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Enhancing Liquidity in the Indian Commodity Derivatives Markets: Linking Agriculture Trade to Commodity Derivative Markets

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ABSTRACT

Integrating participants in the agricultural value chain, including farmers, traders, aggregators, processors, etc., into commodity derivative markets can become a win-win option for all stakeholders in the commodity ecosystem. Participants may gain an advantage related to price setting and risk management; on the other hand, exchanges may benefit from increased liquidity. In this same context, the article presents a conceptual scheme for attracting value chain agents in agriculture to Indian commodity exchanges. Within the framework of this concept, special attention is given to raising the awareness of producers, processors, and consumers of agricultural products about the benefits of commodity derivative markets. The issue of incentivizing hedgers and participants, who should have real exposure to commodities, is also being considered to increase their participation in the operations of Indian exchanges. Moreover, it is recommended to encourage indirect participation through option traders, investment banks, or other specialized agencies. In the long term, other strategies can also be considered, including state participation in commodity derivatives markets and allowing fractional contracts on commodity derivatives to increase liquidity in Indian commodity derivatives markets.

Keywords: Commodity Derivatives; Farmers; Price risk management; Futures Markets

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INTRODUCTION

In the process of economic liberalization and deregulation in Indian commodity futures markets, commodity futures trading has been reintroduced since 2003 [1, 2]. The two major factors leading to such reforms were their ability to manage price risk and the efficient discovery of future commodity prices [3, 4]. After a healthy run, signs of corrections were observed in the Indian commodity markets in 2012. However, the NSEL Spot Exchange scam of Rs 5,600 crore in July 2013 had disastrous consequences for the volume and value of trade [4]. After the revelation of the scam, the turnover of the exchange decreased to almost 50% until February 2015. Although the erstwhile FMC adopted several measures to restore confidence among participants, Indian commodity derivative markets were not able to revive and regain the previous high-growth trajectory (*Fig. 1*).

The two primary functions for which commodity derivatives are allowed can only be achieved if the traded contracts are liquid and provide opportunities for hedgers, speculators, and investors. So far, the derivatives contracts traded on the exchanges have not been liquid when compared with similar instruments on other commodity exchanges in emerging and developed countries [5, 6]. Researchers have provided several reasons for this, including higher transaction costs, higher regulatory restrictions, and the availability of desired products. a vis. products available in overseas markets, among others, as reasons for lower liquidity in Indian commodity derivatives markets.

With the merger of FMC with SEBI (Securities Exchange Board of India), several reforms have been initiated by regulators to improve liquidity in commodity derivative markets. The reforms include allowing options on commodity futures, commodity indices, mutual funds, alternate institutional funds, foreign firms with actual exposure to agricultural commodities to participate in the Indian markets, etc. [7]. Amidst these reforms, commodity markets still underperform in terms of expected trade volumes and liquidity [8].

Given this background, this study suggests how liquidity can be increased by linking agricultural trade to Indian commodity derivative exchanges. Increased participation by farmers/food processors/traders of

agricultural commodities in commodity derivative exchanges is a much-desired objective for policymakers, as they are among the most important 'intended beneficiaries' of commodity futures markets. However, certain constraints hinder the achievement of this objective to the desired extent. This study discusses these constraints and approaches to overcome them.

Section 2 covers the theoretical basis of the need for risk management in the agricultural sector. Section 3 presents the results, Section 4 discusses the primary policy suggestions for enhancing liquidity in the Indian commodity derivatives market, and Section 5 concludes the paper.

THEORETICAL BASIS

The Indian agricultural sector broadly has to deal with two categories of risk: output risk and price risk. Risks arising from excess or deficient rainfall, temperature fluctuations, and crop diseases lead to output risks. However, price fluctuations due to market factors such as demand and supply are potential sources of price risk [9].

Various government interventions, including Pradhan Mantri Fasal Bima Yojana, Pradhan Mantri Krishi Sinchai Yojana, and soil health cards, have been initiated to counter the output risk. Further, to reduce price risk, interventions in setting minimum support prices and procurement programs are prevalent, wherein the government bears the cost of protecting farmers' interests.

However, government interventions for managing price risk have inherent limitations owing to fragmented farmer populations, weak rural infrastructure, and high transportation costs [10]. Such limitations result in not only low participation of farmers, but also wastage and spoilage of commodities during the procurement and storage process [11]. It has often been noticed that the actual benefit of such programs is availed of by aggregators and stockists rather than by actual farmers.

An alternative approach to managing price risk in agricultural commodities can be through market instruments, that is, entering into futures and options contracts traded on national commodity exchanges [12]. Although national commodity exchanges have been operating in India for more than 15 years, farmers' direct or indirect participation has been minimal [13]. As per the SEBI annual report, during 2021–2022, the share of value chain participants and hedgers to total turnover was just 0.5 percent of the total turnover. The lower participation of farmers in Indian commodity derivatives markets is due to several factors. Several of these studies have been discussed. First, there is a large vacuum in the farming community regarding the benefits of commodity futures. Most farmers consider trading in commodity markets with gambling or in a marketplace for big players to manipulate prices [14]. Awareness of the role played in risk management and price discovery has not spread among farmers and other stakeholders. Furthermore, misrepresenting facts about commodity markets, such as low physical delivery and high volumes compared to the actual quantity produced, have also taken many genuine prospective users on a back seat [15, 16].

Second, farmers often find it challenging to meet the requirements for opening a trading account such as KYC compliance, bank account, Permanent Account Number (P. A. N.), and Aadhar, which is a mandatory requirement for accessing commodity exchanges. The user has to pay an annual maintenance fee along with transaction charges, which are approximately 2–3% of the total traded value. The contract size is much higher than the average farmer produces annually. Such procedural hurdles also restrict farmers' participation in Indian commodity exchanges [17].

Third, even after opening a trading account, taking positions in future contracts requires considerable knowledge of how to trade, exposure margins, and daily mark-to-market margins [18]. The whole process of hedging price risk in terms of choosing which commodity to hedge, how much quantity, etc., would require considerable time and effort, which any ordinary farmer may find difficult to devote.

Fourth, since commodity contracts traded on the exchange are standardized in terms of quality, lot size, period, and delivery centre, many farmers do not qualify for tendering delivery in exchange for the minimum lot size. Their participation is also limited due to the requisite grade/variety/quality deliverables against the contract. The lack of adequate postharvest management, warehousing, and grading facilities also limits the available deliverable surplus. To the extent that farmers wish to use futures contracts to sell their produce, their participation becomes geographically limited around the notified delivery centres of the contract.

Fifth, the futures market has experienced several policy reversals in the past, leading to uncertainty among all stakeholders in the commodity ecosystem, including farmers [4]. Frequent instances of suspension of trading

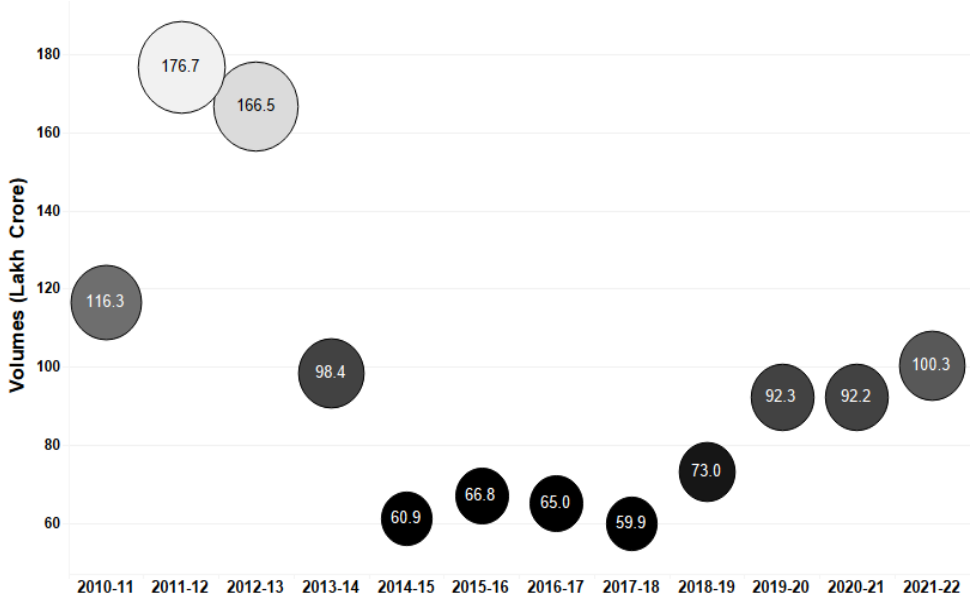

Fig. 1. **Total Volumes of Trade in Commodity Derivative Markets (In ₹ Lakh Crores)**

Source: Compiled from SEBI Annual Reports.

are linked to food price inflation and price manipulation. These interruptions not only cause immediate financial implications for active participants but also shake the confidence of current as well as prospective participants regarding the continuity of the markets [5]. Recently, seven agricultural commodity contracts were suspended by the SEBI when the prices of agricultural commodities started to rise. The ban on commodity contracts interrupted the price discovery and risk management functions of the commodity markets for which they were reintroduced in 2003. Further, it hurts market participants' sentiments and confidence, especially in dealing with price risk leading to Dabba trading or a shift in volumes to international commodity exchanges.

Finally, a developed spot market (which may not necessarily be a spot exchange) is a prerequisite for a well-functioning futures market. The major roadblock to the growth of agricultural futures markets in India is the fragmented physical/spot market [4]. Spot markets need rapid improvements in infrastructure, logistics, management, linkages with financial institutions, and efficient information systems. A spot or wholesale market of sufficient size and efficiency must be developed to establish a vibrant futures market in India [8].

RESULTS

After discussing the theoretical basis and constraints for farmers' participation in Indian commodities, the section discusses the results in the form of probable solutions for the issues mentioned above. Two types of benefits accrue to agri-value chain participants from trading on commodity exchanges: direct and indirect. Direct benefits are available when farmers use exchanges for price risk mitigation and tendering physical delivery [7]. Indirect benefits include price discovery and dissemination, wherein if a farmer is not directly trading on exchanges, he can use the disseminated prices to bargain better prices for his produce [8]. They can also use futures prices to decide which crop to sow and when to sell their produce. Additionally, indirect benefits can arise when farmers indirectly participate in the exchange through Farmer's Producer Organizations (FPOs), aggregators, etc. [14]. To ensure that farmers can take advantage of the commodity futures market by spreading awareness of commodity markets. The role of commodity markets in price discovery and risk management must be percolated among users. Alternative means of spreading awareness among stakeholders must be explored. The price dissemination project, which aims to install price tickers in rural areas, must be revamped. The installed tickers must be monitored to determine whether they are operating and installed in places where farmers can benefit from the installed instruments. Further, future price dissemination can also be undertaken through the Krishi Darshan, mKisan Portal, and Kisan

apps, which enjoy good popularity among farmers and have successfully connected with farmers across the country. Furthermore, the rising popularity of social media among farmers should be capitalized to spread information about the markets.

In the recent past, various institutions, including SEBI, Commodity Exchanges, Nabard, have initiated initiatives for spreading awareness about the utility of commodity markets to farmers. To understand the shortcomings of such programs, especially short-duration programs undertaken by SEBI, Commodity Exchanges, Nabard, etc., should be evaluated. Furthermore, a comprehensive framework for increasing awareness of measurable targets and outcomes needs to be developed. The comprehensive framework should include stakeholders from SEBI, Nabard, Small Farmers' Agri-Business Consortium **(**SFAC), Agri Skill Council, Agriculture training institutes.

Another critical issue that requires attention is incentivizing brokers to serve rural clients. Brokers often find it difficult to serve rural clients for several reasons, including the awareness of commodity markets and trading, infrastructure bottlenecks, and high trading costs due to low trading volume. All of these bottlenecks prevent farmers or rural clients from trading in commodity markets. Incentives to serve genuine rural clients exposed to commodities (farmers, Processors, Aggregators, Wholesalers, etc.) should be provided in terms of lower brokerage and account maintenance charges for small traders hedging the price risk associated with their daily operations.

Further, to improve farmers' participation in commodity markets, Plain Vanilla Options can be introduced as commodity options in Indian commodity exchanges in 2019 to provide stakeholders with a new set of financial instruments to hedge their price risks. The launch was considered one of the most significant reform measures since modern commodity derivatives trading began 14 years ago. The options can act as insurance to change prices, where the buyer's loss is limited to the amount of premium paid by him. The Options on Agriculture Contracts were initially started in guar gum at the NCDEX. However, market response has not been encouraging. The complexity of currently offered options contracts requires many participants in the back seat. Further, many genuine hedgers participate in international exchanges that offer hedge price risks using option contracts. The introduction of simple products, such as plain vanilla options, can attract agricultural value chain participants towards commodity exchanges.

Another vital measure is to improve the participation of stakeholders who can take positions in futures markets on behalf of farmers. Since farmers generally do not possess the requisite knowledge and resources to participate in commodity markets directly, the same can be taken care of by some specialized intuitions, such as banks, insurance companies, NBFC's or entities specifically instituted for farmers' risk management. Cooperatives, farmers' associations, state marketing federations, and non-government organizations can also act as aggregators by consolidating positions on behalf of a group of farmers. Furthermore, several other specialized institutions can act as intermediaries that provide risk management services to farmers for a nominal fee.

In the same context, allowing banks/ NBFC'c to hedge positions on goods kept in warehouses can improve farmers' indirect participation in the exchange. Farmers increasingly use warehousing receipts to meet their working capital and consumption needs after the harvest season. For instance, a decade ago, loans worth only around 5000 crores were made to farmers against warehouse receipts. Banking institutions have advanced around ₽40,000 crores against these receipts. While these numbers look more minor against the gross agri-credit target of ₽10,65,755 crores for the current fiscal year, there is tremendous scope for such financing in years to come back to the renewed attention of policymakers and the changing agricultural dynamics in the country. The average tenure of loans against WHR is around six months, making banks susceptible to the price risk on which loans have been granted. A drastic fall in the prices of underlying agricultural commodities may spur defaults and hurt the NWR ecosystem. If banks/NBFCs are allowed to take positions on behalf of farmers, not only will farmers be protected from price risk along with arresting the NPA of lending institutions.

Furthermore, exchange-accredited WDRA-registered warehouses can also act as procurement channels for central agencies. Food Corporation of India (FCI), the nodal central agency of the Government of India, along with other State Agencies, undertakes procurement of wheat and paddy under a price support scheme. State Government Agencies purchase coarse grains for the Central Pool based on periodic directives from the Government of India. Procurement under price support

is undertaken mainly to ensure remunerative prices to the farmers for their produce, which is an incentive for achieving better production.

To facilitate the procurement of food grains, FCI and various State Agencies, in consultation with the State Government, establish purchase canters at various mandis and critical points. In the procurement operations, around ₱900 crores were spent to support the losses from procurement operations of the previous year. The government expects the same to be around ₱2000 crore in the current year.[1] The number of centres and their locations are decided by the State Governments based on various parameters to maximize the MSP operations. Although 18 535 procurement canters were operated during the Rabi Marketing Season (RMS 2022–2023) for wheat and 65,000 procurement centres for Rice in Kharif Marketing Season (KMS 2021–2022), farmers face difficulties in reaching these procurement centres, and it has also been reported that middlemen procurement is produced from farmers at low prices from districts with fewer or fewer procurement centres and sell at a profit to direct procurement centres (DPCs) in other districts. To overcome the problem of limited procurement canters, the services of WDRA-registered exchange-accredited warehouses can be used as procurement canters, and farmers can sell their products indirectly through an exchange mechanism by depositing the same in the exchange-accredited warehouse. Warehouses may assist the farmer/FPO in procuring loans against the product, the portion of which will be used as a margin for entering into futures contracts. In the case of an order, matching occurs on the exchange at the market price, the price set by the government, or higher (procurement price), and the loan with the bank can be settled from the sale proceeds. If the buyer intends to deliver, the same can happen through the exchange mechanism; otherwise, the accredited warehouses can transfer the stocks to the procurement canters. If the prevailing market prices are lower than those offered in exchange, the government can claim a difference.

Another step in improving indirect participation can be by introducing registered agricultural trade options merchants (ATOM) in the Indian markets, which can provide marketing services of exchange-traded options contracts on farm products to producers, processors, or commercial users. Such institutions can be allowed for commodities such as soybean and coriander in pilot mode, which can then be extended to other commodities.

An important initiative for improving farmer participation can be benchmarking the best practices of farmers' producer organizations (FPOs). Currently, there are 744 FPOs set up by SFAC[2] and 5000 FPOs by Nabard.[3] Of the total, 470 FPOs started trading on commodity exchanges and realized higher prices for their produce.[4] The number of FPOs increased following the Union Budget 2018 announcement of a 5-year tax break for farmer-producer organizations. The best practices for FPOs and the critical issues of concern should be documented. Benchmarking best practices will provide a more congenial environment, thereby encouraging more FPOs to participate in commodity exchanges.

Another suggestion for improving indirect farmer participation is government participation in commodity derivatives. In all countries, governments tend to focus on the agricultural sector for various reasons. Agricultural development policies in India and across the globe aim to achieve specific policy goals. These goals may be exporting promotion, commodity sector protection, price stabilization, price support, food security and public distribution, hunger alleviation, and equitable income distribution. There are a few examples in which governments and government agencies have used markets to intervene to support their policies. The HAFED apex cooperative of Haryana effectively hedged wheat by using the NCDEX wheat futures contract. Agencies such as the FCI, NAFED, HAFED, MMTC, PEC and State Government Agencies are involved in procuring stocks. Stocks are procured during the arrival season and then gradually released during the year. In addition to the fixed cost borne by the agencies, which includes the cost of procurement and final distribution of the stock, the price volatility risk acts as an unpredictable additional cost. However,

[1] URL: https://economictimes.indiatimes.com/markets/expert-view/government-may-have-to-shell-out-rs-2000-cr-on-procurement-losses-shobhana-pattanayak-agriculture-secy/articleshow/63796341.cms (accessed on 24.102024).

[2] URL: http://sfacindia.com/UploadFile/Statistics/State%20wise%20summary%20of%20registered%20and%20the%20process%20of%20registration%20FPOs%20promoted%20by%20SFAC%20(as%20on%2031st%20May,%202018).pdf?data=53334.54 (accessed on 24.102024).

[3] URL: http://fpoexwebdata.assetview.in/ (accessed on 24.102024).

[4] URL: https://www.ncdex.com/Downloads/NCDEXImpact/PDF/NCDEX_Group_Connecting_Farmers_to_Market_April_2018.pdf (accessed on 24.102024).

suppose that the agencies choose to hedge the produce procured from farmers using derivatives traded on the Exchange. In that case, it will not only protect them from price volatility but also effectively manage price risk and lower total operational costs.

Finally, allowing fractional contracts in commodity derivatives can also help improve farmers' participation, as the minimum lot size for most agricultural contracts traded on exchanges is available for 10 MT or 10,000 kg. The large size of the contract discourages small producers, processors, stockists, aggregators, etc., from using commodity futures to hedge price risk. Smaller contracts can be introduced if participants can trade in fractions rather than in exclusive contracts. Although fractional trading in shares is still not allowed as per current regulatory provisions, enabling the same can encourage more extensive participation from participants.

INTERNATIONAL INITIATIVES FOR LINKING PARTICIPANTS TO COMMODITY DERIVATIVE MARKETS

China

The involvement of State Trading Enterprises, such as the China National Cereals, Oils and Foodstuffs Corporation (COFCO) Futures Group in China, was a significant aspect that contributed to the deepening and development of organized commodity futures in the country. The largest food maker, processor, and dealer in China, COFCO, was created in 1952, and is a state-owned holding corporation for the food processing industry. It is the only importer and exporter of agricultural goods governed directly by the Chinese state. Having full participation in all domestic futures exchanges, COFCO Futures was founded in 1996. Futures brokerage, investment counselling, and international futures trading are the few services they offer. The number of agricultural commodities exchanged by COFCO has grown throughout the years, and in the last ten years they have traded cotton, sugar, palm oil, soybean oil, and meal, among other products. The presence of state-owned businesses in the futures market, such as COFCO, instils confidence and trust among other participants.

USA

In the United States, a program allowing the buying and selling of agricultural trade options in specified commodities was launched by the Commodities Futures Trading Commission (CFTC) in June 1998.[5] The Commission modified the program in December 1999 by permitting cash settlement of contracts to simplify the registration procedure and to provide option contract designers with more freedom. When issuing or selling agricultural trade options as a component of an agricultural business, an entity may only do so through program regulations. A business must register as an agricultural trade option merchant (ATOM) before it can offer or sell agricultural trade option contracts.

Tanzania

In Tanzania, agricultural market cooperative societies (AMCOS) have been used to link farmers to organized commodity exchanges. Cooperative societies, where farmers pool their goods during harvest, are the first point where the exchange ecosystem starts. The AMCOS tracks down the farmers and their goods at collection points, temporarily stores them, and then transports the product to authorized warehouses. The Warehouse Receipt Regulatory Board (WRRB) regulates the licensed warehouses. After the depositor is recorded, the commodity is collected for quality inspection. Once acknowledged by the depositor and subject to the commodity being weighed and held in the warehouse, if it satisfies the requirements established for that specific commodity, a quality certificate will be provided. The warehouse operator provides the depositor with the warehouse receipt and uploads it to the warehouse receipt system (WRS). The WRS is connected to the exchange online trading platform once the WRRB has approved, at which point the data will be used to set up trade sessions. Trade sessions were organized with the awareness of all relevant stakeholders and market participants. After trade sessions, the exchange handles clearing and settlement activities to ensure that sellers are paid on time and that purchasers obtain ownership of the traded commodity with quality and quantity assurances. Purchasers can deliver the commodity to the appropriate warehouses.

Zimbabwe

In the case of Zimbabwe, farmers, contractors, and all other parties involved in the value chain of wheat

[5] URL: https://www.cftc.gov/IndustryOversight/ContractsProducts/AgriculturalTradeOptions/index.htm (accessed on 24.102024).

use the logistical framework set up by the Zimbabwe Mercantile Exchange (ZMX). Further, the government has chosen a structured, liberalized marketing system for strategic commodities and is now examining the instruments governing the marketing of agricultural products, where the floor producer prices for commodities such as maize, conventional grains, soy, sunflower, and wheat are regulated by the government.

These commodities must be acquired by the Grain Marketing Board (GMB) and paid by the government at these mandatory rates. Farmers that are self-financing sell to the GMB or at the best possible price. Every private contractor must repurchase contractual crops at a market rate. A transparent price discovery process is necessary for this new structure. The Zimbabwe Mercantile Exchange (ZMX) is instrumental in linking farmers with procurement agencies and the business sector.

Rwanda

EAX, the third largest exchange in Africa, was founded in 2014 to help farmers and agricultural producers obtain better prices for their goods. It also aimed to enable farmers to increase access to financial sector services by issuing quality and quantity guarantees, and collateral management services. Most of the commodities that EAX trades now are essential commodities such as paddy, rice, soy, beans, and wheat.

As a commodity exchange, EAX offers a comprehensive strategy encompassing aggregation, processing, storage, collateral management, and clearing to guarantee that the best value is realized, and extra liquidity alternatives are produced for Rwandan and regional farmers.

Further, the exchange is trying to develop a trading and supply chain network that links merchants and farmers to global commodities and financial markets in ways that guarantee increased revenue and a better quality of life. It concentrates on creating a bottom-up strategy for market development that uses farmers and storage as cornerstones. Farmers can use fully registered e-WR as collateral to obtain bank funding. Banks may offer credit to agricultural consumers at lower rates because of EAX's quality and quantity guarantees, which significantly lower the risk associated with lending.

Australia

In Australia, farmers participate indirectly in commodity derivatives markets through commodity pools. The advantages of commodity pools are their lengthy market window, which ensures that price risk is reduced by market changes. In other cases, the commodity pool consultant can sell the specific quantities needed to generate cash flow while the commodity is in the pool. Compared with on-farm storage, servicing and maintenance expenses are also lower. To help farmers prepare for the subsequent seasons, the pool manager offers advice on potential markets. The pool manager is also responsible for product marketing. It provides an effective marketing technique for producers of grains, sugar, and cotton, where pools are widespread and do not require cash flow. As long as the manager positions for price-upside participation, commodity pools provide a simple approach to profit from any prospective market upside.

France

In the case of France, futures markets play an essential role, as many farmers use the prices of the agricultural contracts traded on the exchange for signing pre-harvest contracts. In a study by Roussy et al. (2018), almost 17% of the total volume of farm sales is sold before harvest with the help of co-operatives acting as intermediaries. The price of contracts is linked to futures market contracts traded on exchanges. Final adjustments are made to the price paid upon delivery to reflect observed quality and increases or decreases in the price agreed upon at signing by the co-operative's scales (protein content, broken grains, and loss of vitreous aspect).

Farmers have access to information frequently published online and distributed by cooperative technicians, which they may use to assist them in negotiating their prices. The cooperative combines its understanding of the market and brokers' information to create price information.

The selling price is decided through forward contracts before the harvest. Farmers are given deposits during harvest as part of the average price contract, and further payments are made in equal instalments throughout the marketing season.

DISCUSSION

In the process of economic liberalization and deregulation in Indian commodity futures markets, futures trading in commodities has been reintroduced since 2003. The two major factors leading to such

reforms were their ability to manage price risk and the efficient discovery of future commodity prices. After a healthy run, signs of corrections were observed in the Indian commodity markets in 2012. However, the NSEL Spot Exchange scam of Rs 5,600 crore in July 2013 had disastrous consequences for the volume and value of trade. After the revelation of the scam, the turnover of the exchange decreased to almost 50% until February 2015. Although the FMC adopted several measures to restore confidence among participants, Indian commodity derivative markets were not able to revive and regain the previous high-growth trajectory.

Further, as per the SEBI annual report of 2021–2022, the volume of the agriculture sector in the Indian commodity derivatives markets is just 5.7% of the total volume traded in India. As India is a major producer of several agricultural commodities, the scope of price risk management and discovery is crucial. The low volumes of the agricultural sector indicate the huge potential in case stakeholders are made aware of the importance, especially in the era of high uncertainty in agricultural prices.

Therefore, the suggested measures for improving farmers' participation in Indian commodity markets can increase liquidity in commodity markets and help deepen the commodity futures market. Therefore, linking commodity value chain participants, including farmers, traders, aggregators, processors, etc., can be a win-win situation for exchange; policymakers and value chain agents as value chain participants can gain the advantage of price discovery and risk management roles. On the other hand, exchanges can gain in terms of increasing liquidity, especially in the agriculture segment (*Fig. 2*).

CONCLUSION

This study aims to recommend novel measures to improve farmers' participation in Indian commodity derivatives. This study suggests several policy initiatives to take Indian commodity derivative markets to the next level. Suggestions include spreading awareness to improve liquidity in commodity markets. It is also recommended that exchanges and policymakers focus on improving the effectiveness of current awareness programs. Further, with the introduction of index derivatives and options on futures, initiatives such as commodity trading simulation exercises and commodity price hedging simulation exercises can be taught in training rather than short-duration lectures. Furthermore, advertisements about the utility of commodity derivatives on similar lines of mutual funds can be aired on radio, newspapers, and other mass media platforms to spread awareness.

The paper also recommends incentivizing hedgers and participants to have actual exposure to commodities by subsidizing, given the higher cost of trading on Indian commodity bourses. Further, initiatives to encourage the indirect participation of value chain agents through option merchants, merchant banks, or any other specialized agency are also suggested. Similarly, price support provided to farmers by the Government of India through FCI or state procurement agencies can also be partially substituted in a phased manner through commodity exchanges through the use of put options that the government can subsidize.

It is also recommended to allow fractional trading of contracts in commodity derivatives, which will increase the reach of commodity derivative products. A smaller contract encourages small producers, processors, stockists, aggregators, etc., to use commodity futures to hedge price risk.

Finally, it must be noted that agricultural commodity derivatives contracts were introduced in India to provide a price discovery and risk management framework for its stakeholders. Despite several proactive measures, their effectiveness and utility have been questioned several times. Similarly, the success of the above-mentioned measures is debatable, especially when any issue related to farmers is considered sensitive. Stakeholders, especially farmers, are not so inclined towards market measures of price support, and they feel that in a welfare state, the government should play a vital role in direct procurement and provide direct incentives to farmers. In the same context, farm bills in India were taken back after prolonged protests by farmers and other stakeholders. Further, in the Indian context, when agriculture-related policies have to be modified, states have a significant role to play, and therefore, it becomes difficult for the central government to have a unified law for the entire nation. Despite these bottlenecks, several success stories have also emerged not only in India but across the globe, where farmers have shown keen interest in these instruments. Recently, a group of farmers appealed to SEBI to relaunch the agricultural commodity derivatives contract, which had been banned since last year. Furthermore, the use of derivative contracts has proven beneficial to small farmers in African countries. Such success stories give a ray of hope for emerging economies, especially where the agriculture

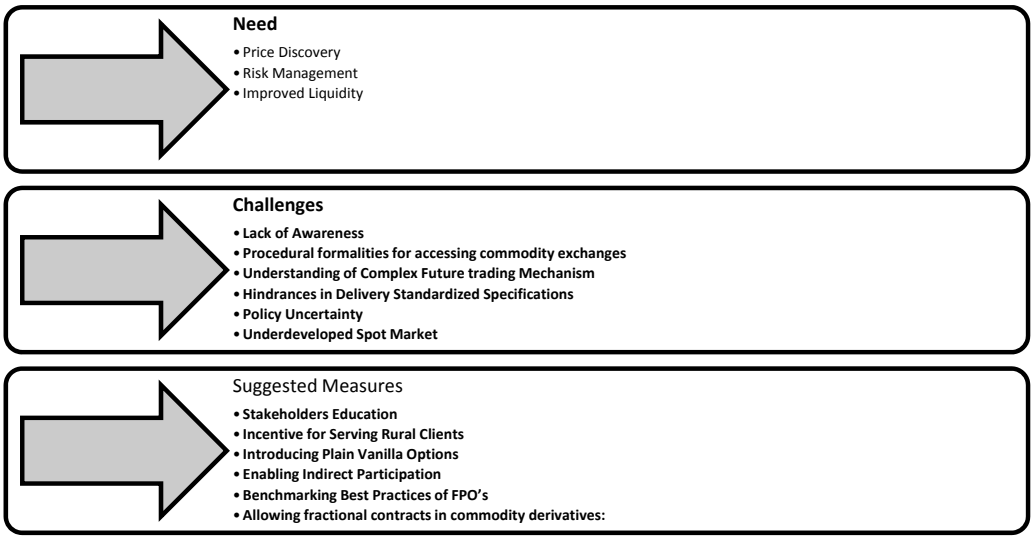

Fig. 2. **Need, Challenges and Suggested Measures for Improving Farmer's Participation**

Source: Author's own compilation.

sector has also undergone substantial transformation, and new-age farmers have shown interest and capability in using these instruments for price discovery and risk management. Furthermore, it should also be noted that the success of these measures cannot be seen overnight, and the government must formulate stable policies to onboard the farming community and other stakeholders on Indian commodity exchanges. Recent policy reversals of banning several agricultural commodity contracts created distrust among the participants, leading to a lower level of acceptability as instruments for price discovery and risk management.

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