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Effectiveness Of Rems And E-nam Platforms In Enhancing Agricultural Marketing In Karnataka

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ABSTRACT

The Regulated Market System (ReMS) in Karnataka and the electronic National Agriculture Market (e-NAM) have revolutionized agricultural marketing in India by enhancing price transparency, reducing middlemen dependency, and improving market efficiency. ReMS, introduced in 2014, has successfully digitalized APMCs through e-tendering, quality-based pricing, and direct digital payments, ensuring fair price realization for farmers. e-NAM, launched in 2016, aims to integrate APMCs across India into a unified national market, enabling farmers to access competitive pricing beyond their local mandis. However, technological barriers, infrastructure limitations, and resistance from APMCs have slowed e-NAM adoption. The study finds that ReMS has been more effective in intra-state market integration, whereas e-NAM has faced challenges in nationwide implementation. Despite this, both platforms have improved price discovery, reduced transaction costs, and empowered farmers. To maximize their impact, investment in digital infrastructure, policy harmonization, and farmer training programs are essential. A hybrid approach integrating ReMS features into e-NAM could create a more efficient and farmer-friendly agricultural marketing system in India.

Keywords: Agricultural marketing, ReMS, e-NAM, price discovery, APMC, digital trading, market efficiency, farmer empowerment, policy reforms.

INTRODUCTION

About half of India's workforce works in the agriculture sector, making the country predominantly an agrarian economy (Vetrivel and Manigandan, 2013). The nation's agricultural productivity and output have advanced considerably (Sihmar, 2014; Dhaliwal, 2015). Farmers continue to sell their produce in distress even after a great harvest has been completed (Bhanot et al., 2021). The nation's agricultural markets have undergone a variety of reform initiatives intended at boosting market accessibility, expanding market transparency, and giving farmers fair price (Mishra and Narayan, 2017; Manjula, 2021). In order to govern the markets for agricultural commodities, the majority of Indian states passed the Agricultural Produce Marketing (Regulation) Act (APMRA) in the 1960s and 1970s (Chand, 2016). This regulation brought all of the major wholesale markets within its purview. According to the Agricultural Produce Market Committee, registered market intermediaries were required to sell agricultural products only at specific controlled markets (Aggarwalet al., 2017). Despite previous revisions, the APMC Act has been instrumental in establishing order in agricultural markets. Farmers sell their produce to dealers and agents at APMCs, which are true marketplaces. Agricultural markets, however, are unable to keep up with the shifting dynamics of the value chain and agricultural products. According to Ul-Rehman (2012), India's agricultural markets continue to be fragmented and expensive, which causes problems

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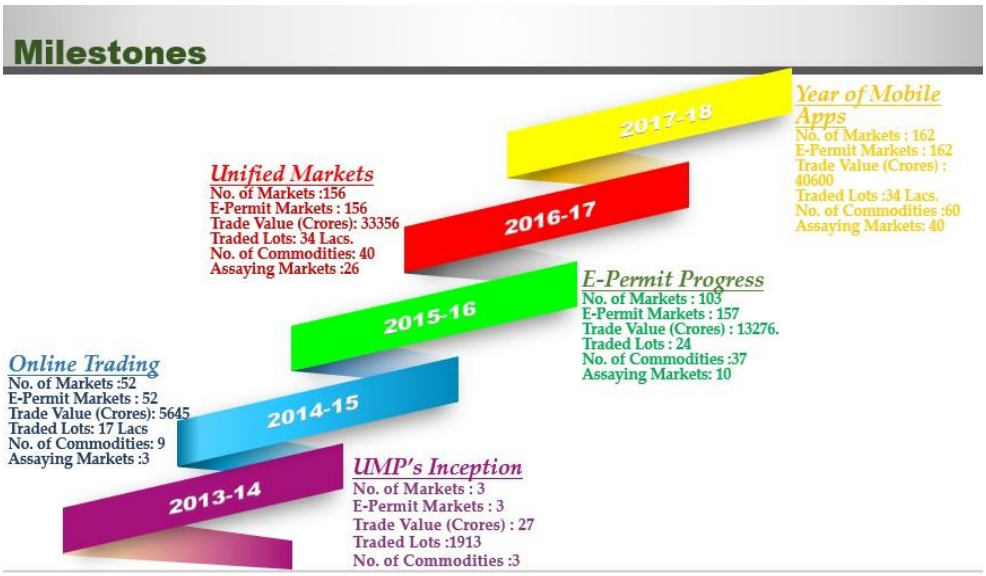
like price volatility, disruptions in internal trade, a lack of incentives to improve quality and productivity, weak market signals, and low competitiveness in both domestic and foreign markets. Furthermore, because of the extended network of middlemen, farmers earn a very tiny share of the production (Meena et al., 2019). Farmers sell their produce to dealers and agents in APMCs, which are real marketplaces.

The state that is most actively adopting the Model Act of 2003 is Karnataka. Using current information and communication technology, the state devised the e-tendering system, a revolutionary technique of price discovery, to promote ethical marketing practices and guarantee farmers fair prices for their produce. Through an online platform, the state's agricultural markets were integrated thanks to the e-tendering. A distinct organization called Rashtriya e-Market Service Private Limited (ReMS) was established to provide e-marketing services after the Karnataka government and the National Commodity Derivative Exchange (NCDEX) adopted the Unified Market Platform (UMP) idea in 2014. It allows all traders in the state access to a single market license so they can trade agricultural commodities online in APMC markets. The method was followed by Gujarat, Maharashtra, Andhra Pradesh, and Telangana after it proved successful in Karnataka.

A central sector program for furthering the notion of the National Agricultural Market, or NAM, was subsequently authorized by the Government of India's Cabinet Committee (Chand 2016). To boost competition in the agriculture industry, the Indian government launched the Electronic National Agriculture Market (e-NAM) in 2016. To develop a single national market for agricultural products, the e-NAM, a pan-India electronic trading system, links the existing APMC mandis.

The study demonstrates that Karnataka's agricultural commodities market is integrated thanks to the implementation of Rashtriya e-Market Service Private Limited (ReMS) in 2013 and e-NAM in 2016. 7,600 Agricultural Produce Market Committees (APMC) mandis existed in India as of 2019. At the currently, 1466 markets from 23 states and 4 UTs are connected to the e-NAM network. In Karnataka, there are roughly 377 sub-APMCs and 162 Main Agricultural Produce Market Committee (APMC)-regulated markets. Farmers are able to sell their produce at fair prices because to these markets.



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State wise number of APMCs Regulated Mandis

Sl. No.	Name of the State/UT	Total number of APMCs Regulated Mandis
1	Andhra Pradesh	191
2	Andaman & Nicobar Islands	No APMC Act
3	Arunachal Pradesh	13
4	Assam	226
5	Bihar	APMC Act Repealed
6	Chandigarh	1
7	Chhattisgarh	187
8	Dadra & Nagar Haveli	No APMC Act
9	Daman & Diu	No APMC Act
10	Goa	8
11	Gujarat	400
12	Haryana	281
13	Himachal Pradesh	56
14	Jammu & Kashmir	25
15	Jharkhand	201
16	Karnataka	513
17	Kerala	No APMC Act
18	Lakshadweep	No APMC Act
19	Madhya Pradesh	545
20	Maharashtra	902
21	Manipur	APMC Act not implemented
22	Meghalaya	2
23	Mizoram	APMC Act not implemented
24	Nagaland	19
25	NCT of Delhi	16
26	Odisha	436
27	Puducherry	8
28	Punjab	435
29	Rajasthan	454
30	Sikkim	APMC Act not implemented
31	Tamil Nadu	283
32	Telangana	260
33	Tripura	21
34	Uttar Pradesh	623
35	Uttarakhand	58
36	West Bengal	475
	Total	**6639**

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No. of Mandis doing online trading LIVE

State	No. of APMC	Mandis doing Online Trade
ANDAMAN AND NICOBAR ISLANDS	1	0
ANDHRA PRADESH	33	10
ASSAM	3	0
BIHAR	20	0
CHANDIGARH	1	1
CHHATTISGARH	20	1
GOA	7	1
GUJARAT	144	3
HARYANA	108	47
HIMACHAL PRADESH	38	1
JAMMU AND KASHMIR	17	0
JHARKHAND	19	0
KARNATAKA	5	0
KERALA	6	0
MADHYA PRADESH	139	1
MAHARASHTRA	133	10
NAGALAND	19	0
ODISHA	66	17
PUDUCHERRY	2	1
PUNJAB	79	3
RAJASTHAN	166	24
TAMIL NADU	213	75
TELANGANA	57	0
TRIPURA	7	0
UTTAR PRADESH	125	12
UTTARAKHAND	20	6
WEST BENGAL	18	10
Total	1466	223

RESEARCH METHODOLOGY

Market research, scientific publications, and government studies will be the sources of secondary data. To understand more about user experiences and satisfaction levels, qualitative methodologies will be applied.

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OBJECTIVES

1. To explore ReMS's and e-NAM's operating mechanisms.
2. To evaluate both platforms' effectiveness in terms of price realization, transaction costs, and user accessibility.
3. To examine how these platforms effect farmers' revenue and market penetration.

REVIEW OF LITERATURE

In order to modernize Agricultural Produce Market Committees (APMCs) utilizing a public-private partnership model, Karnataka introduced the ReMS system in 2014 (Chand, Prasad, & Singh, 2022). To encourage competitive pricing and decrease the role of middlemen, it used unified licensing and online bidding. Research reveals that by minimizing market exploitation and delivering improved price discovery mechanisms, ReMS has helped farmers realize higher prices (Sharma & Patel, 2020). Furthermore, ReMS has called for quality-based pricing and grading to assure that farmers are adequately reimbursed for their produce (Joshi & Reddy, 2021). However, Chand et al. (2022) note out a number of obstacles in implementing ReMS, including infrastructure restrictions in rural areas, farmers' ignorance, and technological hurdles. Notwithstanding these shortcomings, ReMS has mainly been successful in boosting market efficiency and transparency in Karnataka's farm industry.

The bigger purpose of the e-NAM program, which was initiated in 2016, was to connect APMCs from all over India into a single online platform. Farmers can trade across states with e-NAM, boosting their access to markets, in contrast to ReMS, which functions at the state level (Mishra, Singh, & Rao, 2021). Research reveals that by delivering real-time pricing data and minimizing information asymmetry, e-NAM has enhanced price transparency (Rathod & Kumar, 2022). Additionally, Verma and Rao (2023) claim that e-NAM has provided farmers more negotiating strength by enabling them to sell their produce directly in far-off marketplaces, bypassing local traders. However, thanks to technological restrictions, digital illiteracy, and poor internet connectivity in rural locations, Karnataka's adoption of e-NAM is still quite low (Rao & Singh, 2021). Further delaying e-NAM's general adoption is the fact that APMCs frequently oppose its implementation out of fear of losing their regulatory control (Patil, Natarajan, & Kumar, 2023).

Patil et al.'s (2023) study of ReMS and e-NAM in Karnataka demonstrates considerable discrepancies in their effectiveness. Because of its state-regulated structure, ReMS has been more effective in Karnataka, while e-NAM has had problems being accepted locally even though it has the ability to integrate markets nationally. The paper adds that although structured price discovery has been made easier by ReMS, e-NAM offers a greater market reach but confronts infrastructural limits. Furthermore, the implementation of both systems has been impeded by middlemen's resistance and a lack of farmer awareness, requiring further legislative measures to enhance their impact (Joshi, 2023).

Numerous professionals have recognized basic challenges connected to the implementation of various digital marketing methods. Since many APMCs lack the digital infrastructure and internet connectivity essential to support online transactions, infrastructure limitations continue to be a serious concern (Sharma, 2020). Furthermore, just 30% of Karnataka farmers are aware of e-NAM's characteristics, and even fewer actively participate because of their poor level of digital literacy, according to Kumar et al. (2022). Traditional market intermediaries' reluctance, motivated by a fear of losing their supply chain clout, is another important impediment (Rao & Singh, 2021). Focused government activities are needed to

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address these difficulties, such as investment for digital infrastructure, farmer education campaigns, and incentives for APMCs to use digital trading platforms (Verma, 2022).

In order to optimize the efficacy of ReMS and e-NAM, researchers recommend a number of proposals. Joshi (2023) underlines the significance of improving rural digital infrastructure so that even farmers who reside far away can access e-NAM's online marketplace. To promote farmer engagement, digital literacy-focused capacity-building activities ought to be adopted (Verma, 2022). The synergy between state and national-level trading systems may also be increased by government incentives for APMCs to deploy e-NAM in addition to ReMS (Patil, 2023). Furthermore, Sharma (2023) proposes that in order to develop a cohesive and effective agriculture market ecology, policymakers should attempt to combine ReMS with e-NAM. The study suggests that ReMS has increased price discovery and transparency at the state level in Karnataka, where it has been considerably more successful. Although e-NAM has the potential to create a single national market, its usefulness is limited by acceptance concerns and technological obstacles. Improving the performance of both systems in Karnataka's agricultural marketing environment will require filling up infrastructure gaps, boosting farmer knowledge, and employing digital platforms. For farmers, traders, and other stakeholders to gain the long-term benefits of these digital marketing advances, further research and policy help will be required.

Advantages of eNAM and ReMS

By introducing digital platforms, boosting transparency, and improving price realization for farmers, the Regulated Market System (ReMS) in Karnataka and the electronic National Agriculture Market (e-NAM) at the national level have radically revolutionized agricultural marketing. Both approaches strive to increase equitable market access for farmers, modernize conventional Agricultural Produce Market Committees (APMCs), and diminish the dominance of middlemen.

By adopting digital payment systems, grading systems, and online auctions, ReMS, which was initially deployed in Karnataka, has effectively built a single market throughout the state. By fostering competitive bidding and minimizing dealer malpractice, it has aided farmers in securing greater prices for their produce. Better agricultural practices are fostered by ReMS's quality-based pricing mechanism, which guarantees that farmers earn rewards for producing products of the greatest level. Direct digital payments have also minimized the need for currency exchanges and cut payment delays, boosting the process' security and transparency. Electronic weighbridges, display boards, and storage facilities are examples of infrastructure developments in APMCs that have further streamlined operations for the advantage of farmers and traders.

However, because e-NAM runs nationally, farmers are not limited to selling their produce at local mandis but can do so across state lines. Farmers are guaranteed competitive pricing for their crops because to the real-time online bidding system, which makes price discovery easier. Farmers now have more negotiating power and access to a bigger market of buyers, including exporters and food processors, thanks to e-NAM's decrease of the role of middlemen. Additionally, the platform provides quality standardization and grading, which connects farmers with high-end markets. Additionally, e-NAM's digital payments ensure speedier settlements, which minimizes farmers' financial concerns. Farmers may store their produce and sell it when the market is correct thanks to the platform's integration of logistics and warehousing services, which further boosts efficiency.

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Due to its controlled and organized deployment, ReMS has been more effective in Karnataka; yet, e-NAM provides a larger reach by linking farmers to a nationwide market. Both systems foster fair pricing, market efficiency, and digital change; yet, governmental backing, farmer expertise, and infrastructure development are necessary for them to be effective. These platforms have the ability to drastically revolutionize agricultural commerce in India by overcoming difficulties including technology barriers, internet accessibility, and opposition from conventional APMC players. This would ultimately enhance agricultural incomes and market competitiveness.

FINDINGS

According to the study, the electronic National Agriculture Market (e-NAM) and the Regulated Market System (ReMS) have both considerably revolutionized agricultural marketing by boosting price discovery, efficiency, and transparency. Karnataka farmers that utilize ReMS have gained from digital payments and competitive bidding, which guarantee higher price realization and less exploitation by middlemen. Similar to this, farmers may now contact more consumers outside of their local mandis thanks to e-NAM's nationwide platform, which has enhanced market potential. Despite the fact that both systems have made agricultural trade more efficient, constraints like limited digital literacy, technological restrictions, and hostility from established market actors preclude wider deployment.

One of the most important conclusions is that, although e-NAM has interoperability challenges due of differences in state-level market legislation, ReMS has efficiently integrated intra-state APMCs through an effective digital auction process. Furthermore, both systems' direct digital payments have ensured quicker financial settlements, lessening the threats of fraud and payment delays associated to conventional mandi transactions. By encouraging farmers to concentrate on grading and standardization, the quality-based pricing mechanisms in both platforms have enabled them to command premium rates for produce of superior quality. ReMS's success in Karnataka, however, is credited to increased infrastructure development and state-level governance, whilst e-NAM continues to encounter difficulties such as poor awareness, inconsistent state adoption, and APMC resistance to full integration.

A variety of difficulties still exist in spite of policy reforms and technology developments. The widespread adoption of e-NAM and ReMS is limited by infrastructural shortcomings, farmers' lack of digital literacy, and unstable internet connectivity in rural areas. Furthermore, several regions' commission agents and APMC officials oppose these platforms out of concern that they may lose control over agricultural commerce. Even if ReMS has had some success in Karnataka, other states must adopt and imitate its model for broader agricultural market reform. e-NAM, on the other hand, has huge potential to combine agricultural trade at the national level; yet, it needs incentives for APMCs to actively join, investment in digital infrastructure, and tougher enforcement of laws.

CONCLUSION

The study underlines that by increasing transparency, boosting price realization, and lowering the role of middlemen, the Regulated Market System (ReMS) and the electronic National Agriculture Market (e-NAM) have both been significant in modernizing agricultural marketing in India. Farmers now earn a higher market value for their produce thanks to ReMS's well-organized digital auction system in Karnataka, which has effectively enabled fair and competitive pricing. However, with its national-level integration, e-NAM has the potential to integrate India's agricultural market, allowing farmers access to a bigger

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consumer base and improved price discovery. However, political assistance, infrastructure development, and platform adoption are all necessary for these platforms to flourish.

Notwithstanding the benefits, a number of barriers impede these platforms' full potential. Implementation is still considerably limited by low digital literacy, inadequate internet connectivity in rural regions, and opposition from APMC stakeholders. While e-NAM still has hurdles in universal adoption across states due to differing legal frameworks and reluctance from traditional merchants and market intermediaries, ReMS has been generally effective within Karnataka due to good governance and methodical policy execution. To foster increased involvement and effective use of these platforms, farmers' awareness and training programs must also be improved.

Investment in digital infrastructure, increased farmer education, and state-by-state policy harmonization are necessary to fully exploit the potential of ReMS and e-NAM. To further improve these platforms' efficiency, logistics, warehousing, and digital payment systems should be strengthened. Higher farmer incomes, less exploitation, and a more competitive agricultural economy can result from incorporating ReMS best practices into e-NAM to develop a more unified and efficient agricultural marketing system. ReMS and e-NAM have the potential to considerably aid in agricultural market reforms and improve the efficiency, transparency, and farmer-friendliness of Indian agriculture if these challenges are effectively overcome.

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