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## A Study on Problems and Challenges of e-Agricultural Marketing and the Constitutional Remedies

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### Abstract

This study examines the key problems and challenges involved in e-agricultural marketing, along with possible remedies to address them. The main objective of e-agricultural marketing is to provide farmers with improved market access, fair prices for their produce, and reduced dependence on intermediaries through the use of digital platforms. Despite its potential, several obstacles limit its effective adoption. These include low levels of digital literacy among farmers, poor internet connectivity in rural areas, lack of trust in online systems, issues related to price transparency, and inadequate logistics support. Small and marginal farmers are particularly affected due to their limited resources and lack of awareness. The study emphasizes the importance of digital training programmes, development of rural digital infrastructure, transparent pricing mechanisms, and supportive government policies. Proper implementation of these measures can increase farmer participation, enhance income levels, and strengthen the overall agricultural marketing system.

**Keywords:** E-Agricultural Marketing, Digital Agriculture, e-NAM, Farmer Adoption, Digital Infrastructure, Market Transparency, Agricultural Reforms, Government Support.

### 1. Introduction

Agriculture plays a crucial role in the economic development of many countries, particularly in India, where a significant share of the population depends on farming for its livelihood. With advancements in information and communication technologies, e-agricultural marketing has emerged as a modern method of linking farmers directly to markets through digital platforms. These systems seek to enhance market access, ensure better price realization, reduce the dependence on intermediaries, and promote transparency in agricultural trade.

Despite these potential advantages, the adoption of e-agricultural marketing faces several challenges at the grassroots level. Limited digital literacy among farmers, poor internet connectivity in rural areas, lack of awareness about online platforms, and resistance to technological change restrict its effective use. Additionally, problems related to logistics, online payment systems, data security, and trust in digital transactions further slow the growth of e-agricultural marketing.

In view of these challenges, it is essential to identify suitable remedies to strengthen e-agricultural marketing practices. Steps such as improving digital infrastructure, offering training and capacity-building programmes, ensuring

transparent price discovery mechanisms, and implementing supportive government policies can help overcome existing barriers. Addressing these issues will enable e-agricultural marketing to become more inclusive, efficient, and beneficial for farmers, traders, and the agricultural economy as a whole.

### 2. Statement of Problem

Although e-agricultural marketing was introduced with the aim of modernizing the agricultural marketing system and improving farmers' access to markets, its implementation has not yet achieved the expected level of effectiveness. A large number of farmers, particularly small and marginal farmers, continue to depend on traditional marketing channels due to limited awareness and low levels of digital literacy. Poor internet connectivity and insufficient access to digital devices in rural areas further limit their participation in e-marketing platforms. Moreover, price volatility, the absence of transparent price discovery mechanisms, and the continued dominance of intermediaries reduce farmers' confidence in online markets. Challenges related to logistics, storage, grading, and the timely delivery of agricultural produce also hinder the success of e-agricultural marketing. In addition, concerns regarding trust, data security, and delays in digital payments discourage farmers from fully adopting these

platforms. Although various government initiatives and policies have been introduced to promote e-agricultural marketing, their effective implementation at the grassroots level remains a challenge. As a result, the potential benefits of e-agricultural marketing—such as fair pricing, reduced exploitation, and improved farmer incomes—remain largely underutilized. This situation highlights the need for a detailed study of the existing problems and challenges in e-agricultural marketing, as well as the identification of appropriate remedies to support sustainable agricultural development.

### 3. Review of Literature

Aker (2011) stated that e-agricultural marketing platforms help reduce information asymmetry between farmers and buyers by providing real-time price and market information. The study emphasized that access to mobile-based market data enables farmers to make informed selling decisions. It highlighted that ICT tools improve bargaining power, especially for small farmers. However, the benefits were uneven due to limited rural connectivity. The author concluded that digital inclusion is essential for maximizing the impact of e-marketing [1].

Mittal and Mehar (2016) stated that adoption of e-agricultural marketing in developing countries is strongly influenced by farmers' education level and digital skills. Their research revealed that lack of awareness and training prevents effective use of online platforms. Infrastructure gaps further widen the digital divide. The study stressed the importance of capacity-building initiatives. The authors suggested government-led digital literacy programs as a remedy [2].

Chand (2017) stated that reforms in agricultural marketing, including e-platforms, are crucial for improving price discovery and market efficiency. The study pointed out that traditional mandi systems limit competition and transparency. E-agricultural marketing was seen as a solution to integrate national markets. However, policy coordination among states was identified as a challenge. The author emphasized institutional reforms for success [3].

Rao and Singh (2018) observed that poor internet connectivity and limited access to digital devices significantly hinder the adoption of e-agricultural marketing. Their study pointed out that farmers in rural areas often face unstable network services, which restrict regular use of digital platforms. As a result, many farmers continue to rely on intermediaries due to these technological limitations. The authors also noted clear regional differences in adoption levels and emphasized the need for greater investment in rural digital infrastructure [4].

Kumar *et al.* (2019) highlighted that weaknesses in logistics considerably reduce the efficiency of e-agricultural marketing systems. Their research identified major challenges such as inadequate storage facilities, poor transportation networks, and the absence of proper grading mechanisms. Even when farmers succeed in selling products online, delays in delivery negatively affect their earnings. The study emphasized the importance of developing integrated supply chains and suggested strengthening logistics as a crucial solution [5].

### 4. Research Gap of the Study

Existing studies on e-agricultural marketing largely concentrate on its benefits, policy frameworks, and technological adoption, while comparatively little attention is paid to the practical challenges faced by farmers at the grassroots level. Most research highlights aspects such as platform design and price transparency but does not

sufficiently address issues related to digital literacy, trust, and usability, particularly among small and marginal farmers. In addition, there is a noticeable lack of region-specific studies that examine infrastructural and socio-economic differences affecting the adoption of e-agricultural marketing. Empirical evidence on the effectiveness of remedial measures, including training programmes, logistics integration, and financial linkages, also remains limited. Furthermore, only a few studies assess the long-term impact of e-agricultural marketing on the stability of farmers' incomes. Therefore, there is a clear need for a comprehensive study that bridges these research gaps by examining both the challenges and the practical remedies associated with e-agricultural marketing.

### 5. Objectives

- i). To find out the major problems faced by farmers in adopting e-agricultural marketing systems.
- ii). To analyse the challenges related to digital infrastructure, internet connectivity, and technological awareness in e-agricultural marketing.
- iii). To examine the role of e-agricultural marketing platforms in improving price discovery and market access for farmers.
- iv). To evaluate the effectiveness of existing government initiatives and policies supporting e-agricultural marketing.
- v). To understand the impact of e-agricultural marketing on farmers' income, transparency, and decision-making process.
- vi). To suggest suitable remedies and strategies to overcome the identified problems and challenges in e-agricultural marketing.

### 6. Methodology

This research is based on both doctrinal and non-doctrinal research. The sources of data collected from different newspaper, journals, magazines, All India Radios and e-resources. This research is used stratified random sampling. There are 107 sample size of the respondent is used. In this research adopted some of the statistical tools such as Plus method and average method. The duration of the research is three months.

### 7. Significance of the Study

This study is significant for the government as it offers clear insights into the practical problems and challenges involved in implementing e-agricultural marketing systems at the grassroots level. The findings can assist policymakers in assessing the effectiveness of existing digital agriculture initiatives and in identifying gaps related to infrastructure, training, and policy execution. The research can also support the formulation of farmer-centric policies, enhance digital outreach programmes, and strengthen transparency and accountability in agricultural markets. Overall, the study helps the government promote inclusive and sustainable reforms in agricultural marketing.

From the perspective of a researcher and student, this study enhances my understanding of the interaction between technology and traditional agricultural marketing systems. It provides practical exposure to the real-world challenges faced by farmers and helps in developing analytical and research skills. The study also contributes to academic knowledge and can serve as a useful reference for future research or professional work in the fields of agriculture, marketing, or policy studies. Additionally, it strengthens my ability to

propose realistic and implementable solutions based on research findings.

### 8. Hypothesis of Study

This research is based on the following hypothesis are:

- i). Poor digital infrastructure and low farmer illiteracy significantly hinder the adoption of e-agricultural marketing platforms in rural India.
- ii). Targeted remedies like subsidized connectivity, training programs and anti-fraud measures will substantially improve farmer participation and market efficiency.

### 9. Limitations of Study

The study is based on a limited sample size, which may not fully represent the entire farming community. The responses collected from farmers may be subjective and influenced by personal experiences or varying levels of awareness. Due to time constraints, the study could not undertake a detailed or long-term analysis of the outcomes of e-agricultural marketing. It focuses mainly on selected regions, which limits its geographical coverage. Rapid changes in digital technology may reduce the relevance of certain findings over time. Limited access to reliable primary data affected the depth of the analysis, while dependence on secondary data sources may have resulted in outdated or biased information. In addition, the study does not examine platform-specific technical challenges in detail, and socio-economic differences among farmers were not explored comprehensively.

### 10. Result and Discussion

#### Part-I: Doctrinal Research

#### i). E-Agricultural Marketing and the Remedies within the Law and Economics Framework(Introduction)

E-agricultural marketing refers to the use of digital platforms, electronic marketplaces, and information and communication technologies to enable the buying and selling of agricultural produce. Its core objective is to reduce transaction costs, improve price discovery, expand market access, and ultimately increase farmers' incomes by directly connecting producers with buyers across different regions. In India, initiatives such as the Electronic National Agriculture Market (e-NAM) reflect policy efforts aimed at integrating fragmented agricultural markets into a unified digital trading system. However, despite its significant economic potential, e-agricultural marketing continues to face several structural, legal, and institutional challenges that limit its overall effectiveness<sup>[6]</sup>.

From a law and economics perspective, e-agricultural marketing can be viewed as a market-enhancing mechanism intended to improve efficiency by addressing information asymmetry, reducing the monopolistic power of intermediaries, and lowering enforcement and coordination costs. Legal frameworks governing agricultural markets—particularly State APMC laws, rules relating to contract enforcement, payment security, and data protection—play a decisive role in determining economic outcomes. When legal systems are outdated or inefficient, they tend to increase transaction costs and uncertainty, which discourages participation in digital markets and weakens incentives for private investment as well as farmer adoption<sup>[7]</sup>.

The law and economics approach emphasizes that effective remedies must ensure alignment between legal regulation and economic incentives. Legal reforms such as the rationalization of market fees, protection of digital transactions, establishment of secure payment mechanisms, and

enforcement of data privacy safeguards are essential to building trust and encouraging participation in e-agricultural marketing systems. At the same time, economic measures—such as investment in digital infrastructure, logistics networks, and farmer capacity-building—must be supported by clear, consistent, and predictable legal rules. Therefore, analyzing e-agricultural marketing through the combined lens of law and economics helps identify remedies that promote efficiency, equity, and the sustainable development of agricultural markets<sup>[8]</sup>.

#### ii). Constitutional Philosophy and E-Agricultural Jurisprudence in India

From a constitutional perspective, e-agricultural marketing represents an effort to give practical effect to the idea of an integrated national market. Article 301 of the Constitution guarantees the free movement of agricultural produce across State boundaries, a principle that is fundamental to the functioning of digital agricultural marketplaces. Simultaneously, Articles 19(1)(g) and 14 protect farmers against discriminatory or unreasonable regulatory restrictions that could limit their participation in electronic trading platforms<sup>[9]</sup>.

Judicial interpretation of agricultural marketing laws has consistently emphasized that regulatory mechanisms must be reasonable, non-arbitrary, and oriented towards the provision of services rather than revenue generation. The Supreme Court has repeatedly held that market fees and regulatory controls must bear a direct nexus with the services provided and should not operate as barriers to trade. This line of jurisprudence reflects the broader constitutional philosophy that legal regulation should reduce transaction costs and facilitate economic efficiency<sup>[10]</sup>.

The recognition of the right to privacy as a fundamental right under Article 21 has further strengthened the legal framework governing e-agricultural marketing. Digital platforms that collect, store, and process farmers' data are constitutionally required to ensure data security, transparency, and informed consent. In this manner, constitutional philosophy not only supports technological innovation in agricultural markets but also imposes necessary safeguards to protect farmers' rights within the digital marketplace<sup>[11]</sup>.

#### iii). Discussion on Evolution

The existing literature indicates that the development of e-agricultural marketing in India has been gradual rather than transformative. Initial information and communication technology (ICT) initiatives were largely confined to the dissemination of market and price information, while subsequent reforms sought to enable actual electronic trading of agricultural produce. However, scholars consistently emphasize that technological interventions alone are insufficient to bring about meaningful change in agricultural markets without corresponding legal and institutional reforms<sup>[12]</sup>.

The introduction of the Electronic National Agriculture Market (e-NAM) represented an important milestone, as it aimed to link multiple State-regulated markets through a single digital platform. Nevertheless, academic studies point out that the effectiveness of e-NAM is heavily dependent on supportive State-level legal amendments, adequate infrastructure, and sustained efforts toward farmer capacity building. Recent scholarship further highlights that the future of e-agricultural marketing lies in deeper integration between digital platforms, logistics networks, financial services, and

collective farmer institutions such as Farmer Producer Organizations (FPOs) [13].

**11. Relevant Case Law**

**Modern Dental College & Research Centre v. State of Madhya Pradesh, (2016) 7 SCC 353:** This decision highlights the significance of regulatory frameworks for market systems that operate through technology and involve private participation. The Supreme Court observed that although digital or privately operated platforms may enhance efficiency, State regulation remains essential to prevent exploitation and to ensure fairness and public interest. When applied to e-agricultural marketing, this principle is relevant to the regulation of digital agri-platforms, online mandis, and agri-tech companies that increasingly mediate agricultural trade [14].

**Centre for Public Interest Litigation v. Union of India, (2012) 3 SCC 1:** In this landmark judgment, the Supreme

Court emphasized the need for transparency, fair allocation of public resources, and the use of technology as a tool to prevent corruption. Agricultural markets and digital platforms such as e-NAM rely heavily on public infrastructure, regulatory permissions, and data. The reasoning adopted by the Court supports the adoption of transparent, technology-driven systems in agricultural marketing to ensure accountability and equitable access [15].

**Internet and Mobile Association of India v. Reserve Bank of India, (2020) 10 SCC 274:** This case is particularly relevant to the financial architecture of e-agricultural marketing. The Supreme Court recognized the growing importance of digital payments and online financial systems in modern economic activity. Such systems form a critical component of e-agricultural platforms, especially in facilitating timely farmer payments, access to credit, and insurance services. The judgment thus reinforces the legal legitimacy of digital financial mechanisms that support agricultural markets [16].

**Part-2: Non-Doctrinal Research**

**Table 1:** Have you ever used an e-agricultural marketing platform to buy or sell farm produce?

Indicators	No	Yes	Total
Metropolitan	12(14.81)	4(15.38)	16(14.95)
Rural	26(32.09)	7(26.92)	33(30.84)
Semi Urban	21(25.92)	3(11.53)	24(22.42)
Urban	22(27.16)	12(46.15)	34(31.77)
Total	81(75.70)	26(24.29)	107(100.00)

Source: Primary data

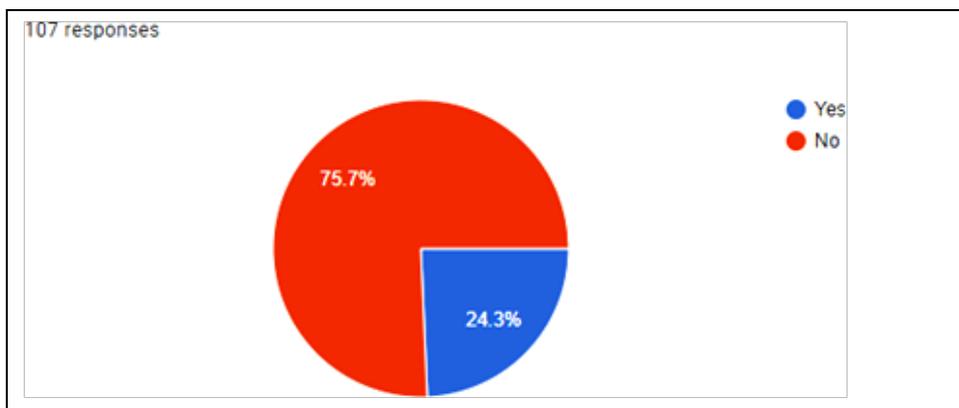


Table No. 1 shows the usage of e-agricultural marketing platforms across different areas. Out of 107 respondents, a large majority, 75.70 percentage of the respondents, have not used such platforms, while only 24.29 percentage of the respondents reported usage, indicating low overall adoption.

Urban areas show relatively higher participation, whereas rural, semi-urban, and metropolitan areas record limited usage. Overall, the table highlights low engagement with e-agricultural marketing platforms, with comparatively better adoption among urban respondents.

**Table 2:** Remedies would help improve e-agricultural marketing

Indicators	Better internet infrastructure in villages	Government subsidies for smartphones/data	Simple training workshops for farmers	Stricter rules against fraud and fake sellers	Total
Metropolitan	3(12.00)	4(16.00)	4(12.90)	5(19.23)	16(14.95)
Rural	10(40.00)	4(16.00)	12(38.70)	7(26.92)	33(30.84)
Semi Urban	5(20.00)	7(28.00)	9(29.03)	3(11.53)	24(22.42)
Urban	7(28.00)	10(40.00)	6(19.35)	11(42.30)	34(31.77)
Total	25(23.36)	25(23.36)	31(28.97)	26(24.29)	107(100.00)

Source: Primary data

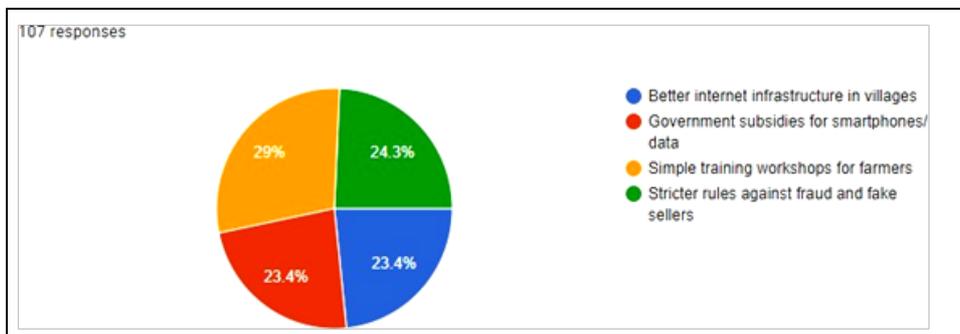


Table No. 2 presents the remedies suggested to improve e-agricultural marketing. Simple training workshops are the most preferred remedy, suggested by 28.97 percentage of the respondents, followed by stricter rules against fraud 24.29 percentage of the respondents and both better internet infrastructure and government subsidies for smartphones/data 23.36 percentage of the respondent each. Rural respondents

mainly emphasized internet access and training, semi-urban areas focused on subsidies and training, while urban respondents favoured subsidies and stricter regulations. Overall, the findings highlight the need for better infrastructure, training, financial support, and strong regulatory measures to promote e-agricultural marketing.

**Table 3:** Government support is essential to overcome e-agri marketing challenges.

Indicators	Agree	Disagree	Neutral	Strongly Agree	Strongly Disagree	Total
Metropolitan	5(14.28)	1(16.66)	0(0.00)	10(20.83)	0(0.00)	16(14.95)
Rural	11(31.42)	1(16.66)	4(30.76)	14(29.16)	3(60)	33(30.84)
Semi Urban	9(25.71)	2(33.33)	7(53.84)	4(8.33)	2(40)	24(22.42)
Urban	10(28.57)	2(33.33)	2(15.38)	20(41.66)	0(0.00)	34(31.77)
Total	35(32.71)	6(5.60)	13(12.14)	48(44.85)	5(4.67)	107(100.00)

Source: Primary data

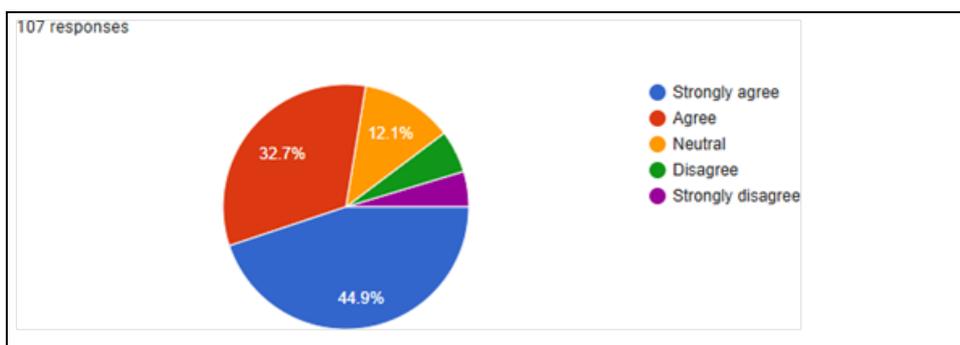


Table No. 3 highlights respondents' views on the importance of government support in overcoming challenges in e-agricultural marketing. A clear majority support the statement, with 44.85 percentage of the respondents strongly agreeing and 32.71 percentage of the respondents agreeing, while only a small share disagreed or strongly disagreed. Support is high across all areas, especially in metropolitan, rural, and urban regions, though semi-urban respondents show slightly more neutral views. Overall, the table reflects a strong consensus that government support is essential for improving e-agricultural marketing.

**12. Testing of Hypothesis**

**Hypothesis No.1:** Table No. 1 is used to test the hypothesis regarding the relationship between place of residence and the adoption of e-agricultural marketing platforms. The data show that out of 107 respondents, 75.70 percentage of the respondents have not used these platforms, while only 24.29 percentage of the respondents have adopted them. Adoption is found to be particularly low in rural and semi-urban areas, whereas urban respondents show relatively higher usage. This variation clearly indicates that place of residence influences the adoption of e-agricultural marketing platforms. Therefore,

the null hypothesis (H<sub>0</sub>) is rejected and the alternative hypothesis (H<sub>1</sub>) is accepted, confirming that place of residence has a significant effect on the adoption of e-agricultural marketing platforms.

**Hypothesis No.2:** Table No. 2 shows that the remedies suggested for improving e-agricultural marketing vary across different areas. Rural respondents mainly preferred better internet infrastructure 40 percentage of the respondents and training workshops 38.70 percentage of the respondents, while semi-urban respondents emphasized training workshops 29.03 percentage of the respondents and government subsidies 28 percentage of the respondents. In urban and metropolitan areas, stricter rules against fraud 42.30 percentage of the respondents percentage of the respondents and 19.23 percentage of the respondents and subsidies for smartphones/data 40 percentage of the respondents and 16 percentage of the respondents were given more importance. These differences clearly indicate that preferences differ by area. Therefore, the null hypothesis (H<sub>0</sub>) is rejected and the alternative hypothesis (H<sub>1</sub>) is accepted, indicating a significant association between the type of area and the remedies suggested to improve e-agricultural marketing.

### 13. Conclusion

This study uses both doctrinal and non-doctrinal approaches to understand the problems, challenges, and remedies of e-agricultural marketing. The doctrinal analysis highlights that e-agricultural marketing can improve market access and farmer income when supported by strong policies, digital infrastructure, and government initiatives. The non-doctrinal findings reveal that although farmers are aware of digital marketing platforms, actual adoption is low due to poor internet connectivity, lack of digital literacy, high costs, and fear of online fraud. Regional disparities are evident, with rural and semi-urban areas facing greater difficulties than urban areas. Farmers who received training showed better confidence in using e-platforms. The study concludes that e-agricultural marketing has strong potential but requires area-specific remedies, improved infrastructure, training, affordability, and regulatory support.

### 14. Suggestion

- i). The government should strengthen digital infrastructure in rural and semi-urban areas by improving internet connectivity and network reliability.
- ii). Regular training programmes and awareness campaigns should be conducted to improve farmers' digital literacy and confidence in using e-agricultural marketing platforms.
- iii). Affordable smartphones and data plans should be provided through subsidies or special schemes to encourage wider adoption.
- iv). Simple and user-friendly e-marketing platforms in local languages should be developed to make them accessible to all farmers.
- v). Strict rules and monitoring mechanisms should be implemented to prevent online fraud, fake buyers, and payment delays.

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