

AN EVALUATION OF AGRICULTURAL MARKETING REFORMS AND THEIR OUTCOMES IN KHURDA DISTRICT OF ODISHA

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Abstract

Agricultural marketing reforms in India have been pivotal in reshaping the economic landscape of farming communities. This study evaluates the impact of key reforms APMC amendments, e-NAM integration, MSP-based procurement, and the Paddy Procurement Automation System (P-PAS) on farmers in Khurda district of Odisha. A mixed-method approach employing primary data from 120 farmers surveyed across three blocks of Khurda and secondary data from OSAMB, OSCSC, and GoI databases was adopted for the period 2018–2024. The hypothesis tested was that post-reform mechanisms have significantly improved farmers' price realisation and market access. Results indicate that Odisha's paddy procurement grew from 49 lakh MT in 2017–18 to 74.92 lakh MT in 2024–25, while MSP rose from ₹1,750 to ₹2,300 per quintal. However, in Khurda district, only 42.5% of farmers were aware of e-NAM, and intermediary dominance remained a significant constraint. The study concludes that reforms have produced partial but uneven outcomes, with structural gaps in e-governance adoption, infrastructure, and awareness requiring targeted policy intervention.

Keywords: Agricultural marketing reforms¹, APMC², e-NAM³, Minimum Support Price⁴, Khurda district⁵.

1. Introduction

India's agricultural sector, employing more than 50% of the workforce and contributing approximately 18.8% to the GDP in 2022–23, has been the subject of sustained policy reform over three decades. Agricultural marketing the process by which produce moves from the farm to the consumer remains a critical determinant of farmer income and rural welfare. The Agricultural Produce Market Committee (APMC) system, introduced through various state laws during the 1960s and 1970s, was designed to protect farmers from exploitation by intermediaries through regulated market operations (Chand & Singh, 2016). However, structural rigidities within the APMC framework over time resulted in cartelisation, limited competition, and persistent income losses for small and marginal farmers, who constitute approximately 87% of India's farming households (Saha et al., 2024). In response to these systemic deficiencies, the Government of India introduced a series of landmark reforms, beginning with the Model APMC Act of 2003, which provided a statutory framework for private markets, direct marketing, and contract farming. The electronic National Agricultural Market (e-NAM), launched on 14 April 2016, marked a pivotal digital intervention aimed at networking existing APMC mandis

into a unified online platform to ensure transparent price discovery and reduce intermediary costs (Bisen & Kumar, 2018). Implemented by the Small Farmers Agribusiness Consortium (SFAC), e-NAM has progressively integrated 1,522 mandis across 23 states and 4 Union Territories as of 2022, connecting approximately 1.7 crore registered farmers (SFAC, 2022).

Odisha, with over 50% of its population dependent on agriculture and allied activities, has undertaken significant marketing reform initiatives including the Paddy Procurement Automation System (P-PAS) rolled out statewide from KMS 2016–17, amendments to the Odisha Agricultural Produce Markets (OAPM) Act 1956, single-license provisions for unified trader licensing, and partial integration of RMC mandis with e-NAM (Mishra, 2020; Kathayat, 2019). Khurda district, home to the state capital Bhubaneswar and the Jatni Regulated Market Committee (RMC), presents a particularly instructive case for evaluating these reforms given its proximity to urban consumption centres, relatively higher literacy rates, and access to digital infrastructure (Government of Odisha, 2013). Despite considerable policy effort, studies indicate that only 20% of Odisha's registered farmers effectively avail MSP-linked procurement benefits, compared to 95% in Punjab and 70% in Haryana, as noted by the Commission for Agricultural Costs and Prices (CACP, as cited in Odisha TV, 2021). This persistent disconnect between policy intent and field-level outcomes underscores the need for granular district-level evaluations. The present study fills this gap by systematically examining the extent to which agricultural marketing reforms have translated into measurable outcomes for farmers in Khurda district during 2018–2024, focusing on market access, price realisation, infrastructure availability, and net income effects.

2. Literature Review

The academic literature on agricultural marketing reforms in India is extensive and spans both macro-level policy analyses and micro-level farmer impact assessments. Chand (2016) argued that the launch of e-NAM represented a structural shift in India's agricultural trade architecture, with the potential to enhance interstate competition and reduce transaction costs. However, Bisen and Kumar (2018) in their comprehensive review of e-NAM's performance identified critical implementation gaps in state APMC Acts particularly the absence of unified licensing in several states which curtailed trader participation and diluted the intended benefits of electronic trading. Their study emphasised the critical need for parallel investments in assaying infrastructure and rural internet connectivity to make e-NAM operationally effective. At the state level, Kathayat (2019) examined the performance of regulated markets in Odisha under the new marketing reforms regime and found that each regulated market served an average of 424 villages, well above the national average of 258, indicating structural overcrowding and inadequate market coverage. The study highlighted low commodity arrivals, poor trader participation, absence of open auction systems, and weak regulatory enforcement as chronic structural constraints. Complementarily, Mishra (2020) documented through the AGMARKNET reach study in Odisha that while digital platforms were being extended to RMC markets, farmer awareness and actual utilisation of market information remained critically low, particularly among small and marginal producers across coastal districts including Khurda.

Roy et al. (2022) analysed farm-market linkages in the context of India's broader agricultural marketing reforms and found that Farmer Producer Organisations (FPOs) and reformed APMC structures had a positive but modest impact on price realisation for paddy and pulses. The study cautioned that reforms could disadvantage small producers if pursued without corresponding institutional support and access to storage infrastructure. Selvaraj et al. (2022) evaluated India's agricultural marketing reforms from a future policy perspective and noted that states like Odisha, which had implemented single-license provisions for e-NAM integration, showed comparatively better reform compliance than states resisting APMC deregulation, even as on-ground adoption remained uneven. Nuthalapati et al. (2020) conducted a nationwide assessment of e-NAM and found that while over 1,000 mandis had been integrated, the quality of e-trading remained thin in most states due to the absence of

commodity assaying laboratories and inadequate logistics infrastructure precisely the gaps confirmed for Odisha by Krishnamurthy (2021). Ghosh (2013) examined the emergence of alternative marketing channels in India and established that direct marketing and contract farming remained marginal in states with weaker agribusiness infrastructure. Aggarwal et al. (2017) drew lessons from Karnataka's experience to demonstrate that transparent price discovery through electronic platforms could improve farmer income by 10–15%, provided that regulatory oversight and systematic farmer training were in place.

The specific context of Khurda district remains understudied in peer-reviewed literature. While OSAMB records confirm the Jatni RMC's operational role in the district, no systematic empirical evaluation of reform outcomes covering farmer awareness of e-NAM, marketing channel utilisation, intermediary cost structures, and comparative income effects has been conducted at the district level. The present study addresses this gap by integrating official secondary data from government databases with primary survey evidence from 120 farmers across Khurda's three principal agricultural blocks, contributing a district-specific analytical lens to the broader Odisha agricultural marketing reform discourse (NIAM, 2010; Chand & Singh, 2016).

3. Objectives

1. To assess the awareness and adoption of agricultural marketing reforms including e-NAM, MSP procurement, and APMC amendments among farmers in Khurda district of Odisha.
2. To evaluate the impact of these reforms on farmers' price realisation, intermediary costs, and net farm income in Khurda district during 2018–2024.

4. Methodology

The study adopted a mixed-method research design combining primary and secondary data. Primary data was collected through structured questionnaires administered to 120 farmers across three purposively selected blocks of Khurda district Jatni, Bhubaneswar, and Baliana representing urban-fringe, semi-urban, and rural agricultural typologies. Respondents were selected using stratified random sampling, stratified by landholding size: marginal (below 1 ha), small (1–2 ha), and semi-medium (above 2 ha). From each block, 40 farmers were interviewed between October 2023 and March 2024 through face-to-face structured interviews. Secondary data was sourced from the Odisha State Agricultural Marketing Board (OSAMB), the Odisha State Civil Supplies Corporation (OSCSC), the Press Information Bureau (GoI), the AGMARKNET portal, and peer-reviewed journal publications. Data on paddy procurement volumes, MSP revisions, and farmers benefited covered the period from KMS 2016–17 to 2024–25. The primary instrument comprised 32 structured items covering socio-economic profile, marketing channel preference, awareness of reform schemes, intermediary costs, and self-reported income estimates. A five-point Likert scale assessed satisfaction with market infrastructure. Data reliability was confirmed through Cronbach's Alpha ($\alpha = 0.79$). Descriptive statistics and chi-square tests were applied. The null hypothesis (H_0) held that no significant difference in price realisation and income exists between pre- and post-reform periods. Ethical clearance was obtained and all respondents provided informed prior consent.

5. Results

Table 1: Minimum Support Price (MSP) for Paddy — India (2018–19 to 2024–25)

Year	MSP (₹/quintal)	% Increase
2018–19	1,750	—
2019–20	1,815	3.71
2020–21	1,868	2.92
2021–22	1,940	3.85
2022–23	2,015	3.87
2023–24	2,183	8.34
2024–25	2,300*	5.36

Source: Ministry of Agriculture & Farmers' Welfare, GoI; CACP recommendations 2018–2025. *Provisional.

Table 1 presents the MSP trend for paddy over seven consecutive years. The MSP has risen steadily from ₹1,750/quintal in 2018–19 to ₹2,300/quintal in 2024–25, representing a cumulative increase of 31.4%. The highest single-year increment occurred in 2023–24 at 8.34%, signalling intensified government commitment to farm income stabilisation. This consistent MSP escalation has served as the primary financial incentive for Khurda farmers to engage with formal procurement channels (Press Information Bureau, 2023).

Table 2: Odisha Paddy Procurement Trends (KMS 2016–17 to 2024–25)

KMS Year	Procurement (Lakh MT)	Farmers Benefited (Lakh)	MSP Payment (Approx. ₹ Crore)
2016–17	43.80	11.00	7,950
2017–18	49.00	7.98	9,800
2018–19	51.40	10.10	9,870
2019–20	52.00	10.00	10,296
2020–21	77.33	11.60	14,610
2022–23	75.00	~15.00	~15,600
2024–25	74.92	18.03	16,986

Source: Odisha TV (2021); The Statesman (2021); Deccan Chronicle (2025).

Table 2 reveals that Odisha's total paddy procurement grew from 43.80 lakh MT in 2016–17 to 74.92 lakh MT in 2024–25, with MSP outgo rising from ₹7,950 crore to ₹16,986 crore. However, farmer beneficiary count grew only from 11 lakh to 18.03 lakh, a 64% increase against a 71% rise in procurement volume. This disparity confirms that procurement benefits remain concentrated, with only approximately 20% of total registered farmers actually availing the MSP channel, as documented by Odisha TV (2021) and the Deccan Chronicle (2025).

Table 3: Farmer Awareness of Agricultural Marketing Reforms in Khurda District (Primary Survey, n=120)

Reform/Scheme	Aware (%)	Accessed/Utilised (%)	Not Aware (%)
MSP Procurement (PPC route)	86.7	64.2	13.3
e-NAM Portal	42.5	18.3	57.5
APMC Amendment 2006	31.7	12.5	68.3
AGMARKNET Price Portal	27.5	14.2	72.5
Direct Marketing Scheme	29.2	10.8	70.8

Source: Primary survey, Khurda district (October 2023 – March 2024).

Table 3 exposes a sharp disparity in reform awareness across Khurda farmers. While MSP procurement awareness reaches 86.7%, awareness of e-NAM (42.5%) and AGMARKNET (27.5%) is critically low, with utilisation rates even lower. The gap between awareness and utilisation particularly stark for e-NAM (18.3% use versus 42.5% awareness) reflects structural adoption barriers including limited internet access and training deficits (Mishra, 2020; Krishnamurthy, 2021).

Table 4: Marketing Channel Preference and Intermediary Cost Structure in Khurda (Primary Survey, n=120)

Marketing Channel	% of Respondents	Avg. Commission/Deduction (% of Sale Value)	Net Price as % of MSP
Government PPC (MSP route)	53.3	0	100.0
Local Trader/Arhatiya	28.3	8.2	78.4
Village Haat	11.7	5.5	84.6
e-NAM	4.2	1.5	97.2
Direct to Processor/FPO	2.5	2.0	95.8

Source: Primary survey, Khurda district (October 2023 – March 2024).

Table 4 confirms that while 53.3% of farmers use the formal government PPC route and realise 100% of MSP, 28.3% continue selling through local traders who extract 8.2% in commissions, yielding only 78.4% of MSP. e-NAM users (4.2%) achieve near-full price realisation (97.2%), validating digital market reform intent but highlighting the limited reach. These findings corroborate evidence that intermediary-driven channels remain structurally dominant for cash-constrained farmers (Roy et al., 2022; Selvaraj et al., 2022).

Table 5: Comparison of Net Farm Income Before and After Reform: Khurda District (Primary Survey, n=120)

Landholding Category	Avg. Annual Farm Income 2015–16 (₹)	Avg. Annual Farm Income 2022–23 (₹)	% Change
Marginal (<1 ha)	38,400	59,200	54.2
Small (1–2 ha)	68,500	1,06,800	55.9

Semi-Medium (>2 ha)	1,24,000	2,02,500	63.3
All Categories (avg.)	77,000	1,22,833	59.5

Source: Primary survey, self-reported by respondents, Khurda district.

Table 5 shows a substantial 59.5% average improvement in net farm income across all landholding categories. Semi-medium farmers recorded the highest gain (63.3%), while marginal farmers, despite a 54.2% improvement, retain critically low absolute incomes (₹59,200/year). This distributional inequality aligns with national-level findings that larger landholders capture disproportionately larger reform dividends (Nuthalapati et al., 2020; Chand & Singh, 2016).

Table 6: RMC Market Infrastructure Status in Khurda District: Key Indicators (2023)

Infrastructure Indicator	Availability in Khurda	% Odisha Mandis with Facility	Farmer Satisfaction (%)
Electronic Weighbridge	Available at Jatni RMC	58.2	61.3
Cold Storage Facility	Absent at sub-yards	18.5	17.4
e-NAM Integration	Partial (1 principal yard)	14.3	28.6
Assaying Laboratory	Absent at sub-yards	22.4	19.2
Price Display Board	Available	72.6	55.8
Paved Market Yard	Partially available	63.5	48.7

Source: OSAMB Annual Report (2023); Primary survey, Khurda district.

Table 6 reveals critical infrastructure deficiencies across Khurda's regulated markets. Cold storage coverage remains at only 18.5% statewide, with farmer satisfaction at a mere 17.4% in Khurda. e-NAM integration at sub-yards is absent, and only one principal yard is partially connected, yielding a satisfaction score of 28.6%. These gaps directly impede reform adoption at the grassroots level (NIAM, 2010; Nuthalapati et al., 2020).

6. Discussion

The results from Tables 1–6 demand discussion aligned with both stated objectives. Regarding the first objective awareness and adoption of reforms data reveal a pronounced asymmetry. MSP procurement, as a government-mediated intervention supported by an established PPC-PACS network, has achieved relatively high awareness (86.7%) and utilisation (64.2%) in Khurda. This is consistent with the broader Odisha experience, where P-PAS implementation from 2016–17 facilitated digital payments directly to farmers' bank accounts, institutionalising trust in the procurement process (Government of Odisha, 2021). In contrast, market-liberalisation instruments particularly e-NAM and AGMARKNET have achieved only limited penetration. The 42.5% awareness and 18.3% utilisation rate for e-NAM in Khurda is broadly consistent with national findings (Nuthalapati et al., 2020) but represents a significant gap, especially given that Odisha had incorporated single-license provisions relatively early among eastern states (Selvaraj et al., 2022). Regarding the second objective impact on price realisation, intermediary costs, and net income evidence is directionally positive but uneven. The consistent revision of MSP from ₹1,750/quintal in 2018–19 to ₹2,300/quintal in 2024–25 (Table 1) has

functioned as a structural price floor, raising income expectations and market bargaining consciousness among Khurda farmers. For the 53.3% accessing the formal PPC route, full MSP realisation is ensured. However, the 28.3% still selling through local traders receive only 78.4% of MSP due to commission deductions averaging 8.2% (Table 4). This intermediary persistence echoes findings by Ghosh (2013) and Roy et al. (2022), who documented the resilience of trader-farmer dependency structures among marginal cultivators facing post-harvest cash-flow pressures and storage deficit.

Odisha's aggregate procurement trajectory (Table 2) from 43.80 lakh MT in 2016–17 to 74.92 lakh MT in 2024–25, with MSP payments reaching ₹16,986 crore (Deccan Chronicle, 2025) reflects substantial policy progress. Nevertheless, as Odisha TV (2021) documented, only approximately 20% of total registered farmers availed the formal MSP channel, exposing a structural inclusivity gap. The Khurda income data (Table 5) confirms a 59.5% average income improvement, though marginal farmers at ₹59,200 annually remain economically vulnerable. This distributional pattern replicates national findings that reform benefits are captured disproportionately by better-endowed cultivators, consistent with Bisen and Kumar (2018) and Nuthalapati et al. (2020). The infrastructure deficit documented in Table 6 contextualises the awareness-utilisation gap. Without cold storage, assaying laboratories, and e-NAM connectivity at sub-yard level, small farmers in Khurda's peripheral areas cannot meaningfully participate in digitally reformed market channels (Kathayat, 2019; Krishnamurthy, 2021). Karnataka's experience, as documented by Aggarwal et al. (2017), demonstrates that electronic trading platforms improve farmer income by 10–15% only when supported by robust assaying and logistics infrastructure conditions largely absent at Khurda's sub-yards. The study's null hypothesis (H_0) is therefore rejected for MSP-linked procurement outcomes but cannot be fully rejected for market-liberalisation outcomes, as e-NAM adoption remains statistically marginal among Khurda farmers. The institutional architecture of KVK-Khurda, ATMA-Khurda, and OSAMB together represents an available coordination platform that, if aligned more decisively toward digital marketing literacy, could accelerate reform uptake significantly (NIAM, 2010; Chand & Singh, 2016).

7. Conclusion

This study evaluated the outcomes of agricultural marketing reforms in Khurda district, Odisha, using primary survey data from 120 farmers and secondary data from official databases for 2018–2024. MSP-based procurement has produced consistent income gains, benefiting approximately 53% of surveyed farmers at full price realisation, with overall net farm income improving by 59.5% over the study period. However, market-liberalisation instruments including e-NAM, AGMARKNET, and direct marketing remain substantially underutilised due to infrastructure deficits, inadequate awareness, and institutional inertia. Marginal farmers continue to receive critically low absolute incomes despite proportionate improvement. The study recommends targeted e-NAM capacity building at the block level, cold storage expansion at sub-yard level, systematic AGMARKNET dissemination through KVK-Khurda, and stronger enforcement of APMC fee-transparency norms as priority interventions for translating macro-level reform success into micro-level inclusivity in Khurda district.

8. References

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