**Minimum support price and procurement mechanism for smallholder paddy farmers: an effective tool for farm price risk mitigation**

ABSTRACT

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| The decentralised paddy procurement system in the State of Kerala, India is a market support mechanism for farmers offering a procurement price comprising the Minimum Support Price (MSP) issued by the central government and the State Incentive Bonus (SIB). The study was an attempt to assess the farmers' perceptions on the effectiveness of the paddy procurement in the State, using six key parameters: market perception, price risk mitigation, institutional support, influence on crop choice and decision-making, procedural formalities, and state policy intervention. A survey was conducted among 160 farmers from the major rice growing tracts of the State, using a structured interview schedule and Likert-type scale measurement. The findings indicate that price risk mitigation (84.16) and state policy intervention (86.62) achieved very high effectiveness scores, demonstrating the effective role of MSP in paddy marketing and the related benefits for farmers through strong government interventions at state level. Market perception (74.18), influence on crop choice and decision-making (74.35), and institutional support (62.64) were also rated as highly effective. However, procedural delays and quality-related disputes emerged as key limitations of the procurement system, warranting policy attention. The study highlights that while the procurement scheme provides market stability mitigating the price risks, addressing procedural bottlenecks is crucial for enhancing its overall effectiveness. |

***Keywords:*** *Paddy procurement, market perception, policy interventions, state incentive bonus*

1. INTRODUCTION

Agriculture and its allied sectors serve as the primary source of livelihood in India, with 70% of rural households relying mainly on farming. Among these, 82 per cent of farmers are small and marginal (FAO, 2025). Paddy, a major crop in the country, holds the second rank in global production, contributing 26 per cent to the world's total output, with a production capacity of 1368.25 LMT in 2023-24 (GOI, 2024). The Agricultural price policy is considered a pioneering measure by the Government of India to empower the farming community. Parikh and Singh (2007) stated that the Minimum Support Price (MSP) is an integral component of India's agriculture price policy. It aims to ensure support prices to farmers and affordable prices to consumers through the public distribution system.

A study by Kaur (2014) showed that the government's administered pricing policy helped to safeguard farmers' interests by setting specific prices, such as procurement prices, during the cropping season. MSP is instrumental in converting the inherently unstable agricultural market, which often inflicts undue losses to the growers, into a safe and assured marketplace. From international perspective, as reported by Chen & Cheng (2025) China’s Minimum Purchase Price policy (MPP), the European Union’s Common Agricultural policy (CAP), and U.S. agricultural subsidies made significant impacts on their agricultural production efficiency, market distortions, and farmers’ income.

The Food Corporation of India (FCI) is the nodal agency involved in procuring food grains. Paddy procurement through FCI in the country follows two systems, namely the Decentralized Procurement System (DCP) and the Centralized Procurement System, where the procurement takes place with or without the involvement of the state agency. In Kerala the DCP system is followed from 2006 onwards, with the Kerala State Civil Supplies Corporation Limited (SupplyCo) as the state agency for procurement. Private rice millers are allotted in the respective areas by SupplyCo to undertake procurement. The millers process the collected paddy and deliver the Custom Milled Rice (CMR) to SupplyCo for distribution under the Public Distribution System (PDS).

A study by Aditya et al. in 2017 reported that in India, even after 40 years of the implementation of the MSP, only less than 25% of farmers know about the MSP of crops grown. Ali et al. (2012) observed that the MSP is not being implemented uniformly in all the states. It is relatively more successful in surplus States like Punjab and Andhra Pradesh. Government intervention is very low in states like Tamil Nadu, Karnataka, West Bengal, Bihar, and Assam and paddy procurement is also very stumpy for their public distribution system (PDS). A study by Basantaray (2023) reported that the share of government agencies in the procurement of paddy is highest in Kerala (93.4%), while that is only 17.2 per cent all over India, resulting in farmers selling off their produce to local private *Mandis*. Hence, the government’s role is pivotal in guaranteeing assured price and market for paddy farmers. The present study is an attempt to examine the farmers’ perceptions on the effectiveness of paddy procurement in the State of Kerala, the results of which will be helpful in suggesting suitable policy recommendations for its further improvement.

2. Research methodology

The study was conducted in the selected Panchayats of Palakkad and Alappuzha districts, the major rice-growing tracts of Kerala. From each district, the two highest procuring centres were purposively selected, and eight Panchayats were randomly selected from each procurement centre. Ten farmers from each village were selected randomly, thus constituting a total of 160 respondents. Primary data was collected through meetings with the officials, focus group discussions, and interviews with farmers using a structured interview schedule. Farmers’ perception on the effectiveness of the paddy procurement was assessed on different parameters as given by Sahana et al. (2021) with suitable modification, which included market perception, price risk mitigation, institutional support, influence on crop choice and decision-making, procedural formalities, and State policy intervention. The five-point Likert scale ranging from strongly agree (SA), agree (A), neutral (N), disagree (D), and strongly disagree (SD) was used for measurement and score of 5, 4, 3, 2, and 1 respectively was given to the positive statements and the reverse score of 1, 2, 3, 4 and 5 to the negative statements. The effectiveness was measured using descriptive statistic tools such as mean score and mean percentage score for each statement using the formula given below

$$Mean Score=Total Score÷Number of respondents $$

$$Mean Percentage Score=(Mean Score÷Maximum Score)×100$$

$Effectiveness Score=Mean Percentage score÷Number$ of statements

**Table-1:** The effectiveness scores of each parameter were interpreted using the classification given below.

|  |  |
| --- | --- |
| **Range** | **Category** |
|  Upto 40 | Very Low |
| 40 – 59 | Low |
| 60 – 79 | High |
| 80 - 100 | Very High |

3. results and discussion

Farmers’ perceptions on the effectiveness of paddy procurement were analysed using six parameters, viz. market perception, price risk mitigation, institutional support, influences on crop choice and decision-making, procedural formalities, and state policy intervention. Various items contributing to all seven parameters are identified from the literature and modified according to the prevailing context of Kerala state.The study reveals that price risk mitigation (84.16) and state policy intervention (86.62) achieved exceptionally high effectiveness ratings. Meanwhile, market perception (74.18), impact on crop choice and decision-making (74.35), and institutional support (62.64) were also rated as highly effective. However, procedural formalities scored significantly lower score (39.46), implicating its adverse effect on the procurement process.

**3.1 Market Perception**

Market perception of paddy farmers was assessed with respect to seven items identified for the study. The ‘procurement conducted at the closest location to the field’ was the item that achieved the highest mean percentage score. The top score reflects that paddy procurement occurs directly at the farmer's fields in most cases. In the case of remote villages, the availability of road facilities and the dimensions of the vehicles reaching the farmers are the major dependent factors that decide the procurement place. The second-highest score was obtained for the item ‘farmers' high reliance on the government procurement system rather than dependence on the open market’. The fair price offered by the government in the procurement through the SUPPLYCO in the state benefits the majority of the farmers who depend on the procurement system. A study by Keerthi (2018) conducted in two blocks of Thrissur district in Kerala found that the Puzhakal block completely depends on SupplyCo for procurement (100%), while in Pazhyannur, about 60 percent of farmers selling their produce to SupplCo, and 40% are selling to either private mills or agents mainly due to lack of storage system. The third-highest score was obtained for two items showing a very high effectiveness viz.,‘Farmers get access to market information,’ the timely information provided in the government procurement system favoured the item with a very high effectiveness score. The farmers rely on various channels for information, such as visiting the SupplyCo website regularly, intimation from the Krishi Bhavan (State Agricultural Department office at Panchayath) to the group farm members and transfer of information to individual farmers through group farm meetings. The item ‘Rarely depends on other marketing channels’ attains a very high effectiveness score of 81.13, thus indicating the proficiency of the government procurement system in Kerala. During the study period of 2023-24, 98% of farmers depended on the SupplyCo for procurement, and only very few people sold their produce to the private millers, which is mainly due to the high-quality, market-preferred variety cultivated by some farmers, the immediate payment done by the private millers and also due to the lack of storage facility.

‘No concern towards the quality consciousness of the consumers’ was the fourth item among the low-scored parameters. The second least scored item, ‘Quality produce does not fetch a higher price,’ attains very low effectiveness with a score of 38.25. The State government agency SupplyCo adheres to a minimum quality standards such as moisture content of 17%, mixing with other paddy varieties to 6%, diseased or germinated grains to 4%, chaffy grains to 3%, and extraneous organic and inorganic materials to 1% each, and colour-changed seeds to 1%, for paddy procurement. The uneven practice followed by the individual farmers creates a variation in the quality of paddy produced. Farmers perceived that in the current procurement system those who produce high-quality paddy receive the same price as those of with minimum quality. This is unfavourable to many farmers who are able to keep the quality standards. The least scored item in the study was ‘varietal preferences do not give any market advantage’, signalling that the consumer-preferred variety does not give any market advantage to the farmers in the case of procurement. Even if the farmers cultivate consumer preferred varieties, SupplyCo will procure at the fixed rate of procurement price, whereas the open market offers higher prices, depending on the demand and quality of the variety with an immediate effect. Similarly, organically produced or traditional rice varieties does not fetch a market advantage in the current procurement system. These are the concerns raised by a few farmers which need to be addressed by the policy makers.

**Table 2: Items analysed under different parameters in the study**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Items analysed** | **Mean score** | **Mean percentage score** | **Effectiveness** |
| **Market perception** |
| S1 | Farmers get access to market information | 4.06 | 81.13 | Very high |
| S2 | Procurement done at nearest point to field | 4.46 | 89.13 | Very high |
| S3 | Rarely needs to depend on other marketing channels | 4.06 | 81.13 | Very high |
| S4 | Varietal preference doesn’t give market advantage | 1.51 | 30.12 | Very low |
| S5 | Farmers depend solely on the paddy procurement system instead of searching for other market opportunities | 4.24 | 84.75 | Very high |
| S6 | No concern towards the quality consciousness of the consumers | 2.68 | 53.63 | Low |
| S7 | Quality produce doesn’t fetch higher price | 1.91 | 38.25 | Very low |
| **Price risk mitigation** |
| S1 | Ensures minimum profit to the farmers | 4.27 | 85.50 | Very high |
| S2 | Protects farmers against price fluctuation | 4.25 | 85 | Very high |
| S3 | Opportunity for significantly improved farm income | 4.17 | 83.37 | Very high |
| S4 | Better market opportunity for small and marginal farmers | 4.44 | 88.75 | Very high |
| S5 | The void of State Incentive Bonus for large farmers does not create any market advantage | 3.50 | 70.00 | High |
| S6 | Paving the way for attaining a competitive price for rice in the open market | 4.41 | 88.13 | Very high |
| S7 | Safeguards farmers against exploitation by private traders | 4.42 | 88.37 | Very high |
| **Institutional Support** |
| S1 | Govt. announces the procurement price well in advance of the season | 4.38 | 87.5 | Very high |
| S2 | Procurement price is fixed based on the cost of production | 4.03 | 80.62 | Very high |
| S3 | Manpower support for smooth procurement | 3.42 | 68.37 | High |
| S4 | Offers adequate increase in price considering the inflation | 1.96 | 39.13 | Very low |
| S5 | Less support for storage and handling of the produce | 1.88 | 37.60 | Very low |
| **Influence on crop choice and decision making** |
| S1 | Influence the farmers’ decision to opt for paddy cultivation | 3.61 | 72.12 | High |
| S2 | Varietal preferences and the use of other inputs are greatly influenced | 3.74 | 74.94 | High |
| S3 | Procurement price is a means to increase productivity with improved technologies | 3.86 | 77.12  | High |
| S4 | Promotes synchronised farming | 3.66 | 73.25 | High |
| **Procedural formalities**  |
| S1 | Lengthy and tiresome procedural formalities for procurement | 2.94 | 58.87 | Low |
| S2 | Disputes on keeping quality standards with procurement agencies | 1.79 | 35.87 | Very low |
| S3 | Absence of ready payment mechanism discourages farmers | 1.46 | 29.37 | Very low |
| S4 | Delay in procurement due to inadequate staff and infrastructure  | 1.68 | 33.75 | Very low |
| **State policy intervention** |
| S1 | Arrangement with Supply Co/Coop bank for decentralised procurement | 4.17 | 83.37 | Very high |
| S2 | Field verification and application processing with the involvement of Krishi Bhavan  | 4.33 | 86.50 | Very high |
| S3 | Public private partnership (arrangement with private millers) to carry out responsible procurement | 4.34 | 86.87 | Very high |
| S4 | Issue of State Incentive Bonus along with MSP making procurement price more attractive | 4.49 | 89.75  | Very high |

**Table 3: Perceived effectiveness of paddy procurement in Kerala**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl.No** |  | **Mean Score** | **Mean Percentage Score** | **Effectiveness** |
| **1.** | Market perception | 30.1 | 74.18 | High |
| **2.** | Price risk mitigation | 29.45 | 84.16 | Very High |
| **3.** | Institutional support | 17.78 | 62.64 | High |
| **4.** | Influence on crop choice and decision-making | 16.04 | 74.35 | High |
| **5.** | Procedural formalities |  7.89 |  39.46 | Very low |
| **6.** | State policy intervention | 17.32  | 86.62 | Very High |
|  | **Mean Effectiveness score** |  | **70.24** | High |

**3.2 Price risk mitigation**

The highest-rated item in price risk mitigation was identified as ‘Procurement price offers better opportunities for small and marginal farmers.’ This is primarily attributed to the State Incentive Bonus (SIB) offered by the state government to small and marginal farmers over and above the Minimum Support Price (MSP). Thus the procurement price, including the SIB and MSP, is a vital mechanism to mitigate farmers' price risk. The second highest-rated item, ‘Safeguards farmers against exploitation by private traders,’ emphasized the importance of procurement price in shielding farmers from exploitation by private millers. By stabilizing market prices at a predetermined level, farmers get an assured price and they do not have to sell their produce for less than the set rate.

The third-highest rated item, ‘Procurement price is paving the way for attaining a competitive price for rice in the open market,’ highlights the significant role of procurement price in promoting market competitiveness. The government-announced procurement price guarantees paddy farmers a minimum return for their produce, pushing the open market to set rates higher than those offered by the government. The fourth-highest rated item, ‘Procurement price ensuring minimum profit to farmers,’ received a high effectiveness score of 85.50. The government’s procurement process guarantees farmers a fixed price, covering cultivation costs and miscellaneous expenses while ensuring a modest profit margin.

A very high effectiveness score of 85 was attained for the item, ‘protecting farmers against price fluctuations.’ The fixed price announced by the government before the crop harvest protects the farmers from price fluctuations in the open market. The procurement price is an opportunity for significantly improved farm income in cases where the paddy procurement is void of government procurement. The six items under examination achieved exceptionally high effectiveness scores, highlighting the crucial role of procurement prices in the socioeconomic advancement of farmers.

Though with a high score, the lowest-rated item highlighted was the absence of the State Incentive Bonus (SIB) for large farmers. Providing MSP as the procurement price without the advantage of SIB to large farmers offers no market advantage for them. It is inferred that farmers who are interested in expanding their area of paddy cultivation would not consider procurement as a market opportunity, instead, they may depend on the private market.

**3.3 Institutional support**

One of the top-rated items was the advance announcement of the procurement price by the central government before the start of the cropping season. Thus, the farmers could plan their various stages of production, post-harvest handling, and procurement accordingly, attaining maximum profit. A similar study by Sahana et al. (2021) in the Karnataka state found that MSP was announced before the sowing reason, which was strongly agreed by 55% of the farmers. ‘Procurement price is determined based on the cost of production’ was the second highest-rated item. It indicates that farmers endorse the fact of reasonable procurement price covering their cost of production.

The item with the second-lowest rating gained was ‘sufficient increase in procurement price considering inflation’. However, its low rating mainly stems from the lack of a proportional price increase relative to the inflation rate. The rise in procurement price did not align adequately with the changes in production costs.

The lowest-rated item was identified as offering minimal support for storing and handling of produce in the procurement scheme. The study revealed that only 42% of farmers had access to closed permanent storage facilities. In Palakkad district, a major rice growing tract of Kerala, the permanent structure for paddy storage such as ‘Kalappura,’ or the ancestral house called ‘Tharavadu,’ are commonly used. The remaining 58% of farmers lack a closed storage system and they normally store harvested paddy at the field's boundaries, as open storage, till collected by procurement agency. This could be a major bottleneck for the farmers as the produce is more vulnerable to quality loss due to climatic vagaries. The government provides a meagre amount as handling charge which is not adequate to meet the handling expenses of farmers.

**3.4 Influence on crop choice and decision-making**

The influence of procurement on crop choice and decision-making were found to be determined by four high-score items. Among these, the top-rated factor was "procurement price motivates the adoption of advanced technologies for higher productivity. Procurement policy and pricing could impact decisions about adopting agricultural mechanization, like transplanters and combine harvesters, which helps to achieve synchronised harvesting and procurement without delay. Procurement is more efficient in areas where synchronised farming is practiced, as highlighted as the third-highest scoring item. Synchronised farming is aimed at attaining uniformity in planting schedules, crop varieties, cultural practices, and harvesting times within a contiguous area, generally marked as a group farm. This helps to overcome the procedural glitches like delay in the procurement process. Procurement policies significantly impact varietal preferences and the selection of other inputs for production. Procurement is done irrespective of the crop varieties and cultural practices. Hence farmers have the freedom to choose the varieties and production practices.

‘The influence of procurement price on farmers' decisions to cultivate paddy’ was the fourth item with a high score in effectiveness, which clearly recommends that the procurement policy influences farmers' decisions to cultivate paddy. This supports the state government’s policy to prevent conversion of paddy land for other purposes and the conservation of wetlands. It could be inferred that the procurement scheme attracts more and more farmers to come forward for fallow land cultivation and expansion of area under paddy in the State.

**3.5 Procedural formalities**

Procedural formalities include the various stages such as application submission, verification, approval, issue of payslips, timely payment, and other activities related to procurement and regulatory compliance. This parameter received a comparatively low score, indicating low effectiveness of the procurement system. The item ‘lengthy and tiresome procedures for procurement’ received a relatively low score of 58.87, which was still the highest among all items evaluated. Farmers reported experiencing delays at multiple stages of the procurement process, including the waiting period for procurement, the issuance and distribution of Paddy Receipt Slips (PRS), procedural requirements for obtaining payment, and the overall delay in receiving payments.

The second rated item was ‘disputes over maintaining quality standards with procurement agencies’. These disputes arise due to fixing the reduction rates of procured paddy based on quality criteria such as moisture content of the paddy, chaffy grain content, germinated grains, pest and disease damage of grains, and other quality parameters. The reduction rates set by procurement agencies due to non-confirmation of quality standards during procurement often lead to disputes with farmers.

Furthermore, delays in procurement caused by insufficient staff and inadequate infrastructure were identified as the third item under study in the parameter, mainly leading to delays in issuing the green slip and Paddy Receipt Slip (PRS). The lack of adequate storage facilities compounds the issue.

The least rated item was identified as the absence of a ready payment mechanism, discouraging farmers and reducing the effectiveness of the paddy procurement. The payments are made as PRS loans to individual farmers; where the state government takes loans from the banks and distributes to individual farmers in the form of PRS loans. This procedural delay often pushes farmers into financial distress. Overall, the low score obtained for the various procedural formalities was found to reduce the effectiveness of paddy procurement. The study by Sahana et al. (2021) in the State of Karnataka also pointed out that 50.81% of the respondents strongly agreed that irregular and untimely payment was a usual practice in paddy procurement. Resolving these procedural obstacles is essential for improving the overall efficiency of procurement. Promotion of synchronised farming for a geographical area through group farming could be a possible solution for streamlining procurement timelines. Additionally, improving post-harvest handling and storage infrastructure would ensure consistent quality of produce and significantly boost overall effectiveness of procurement.

**3.6 State policy intervention**

The decentralised paddy procurement system adopted in the state involves multiple policy interventions, which were analysed during the study. The items obtained a very high score, suggesting that the state's policy measures are perceived as highly effective by the farmers. The inclusion of the State Incentive Bonus alongside the Minimum Support Price (MSP) as the procurement price is the highest-rated aspect, receiving a score of 89.75. Small and marginal farmers in the state gain added support through this incentive bonus, which plays a significant role in easing their financial burden. A study conducted by Vijayan (2022) in Kerala emphasized that farmers received a fairer price for their produce from SupplyCo compared to what was available in the open market.

The public-private partnership designed to ensure efficient procurement emerged as the second highest-rated aspect. The collaborative efforts between the state agency SupplyCo and private rice mills play a key role in maintaining a smooth and uninterrupted procurement process. The private rice mills arrange the logistics for harvested paddy and supply the processed Custom Milled Rice to Government for public distribution.

Field verification and application processing facilitated by Krishi Bhavans at the Panchayat level is ranked as the third important item. In line with Kerala’s decentralised governance model, Krishi Bhavans have been set up at the Panchayat level under the State Department of Agriculture Development and Farmers’ Welfare, which undertake the field-level verification. This plays a crucial role in ensuring the transparency and authenticity of the procurement process.

The arrangement with SupplyCo or Cooperative banks for decentralized procurement, though ranked the lowest among the items, received a notably high effectiveness score of 83.37. This decentralized procurement approach, involving either SupplyCo or Cooperative banks, is recognized as an efficient method within the state. The system implemented by the state government through its agency, SupplyCo, contributes to a more structured procurement process. Additionally, prompt communication and effective coordination between the state agency and other stakeholders further enhance the overall efficiency and success of procurement.

**Figure 1: Procurement price distribution during the year 2015-2023**

**3.6 Overall effectiveness of the procurement**

The overall effectiveness of the procurement process was evaluated based on factors such as market perception, price risk mitigation, institutional support, influence on crop choice and decision-making, procedural requirements, and state policy measures, as shown in Table 3. The findings indicate that farmers in Kerala generally view the paddy procurement process as effective. This positive perception is largely driven by strong performance in areas like price risk mitigation and supportive state policies, both of which received very high effectiveness ratings. Additionally, market perception, institutional support, and influence on crop choice and decision-making were rated as highly effective. However, procedural formalities received a notably low effectiveness score, highlighting the negative impact of administrative challenges on the overall efficiency of the procurement process. This finding goes in line with that of a study by Sahana et al. (2021) in the State of Karnataka where the paddy farmers showed a favourable perception towards MSP and procurement, mainly due to the higher market access and lower price risks.

4. Conclusion

The study highlighted a robust and highly effective paddy procurement system in the State of Kerala, with better market access and policy support to the farmers. The implementation of price risk mitigation through paddy procurement safeguards the farmers from exploitation by private marketing agencies and offers an assured price for their produce. State policy interventions as public private partnership for decentralised procurement is also perceived as an effective mechanism. Farmers' decision making related to crop choice and technology adoption like mechanisation is also found to be strongly shaped by the procurement system. However, the lengthy and tiresome procedural formalities, disputes in quality assessment, delay in procurement due to inadequate staff and infrastructural facility, and moreover the absence of ready payments are perceived as the significant bottlenecks in paddy procurement. These issues can be tackled through a comprehensive, multifaceted strategy. Timely and prompt payments to individual farmer’s accounts could mitigate their financial distress and thereby enhance the appeal and trustworthiness of the procurement system.

Authors’ Contributions

This work was carried out in collaboration between both authors. Author A conducted the survey and data analysis and prepared a primary manuscript draft. Author B guided the work edited and the manuscript. Both authors read and approved the final manuscript.

**Disclaimer (Artificial intelligence)**

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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