Borrowing

Amount of loan (Rs.) & rate of interest (per annum)	**Institutional** (Code-5)	**Non-institutional** (Code-6)
Short term or crop loan		
Long term with Purpose (Production) (Code-7)		
Long term with Purpose (Consumption) (Code-8)		

Code 5: Institutional: 1 = Commercial bank, 2 = Cooperative bank, 3 = Government programme,

Code 6: Non-institutional: 1 = Traders/ Arhat/commission agent, 2 = Nonbanking financial institutions, 3 = friend or relative, 4 = Land lord / employer, 5 = money lenders 6 = other, Specify_____

Code 7: loan for production purpose can be:
Investment in machines / instruments (11), purchase of animals (12), any other production purposes (13)

Code8: loan for consumption purpose can be:
Education (22), marriage (23), casualty of earner (24), daily livelihood expenditures (25), others (kindly mention, 26)

6. Cropping Pattern (for calendar not agriculture year)

Crops	**2020**		**2021**	
	Crops Irrigated Area	**Crops Unirrigated Area**	**Crops Irrigated Area**	**Crops Unirrigated Area**

7. Crop Produced and its Disposal Pattern for 2 years (calendar not agriculture year)

Crop	Total Production (qts)		Kept for home consumption (qtls)		Marketed (qts)		Sold to (Code7)*		Price (Rs.)	
	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021

* Code 7: Sold to market functionaries: Village traders (1), Wholesale traders (2), Procurement centre (3), others (4)

8. Marketing Channel for Important Crops

A possible list of market functionaries in an exhaustive marketing channel is: Producer → procurement centre (PC) / Village Assembler (VA) / Pre Harvest contractors (PHC) / Village traders (VT) / Wholesaler (WS) / Other Commission agents (OCS) → Retailers / Consumers

Important Crops	Marketing channel	% sold	Price (Rs.)

9. Detail of market

i) Name of Market_____ ii) Distance from village _____

iii) Mode of Transport_____ iv) Type of market: Regulated / Non regulated / others

v) Cost of transportation to regulated market (per bag/stack) _____

vi) Availability of warehousing facility: a) Yes b) No

vii) If Yes, Cost of Warehouse (per sack/bag) _____

viii) Availability of processing units a) Yes b) No

10. Production Cost of Targeted Crop (in Rs./ ha)

S. No.	**Detail of cost items**	**Actual cost in plot 1**	**Actual cost in plot 2**	**Actual cost in plot 3**
i.	Land preparation Cost			
ii.	Cost of Material (Seed, fertilizers, chemicals)			
iii.	Cost of irrigation (code 8)			
iv.	Cost of labour (code 9)			
v.	Cost of hired equipments			
vi.	Other cost (if any)			
	total of production costs			

Code 8: Electric operated motor = 1, Diesel operated motor = 2, Other source = 3

Code 9: Attached Labour (salaried) =1, Hired labour = 2, Labour on cash (21), Labour on kind (22), Family labour = 3.

11. Marketing cost of targeted produce at farmers levels (Rs.)

11.1 Cost Incurred/shared by producer with other market functionaries in supplying produce from farming field to wholesale market

S. no.	Cost incurred	Channel-1	Channel-2	Channel-3
i.	Labour charges for handling / loading/ unloading of produce			
ii.	Transportation cost			
iii.	Instrument / machine hiring costs (if any)			
iv.	Taxes / Octroi (if any)			
v.	Commission in market			
vi.	Other expenses if any			
	total of marketing costs			
	Price received			

12. Constraints faced by the Producer in production and marketing of targeted crop

Intensity of problem: (1) High, (2) Moderate, (3) Low

12.1 **Production problems (farmers)**

i. Need for provisioning assistance of good quality seedlings, chemicals (pesticides, fertilizers etc.), in sufficient quantity

ii. Availability of credit facilities

iii. Awareness of farmer with latest technical knowledge, and kind of help in augmenting production from other sources

a) Institution (KGK / KVK (101), Call centres (102) etc.)

b) Non-institutional (Progressive farmers (111), Market middle man (112) etc.)

12.2 **Marketing problems**

1. Problems in not getting remunerative price for produce in local market:
   (1) High, (2) Moderate, (3) Low
2. Existence of regulated market of targeted produce and distance:
   Within 7 km (L), between 7.1 to 20 km (M), beyond 20 km (H)
3. Cost of transportation : (1) High, (2) Moderate, (3) Low
4. Cheating by middlemen : (1) High, (2) Low
5. Distance of processing unit:
   Within 10 km (L), between 10.1 to 25 km (M), beyond 25 km (H)

13. Perception of farmers about Procurement

13.1Have you been aware of the MSP: i) Yes ii) No

13.2 If yes, how long have you been selling your targeted produce through government procurement?

13.3 Delay in government procurement

i) Within 7 days of harvesting

ii) Within 15 days of harvesting

iii) Beyond 15 days

13.4Delay in receipt of payment in time

i) within 3 days
ii) Within a week
iii) Within a month
iv) More than a month

13.5Problems with procurement

a. Formalities (if any)

b. Timely receipt of payment

c. Long Distance to procurement centre

d. other cost (if any):

13.6Did it affect area under targeted crops? i) Yes ii) No

13.7The good points in Government procurement; provide detail

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