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A conceptual study on role of commodity exchanges in enhancing awareness among farmers and stakeholders

Shankara M[1], Dr. Ranjini M L[2], Dr. Rajith Kumar H B[3]
[1] Research Scholar & Assistant Professor, B R Tambakad First Grade College and PG Studies Hirekerur, University of Mysore, Karnataka, India
[2] Professor & Research Supervisor, Department of Commerce, B R Tambakad First Grade College and PG Studies Hirekerur, Karnataka, India
[3] Director, B R Tambakad First Grade College and PG Studies Hirekerur, University of Mysore, Karnataka, India

Abstract
Agricultural commodity markets are inherently exposed to price volatility, uncertainty, and information asymmetry, which adversely affect farmers and other stakeholders. Commodity exchanges were established to address these challenges by providing organized platforms for price discovery, risk management, and transparent trading mechanisms. Despite the availability of such institutional frameworks, the participation of farmers and stakeholders in agricultural commodity derivatives markets remains limited, primarily due to lack of awareness and understanding. This theoretical research paper examines the role of commodity exchanges in enhancing awareness among farmers and stakeholders. It analyses the functions of commodity exchanges, awareness initiatives undertaken by exchanges and regulators, and the conceptual linkage between awareness, participation, and market efficiency. Based on an extensive review of literature, the study identifies significant research gaps and highlights the need for strengthening awareness programmes to promote inclusive participation. The paper concludes that commodity exchanges play a crucial role not only as trading platforms but also as educational and institutional agents that empower farmers and stakeholders, thereby contributing to sustainable agricultural development.

Keywords: Commodity exchanges, agricultural commodities, awareness, farmers, stakeholders, derivatives market, price discovery, risk management

Introduction

Agriculture plays a pivotal role in the economic framework of India and is the backbone of the rural economy. It supports the livelihood of over half of the population, contributes significantly to national GDP, and forms the basis of industrial and export activities. India's diverse agro-climatic zones support a wide variety of agricultural commodities such as cereals, pulses, oilseeds, fibers, and horticultural crops. Within the southern state of Karnataka, agricultural production is critical not only for food security and rural income but also for the supply of major cash crops like coffee, cotton, groundnut, maize, sesame, coriander (dhaniya), and castor. These commodities have both *domestic market significance* and *global trade potential*, especially through derivatives markets such as futures.

With rapid globalization and market liberalization, agricultural markets have seen profound changes. Traditional spot markets, where physical commodities are traded for immediate delivery, now coexist with increasingly important futures markets, where contracts to buy or sell commodities at a future date are traded. Futures markets were introduced to help producers, traders, and consumers manage price risk in commodities characterized by high volatility due to seasonality, weather, and supply-demand imbalances.

Understanding how efficient these markets are — whether prices reflect all available information and whether futures markets help in price discovery and risk mitigation — is crucial for market participants and policymakers. Moreover, assessing the awareness of stakeholders (farmers, traders, processors, exporters, and policymakers) about these markets can determine the efficacy of price risk management and influence agricultural incomes.

1. Role of Agriculture in the Indian Economy

Agriculture occupies a central position in the Indian economy due to its multidimensional contribution to economic growth, employment generation, food security, and rural development. Despite the structural transformation of the Indian economy toward industry and services, agriculture continues to support nearly half of the country's population by providing direct and indirect employment. A significant proportion of India's rural households depend on agriculture not only for income but also for sustenance, making it a socio-economic stabilizer.

The agricultural sector contributes substantially to national income and plays a vital role in controlling inflation, particularly food inflation, which has a direct impact on overall macroeconomic stability. Agricultural output influences input supply to agro-based industries such as textiles, sugar, edible oil, food processing, and pharmaceuticals. In addition, exports of agricultural commodities such as coffee, spices, cotton, oilseeds, and cereals contribute to foreign exchange earnings and strengthen India's position in global commodity markets.

However, Indian agriculture faces persistent challenges including fragmented landholdings, low productivity, dependence on monsoon rainfall, climate variability, and price uncertainty. These structural constraints make farmers highly vulnerable to market risks, particularly price fluctuations, underscoring the importance of efficient agricultural markets and institutional mechanisms for price stabilization.

Table 1: Multifaceted Role of Agriculture in India

Dimension	Description
Economic	Contribution to GDP, industrial inputs
Social	Livelihood for rural population
Food Security	Availability of staple food commodities
Trade	Agricultural exports and forex earnings
Employment	Direct and indirect employment generation
Rural Development	Backbone of rural economy

2. Evolution of Agricultural Marketing Systems in India

The agricultural marketing system in India has evolved gradually from informal, unregulated markets to more organized and regulated structures. During the pre-independence period, agricultural marketing was dominated by intermediaries such as traders and moneylenders. Farmers were compelled to sell their produce immediately after harvest due to lack of storage facilities, credit constraints, and poor access to market information. This resulted in widespread exploitation and distress sales.

Post-independence, the government introduced institutional reforms to protect farmers and ensure fair price realization. The establishment of Agricultural Produce Market Committees (APMCs) aimed to regulate market practices, standardize weights and measures, and promote transparent price discovery. Cooperative marketing societies were encouraged to enhance farmers' bargaining power, while the Minimum Support Price (MSP) mechanism was introduced to safeguard farmers from sharp price declines.

With economic liberalization in the 1990s, agricultural marketing reforms emphasized competition, private participation, and market integration. Warehousing development, negotiable warehouse receipt systems, and contract farming gained prominence. More recently, the introduction of the electronic National Agriculture Market (e-NAM) marked a paradigm shift toward digital integration of spot markets, enabling real-time price discovery and inter-state trade.

Despite these reforms, agricultural marketing in India continues to suffer from fragmentation, infrastructure bottlenecks, multiple intermediaries, and regulatory rigidities. These inefficiencies limit effective price transmission and amplify price volatility, reinforcing the need for complementary market-based instruments such as commodity derivatives.

Table 2: Evolution of Agricultural Marketing in India

Phase	Key Characteristics
Pre-Independence	Informal, unregulated markets
Early Post-Independence	APMC regulation, MSP
Reform Phase	Cooperatives, warehousing
Liberalization Era	Private markets, contract farming
Digital Integration	e-NAM, electronic trading

3. Need for Price Risk Management in Agriculture

Agricultural production and marketing are inherently risky due to uncertainty in weather, biological processes, market demand, and policy interventions. Price risk arises when fluctuations in market prices adversely affect farmers' income between the time of production decisions and actual sale. Seasonal gluts, global price shocks, export-import policies, and speculative activities further intensify price volatility.

Traditional policy instruments such as MSP and government procurement offer limited risk protection, as they cover only selected crops and regions. Moreover, these mechanisms often fail to reflect market realities and do not address volatility in open market transactions. Consequently, farmers are exposed to income instability, which discourages investment and adoption of modern technology.

Market-based price risk management tools such as agricultural commodity derivatives provide an effective solution by enabling farmers and other stakeholders to hedge against adverse price movements. These instruments help stabilize income, improve market efficiency, and reduce dependence on government interventions.

Review of Literature.

Several empirical and theoretical studies have examined agricultural commodity derivatives markets in India with particular reference to market efficiency, regulatory structure, awareness levels, and participation of farmers and stakeholders.

1. **Venkatragavan and Sivasakkaravarthi (2022) [12]:** Analyzed farmers' perceptions of commodity futures markets using primary data from 300 spice farmers in Kerala. Their study revealed that although farmers possessed a moderate level of awareness about futures trading, actual participation remained low due to procedural complexity, lack of understanding of derivative instruments, and concerns over price volatility. Cardamom farmers showed relatively higher engagement than pepper farmers. The study emphasized that awareness programs alone are insufficient unless supported by simplified trading mechanisms and farmer-friendly policies.

2. **Kadya and Karani (2022) [6]:** Reviewed the application of Big Data, IoT, and artificial intelligence in agricultural commodity price prediction. Based on secondary data from journals and conference papers, the study found that machine learning and AI-based models significantly improve price forecasting accuracy compared to traditional methods. However, challenges such as data quality, integration issues, and real-time processing constraints limit their effectiveness. The study highlights the growing importance of digital awareness and technological literacy among agricultural stakeholders for informed decision-making.

3. **Miranda, Britz, and Börner (2024) [7]:** Examined the relationship between agricultural commodity prices, governance, and tropical deforestation using global data. Their findings indicated that rising commodity prices incentivize agricultural expansion, contributing to deforestation, particularly in regions with weak governance. However, strong institutional and environmental governance can mitigate adverse outcomes. The study underscores the broader socio-environmental implications of commodity markets beyond price discovery and risk management.

4. **Rajib (2015) [10]:** Explored the challenges of India's agricultural commodity derivatives market through expert interviews and secondary data analysis. The study identified low farmer participation due to lack of awareness, high transaction costs, regulatory

complexity, and mismatch between standardized exchange contracts and heterogeneous farm produce. While corporate entities effectively used exchanges for hedging, limited market depth reduced efficiency. The study highlighted ITC's e-Choupal as a successful awareness and engagement model.

5. **Nagaraju (2018) [8]:** Analyzed the structure and growth of India's commodity derivatives market using data from MCX, NCDEX, FMC, and government reports. The study found that despite increased trading volumes, market efficiency remained constrained by regulatory restrictions, poor warehousing infrastructure, and limited financial literacy. Speculative trading dominated over hedging, discouraging farmer participation. The study concluded that regulatory reforms, infrastructure expansion, and improved awareness were essential for market development.

6. **Kar (2021) [5]:** Examined the evolution of agricultural commodity futures markets in India, focusing on price discovery and risk management. Using secondary data and content analysis, the study found that futures markets contribute significantly to price discovery but suffer from inefficiencies caused by policy uncertainty, regulatory bans, and lack of awareness. The decline in futures trading after 2012 was attributed to stringent regulations. The study recommended strengthening regulatory frameworks and expanding awareness initiatives.

7. **Bhagwat and Maravi (2015) [1]:** Evaluated the role of the Forward Markets Commission (FMC) in regulating commodity futures markets. Based on secondary data, the study observed that although deregulation led to increased trading volumes after 2003, regulatory constraints and limited autonomy weakened FMC's effectiveness. The decline in volumes post-2013 highlighted the need for regulatory integration with SEBI and the introduction of new derivative instruments to enhance market efficiency and awareness.

8. **Chatterjee, Raghunathan, and Gulati (2019) [2]:** Analyzed the role of Farmer Producer Organizations (FPOs) in linking farmers to futures markets using NCDEX data and case studies. The study revealed extremely low FPO participation (0.004% of total futures trade) due to lack of awareness, quality rejections, limited financial access, and inadequate delivery infrastructure. The study emphasized policy reforms, education initiatives, and infrastructure development to enhance farmer participation, drawing lessons from China's agricultural futures markets.

The review of literature reveals that most studies focus on the efficiency, price discovery, and risk management functions of commodity exchanges. However, limited attention has been given to the role of commodity exchanges as awareness-building institutions. Existing research often highlights low awareness levels but does not adequately examine the mechanisms through which exchanges enhance awareness or the conceptual link between awareness and participation. This gap necessitates a focused theoretical study on the role of commodity exchanges in enhancing awareness among farmers and stakeholders.

Objectives of the Study

1. To examine the concept and functions of commodity exchanges in agricultural markets.
2. To identify factors affecting awareness and participation in commodity derivatives markets.
3. To study regulatory and institutional initiatives aimed at awareness creation.

Result and Discussion:

1. Role of Commodity Exchanges in Agricultural Markets.

Commodity exchanges play a pivotal role in strengthening agricultural markets by creating an organised, transparent, and efficient trading environment. Their functions extend beyond mere trading activities and significantly influence price formation, risk mitigation, information flow, and market integration. The major roles of commodity exchanges in agricultural markets are discussed below in detail.

1.1 Price Discovery Function

Price discovery refers to the process through which market prices are determined based on the interaction of demand and supply forces. Commodity exchanges facilitate efficient price discovery by enabling a large number of buyers and sellers from different regions to participate in trading through electronic platforms.

Futures prices generated on commodity exchanges reflect collective market expectations regarding future production levels, weather conditions, storage availability, export demand, and government policies. These prices act as reference benchmarks for spot market transactions and guide farmers, traders, and processors in their decision-making.

Example

If soybean futures prices on NCDEX indicate a rising trend due to expected lower production, farmers may decide to delay selling their produce or store it for future sale. Similarly, traders may offer better prices in physical markets based on futures price signals.

Thus, price discovery through commodity exchanges helps farmers make informed decisions regarding crop planning, harvesting, storage, and marketing.

1.2 Risk Management and Hedging Mechanism

Agricultural production and marketing are subject to various uncertainties such as weather fluctuations, pest attacks, global price changes, and policy interventions. These uncertainties often lead to income instability for farmers.

Commodity exchanges provide hedging instruments, primarily futures and options contracts, that allow farmers and other stakeholders to lock in prices in advance. By entering into futures contracts, market participants can protect themselves against adverse price movements.

Example

A turmeric farmer expecting harvest in three months can sell turmeric futures contracts on NCDEX at the prevailing futures price. If prices fall at harvest time, the loss in the

spot market is offset by gains in the futures market, thereby stabilising income.

This risk management function is particularly important for farmers, processors, exporters, and agri-business firms who are exposed to price volatility.

2. Hedging Mechanism through Commodity Exchanges

Hedging refers to the process of taking an opposite position in the futures or options market to offset potential losses in the physical (spot) market.

2.1 Futures Contracts as a Hedging Tool

A futures contract is a standardized agreement traded on a commodity exchange to buy or sell a commodity at a predetermined price on a future date.

Example (Farmer's Perspective)

- A soybean farmer expects to harvest 10 tonnes after 3 months
- Current spot price: ₹4,500 per quintal
- Futures price (3 months): ₹4,600 per quintal

The farmer sells futures contracts to lock in the price.

Scenario	Spot Price at Harvest	Gain/Loss in Spot Market	Gain/Loss in Futures Market	Net Outcome
Price falls	₹4,200	Loss of ₹300/qtl	Gain of ₹300/qtl	Price protected
Price rises	₹4,900	Gain of ₹300/qtl	Loss of ₹300/qtl	Price certainty

Result: Futures hedging stabilizes income by eliminating price uncertainty.

2.2 Options Contracts and Risk Protection

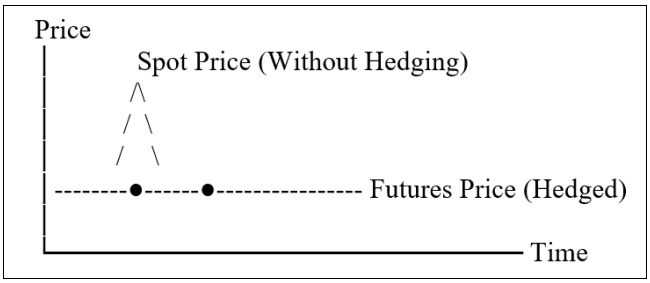
Options provide the right but not the obligation to buy or sell a commodity at a predetermined price.

Feature	Futures	Options
Obligation	Mandatory	Optional
Risk	Unlimited	Limited to premium
Suitability	Large traders	Farmers & FPOs
Flexibility	Low	High

Options are increasingly recommended for farmers as they provide downside protection without sacrificing upside gains.

Illustrative Chart: Price Stabilization through Hedging

Conceptual Explanation of Chart



- The fluctuating curve represents volatile spot prices
- The straight horizontal line represents locked-in futures price
- Hedging reduces volatility exposure and stabilizes income

2.3 Impact of Risk Management on Awareness and Participation

Aspect	Without Hedging	With Hedging
Price certainty	Low	High
Income stability	Uncertain	Stable
Market confidence	Weak	Strong
Farmer participation	Limited	Improved
Financial planning	Difficult	Easier

Empirical studies (NCDEX & ICRIER) indicate that low awareness of hedging mechanisms is a major reason for poor farmer participation, despite availability of risk management tools.

Outcome of Effective Hedging Mechanisms

- Reduction in distress sales by farmers
- Improved price realization
- Better credit access due to predictable income
- Increased trust in organized markets
- Enhanced integration of farmers with national markets

3. Market Transparency and Information Dissemination

Commodity exchanges enhance transparency by providing real-time information on prices, trading volumes, open interest, contract specifications, and market trends. This information is disseminated through exchange websites, mobile applications, trading terminals, call centres, and media platforms.

Transparent information flow reduces information asymmetry, where certain market participants possess more information than others. When farmers have access to accurate and timely market information, their dependence on middlemen is reduced.

4. Standardisation and Quality Assurance

Commodity exchanges trade standardized contracts that specify quantity, quality, delivery location, and settlement procedures. This standardisation eliminates ambiguity and ensures uniformity in transactions.

Quality standards and grading systems are defined by exchanges in consultation with regulatory bodies. These standards ensure that commodities traded meet predefined specifications, enhancing confidence among buyers and sellers.

5. Reduction of Intermediary Dominance

In traditional agricultural markets, farmers often depend on commission agents and intermediaries, who may exploit information gaps and bargaining power imbalances. Commodity exchanges reduce the dominance of intermediaries by offering direct access to market prices and trading mechanisms.

By providing alternative market platforms, exchanges empower farmers and Farmer Producer Organisations (FPOs) to participate more directly in price determination.

6. Integration of Spot and Futures Markets

Commodity exchanges help integrate spot and futures markets by aligning prices across different market segments. Futures prices influence spot prices, and vice versa, leading to better price transmission across regions.

This integration enhances market efficiency and ensures that price signals reach farmers in remote areas.

7. Promotion of Market Efficiency and Liquidity

Commodity exchanges improve market efficiency by increasing liquidity, reducing transaction costs, and enabling continuous trading. Higher liquidity ensures that contracts can be easily bought and sold without significant price distortion.

Efficient markets attract more participants, including hedgers, arbitrageurs, and speculators, which further improves price discovery and risk transfer mechanisms.

8. Support to Policy Makers and Market Planning

Futures market data generated by commodity exchanges provides valuable insights to policymakers regarding supply-demand conditions, price trends, and market expectations. This information can assist in designing effective agricultural and food policies.

9. Financial Inclusion and Farmer Empowerment

By enabling access to organised markets, commodity exchanges contribute to financial inclusion and farmer empowerment. Awareness and participation in futures markets enhance farmers' financial literacy and market orientation.

Increased awareness leads to better decision-making, improved income stability, and reduced vulnerability to price shocks.

10. Contribution to Agricultural Market Reforms

Commodity exchanges complement agricultural market reforms by modernising price discovery mechanisms, promoting transparency, and integrating agricultural markets with financial systems. They act as catalysts for transforming traditional agricultural marketing into a more efficient and inclusive system.

Importance of Awareness among Farmers and Stakeholders.

Awareness plays a pivotal role in determining the effectiveness and inclusiveness of agricultural commodity exchanges. In the context of commodity derivatives markets, awareness does not merely refer to basic familiarity with the existence of exchanges, but extends to a comprehensive understanding of their functioning, benefits, and safeguards. Awareness encompasses knowledge related to the structure of commodity exchanges, the nature of futures and options contracts, mechanisms of price discovery, delivery and settlement procedures, margin requirements, regulatory oversight, and the role of derivatives in managing price risks.

1. Awareness as a Foundation for Market Participation

For farmers and stakeholders to participate meaningfully in commodity exchanges, a minimum level of financial and market literacy is essential. Without awareness, farmers are unable to interpret futures prices or use them as reference points for spot market transactions. As a result, they continue to rely on traditional channels and intermediaries for price information, often leading to unfavourable price realisation.

2. Role of Awareness in Reducing Information Asymmetry

One of the primary objectives of commodity exchanges is to reduce information asymmetry between buyers and sellers. However, this objective can only be achieved when market participants are aware of how to access and interpret market information. Awareness enables farmers to compare spot prices in local mandis with futures prices on exchanges, thereby improving transparency and bargaining power.

3. Awareness and Risk Management Capability

Agricultural income is highly vulnerable to price volatility caused by weather conditions, global demand-supply dynamics, policy changes, and market speculation. Commodity derivatives provide instruments for hedging against such risks. However, the effective use of hedging strategies requires awareness and understanding of contract specifications, margin systems, and settlement mechanisms.

Small and marginal farmers often perceive futures trading as speculative or risky due to lack of awareness. This misconception prevents them from using derivatives as protective tools. Awareness programmes help clarify that futures markets are primarily designed for risk mitigation rather than speculation.

4. Awareness and Stakeholder Integration

Stakeholders such as traders, processors, exporters, warehousing agencies, and Farmer Producer Organisations (FPOs) play a crucial role in agricultural commodity markets. Awareness among these stakeholders enhances coordination across the agricultural value chain and improves overall market efficiency.

Farmer Producer Organisations, in particular, act as aggregators and intermediaries between individual farmers and commodity exchanges. When FPO leaders are aware of derivative market mechanisms, they can educate member farmers, pool produce, and participate in futures markets on behalf of their members.

5. Awareness as a Tool for Farmer Empowerment

Awareness empowers farmers by enhancing their decision-making capacity. An informed farmer is better equipped to decide:

- Which crop to cultivate based on expected future prices
- When to sell produce to maximise returns
- Whether to store or hedge produce
- How to reduce dependency on middlemen

Thus, awareness directly contributes to farmer empowerment, income stability, and improved livelihoods.

Conclusion

Commodity exchanges play a vital role in strengthening agricultural markets through price discovery, risk management, and transparency. However, without adequate awareness among farmers and stakeholders, these benefits remain underutilized*+. This study highlights the importance of awareness as a bridge between market infrastructure and effective participation. Strengthening

awareness initiatives through coordinated efforts by exchanges, regulators, and educational institutions is essential for inclusive and efficient agricultural commodity markets. In summary, commodity exchanges perform multiple interrelated roles in agricultural markets, including price discovery, risk management, transparency enhancement, standardization, reduction of intermediaries, market integration, and farmer empowerment. These roles collectively contribute to improving market efficiency, stabilizing farm incomes, and strengthening the agricultural economy. However, the effectiveness of these roles depends largely on the level of awareness and participation among farmers and stakeholders

References

1. Bhagwat, S A, Maravi, A S. Role and performance of Forward Markets Commission in Indian commodity futures market. International Journal of Research – Granthaalayah,2015:3(9):1–10. https://doi.org/10.5281/zenodo.208857
2. Chatterjee, S, Raghunathan, K, Gulati, A. Linking farmers to futures markets through Farmer Producer Organisations in India. Indian Council for Research on International Economic Relations Working Paper, 2019, 368.
3. Forward Markets Commission. Annual report 2013–14. Government of India, 2014.
4. Government of India. Economic survey of India 2022–23. Ministry of Finance, 2023.
5. Kar, S. Agricultural commodity futures markets in India: Evolution, regulation, and price discovery. Journal of Operations and Strategic Planning,2021:4(1):45–62. https://doi.org/10.1177/2516600X21995862
6. Kadya, S, Karani, H. Data analytical techniques for commodity price prediction in smart agriculture. International Journal of Case Studies in Business, IT and Education,2022:6(2):87–101. https://doi.org/10.47992/IJCSBE.2581.6942.0163
7. Miranda, J J, Britz, W, Börner, J. Agricultural commodity prices, governance, and tropical deforestation. Scientific Reports,2024:14:11342. https://doi.org/10.1038/s41598-024-62317-6
8. Nagaraju, Y. Indian commodity derivatives market: Growth, structure and challenges. International Journal of Management Studies,2018:5(3):32–41.
9. National Commodity and Derivatives Exchange Limited. Investor awareness and farmer outreach initiatives. NCDEX, 2022.
10. Rajib, P. Challenges and opportunities in India's agricultural commodity derivatives market: An expert view. IIMB Management Review,2015:27(4):225–238. https://doi.org/10.1016/j.iimb.2015.09.002
11. Securities and Exchange Board of India. Annual report 2020–21. SEBI, 2021.
12. Venkatragavan, R, Sivasakkaravarthi, C. Farmers' perception towards commodity futures market in India. Journal of Emerging Technologies and Innovative Research,2022:9(7):258–266.
13. Acharya, S S. Agricultural marketing and rural credit reforms in India. Indian Journal of Agricultural Economics,2006:61(3):1–20.
14. Babshetti, S, Basanna, D. Awareness of agricultural commodity derivatives among farmers. Indian Journal of Research in Capital Markets,2016:3(2):45–58.
15. Indian Council for Research on International Economic Relations. Agricultural markets and price risk management in India. New Delhi, 2022.
16. Securities and Exchange Board of India. Investor education and awareness initiatives in commodity derivatives. Mumbai, 2019.