EFFECTIVENESS OF FUTURES TRADING IN THE RUBBER MARKETS OF KERALA

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Abstract

The core functions that commodity futures exchanges intended to perform are price discovery and price risk management. Futures trading in agricultural commodities were introduced to provide the farmers, price information, which would help them to make production decisions as well as to lock spot prices for future derivatives and help the farmers access the markets easily. This study is an attempt to find out the utilization of price discovery and price risk management functions of Commodity Exchanges by the rubber farmers in Kerala. The study also attempts to find out the effectiveness of the awareness programmes conducted by the Commodity Exchanges among the rubber farmers in Kerala.

Key words: Rubber futures trading, Price discovery, Price risk management, Awareness programmes

Introduction

Rubber has made a great contribution for the economic progress of our country. Rubber has played an imperative role in the economic and industrial growth of India ever since its cultivation during the beginning of this century. Rubber development in India has been a success story, both in production as well as manufacturing. The rubber sector was immensely benefited through the Government policies like globalization and liberalization, which helped in market integration. India is both a rubber producing country as well as a consuming country. The world's total production of natural rubber was 12,070,000 tonnes in 2013 - 14 and India contributed 9,81,520 tonnes. The world's total consumption of natural rubber was 12,159,000 tonnes in 2014. Kerala accounts for 90% of the total Indian produce, 72% of the total rubber production is in the form of Ribbed Smoked Sheets (RSS), which is also imported by India, accounting for 45% of the total rubber imports. Production is dominated by small holdings sector, by accounting for 90.5% of the area and 93.5% of the supply during 2013-14. As regards geographical composition, Kerala accounted for 87.6% of the country's production during 2013-14.[3] The concentration of rubber cultivation is so heavy in Kerala that the economic well being of a large section of the population of the State depends on the commodity.[4] Rubber cultivation in India is focused mainly among small growers. NR is primarily a small holders' crop and the average size of a small rubber holding is around 0.53 ha. The small holdings account for 90 percent of the total area comprising 1.19 million small and marginal farmers and 94 percent of the total production of rubber.[5]

Futures trading were introduced to give direct benefits to the farmers through its two economic functions of price discovery and price risk management through hedging. Commodity exchanges provide a common platform for all the stakeholders, helping in price discovery and hedging. But the 'Small holder' perspective needs to be emphasized.

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[5] Annual report (2013-14), "Price Stabilisation Fund Trust, Department of Commerce, Ministry of Commerce and Industry, Government of India, pp.2.

Technologies suitable for 'barely literate' farmers are not developed, so that the actual benefits of trading through commodity exchanges are not enjoyed by the primary producers. Spot markets (cash market), are mostly fragmented over-the-counter markets. Hence price discovery made in these spot markets is inefficient. Price discovery in spot market is affected by geographical dispersion, differential needs of the buyers and sellers in terms of quality, quantity, place of delivery and difficulties associated with handling physical delivery, absence of option to settle the contract by payment of price-difference. In any case, the spot market does not meet the need for price-forecast felt by participants in the physical markets. But futures trading is a very efficient means of forecasting the price for a commodity as there is convergence of bids and offers originating from a large number of buyers and sellers from different parts of the country – and possibly from abroad. Price Risk Management is very closely related to Hedging, which means transfer of some or all of that risk to those who are willing to accept it, who are in turn called Speculators. Price risk is managed by taking opposite positions on the spot and futures market. The futures prices are linked to the spot prices through carrying cost, which comprises cost of storage, interest, wastage, shrinkage etc. Therefore, the two prices tend to move in uniformity. Taking opposite positions in the spot and futures market will help to offset the loss in any market due to adverse price fluctuations.[6]

Statement of the problem

Price discovery is the information about future spot price through futures market and it refers to the use of futures price for pricing cash market transactions (Working, 1948). Price discovery in futures market is defined as the use of futures prices to determine expectations of (future) cash prices (Schroeder and Goodwin, 1991). [7] Price discovery in today's commodity market is very efficient as all the stake holders are able to participate in the commodity exchanges. There is a transparency in the price discovery process as there are large numbers of terminals and ticker boards for the exchanges and information about prices are easily available through print media and television. There has been a revival of commodity futures market since 2003, but the commodity markets in Indian are inefficient in terms of price discovery due to various factors. Spot markets (cash market), are mostly fragmented over-the-counter markets. Hence price discovery made in these spot markets is inefficient. Price discovery in spot market is affected by geographical dispersion, differential needs of the buyers and sellers in terms of quality, quantity, place of delivery and difficulties associated with handling physical delivery, absence of option to settle the contract by payment of price-difference. In any case, the spot market does not meet the need for price-forecast felt by participants in the physical markets. Futures markets are said to emit price signals for the future periods in theory. In practice, such signals seldom influence cropping decisions especially in rubber. Majority of rubber cultivators are small and marginal farmers who own less than two acres of land and the ability to respond to price signals is rather limited.

Hedging is useful for agricultural and primary articles whose supply depends highly on natural conditions such as weather. In this market, the producer can fix his product price before hand by entering into a forward contract. Buyer can also do the same to confirm the purchase price.[8]An important purpose of a futures contract market is to provide facilities for those who produce, handle or manufacture basic commodities, to hedge their products, commitments or inventory stock. Hedging is price insurance and its value lies in the protection against fluctuation. A hedger minimises his risk by taking opposite positions in the

[6] "Futures Trading Basics", www.nmce,com

[7] Mathews (2012), "Foreign Trade in Natural Rubber – A case study with reference to Kerala" 43 - 53

[8] Gupta (2011) "Commodity Derivative Market in India. The Past, Present and Future", Analytique. Vol VII, No.2, April-June 2011.

futures and cash markets. Since the two markets usually move in the same direction, the profits of one market will cover the losses in the other. In the case of a commodity seller, like a farmer or a merchant, futures contracts offer protection from declining prices. A risk management or hedge transaction actually helps to lock well in advance the price of goods that are planned to be produced or either bought or sold for forward delivery in the physical market, which helps in bringing stability in prices through stocking[9]. But Commodity future markets in India are inefficient in terms of providing hedge against price risk due to factors like lack of participation of trading members, low market depth and thin volume due to Government's interference in Commodity Market, inadequate warehouse facility and deficient information system of commodity exchanges, which is a reason for lack of awareness about rubber futures trading and its benefits among the stake holders.

Commodity Exchanges enable consumers to have an idea of the price at which the commodity will be available at a future point of time and thus provide the farmers an opportunity to hedge their positions as per their views on the prices of the respective commodity[10]. The Forward Markets Commission and National Multi Commodity Exchange are conducting large number of awareness programmes for the different stake holders. Awareness Programmes are aimed at creating general awareness about Commodity Futures Markets and their economic functions and benefits for various stakeholders. These programmes are conducted by the National Exchanges. In Kerala, the NMCE is conducting number of programmes in the different districts among the various stakeholders, including farmers. In spite of the developments made in the commodity futures market, there is lack of awareness about the benefits of price discovery and price risk management among the farmers.

Futures trading will not be an effective tool for price discovery and price risk management unless production process and supply chains are strengthened.[11] Also lack of awareness about futures trading in rubber as well as its benefits of price discovery and hedging is another reason for the ineffectiveness of rubber futures trading in Kerala.

Review of Literature

Efforts have been made to review available studies pertaining to the characteristic aspects of commodity exchanges globally as well as pertaining to India.

Commodity Exchange characteristic specific:

This section is organized into two parts based on the relevant characteristics of the commodity exchanges. These are Price Discovery and Hedging on commodity exchanges.

Price Discovery

Simaan and Wu (2003) analyzed price discovery in the U.S option market. The aim of the study was to investigate the price discovery process on the most actively traded option that was listed on all five stock option exchanges. They measured the Hasbrouck (1995) information by using the second by second quotes book and the link between price discovery and other market conditions also were analyzed. This study found that new exchanges which were electronically equipped, were the leaders in providing the most informative quotes.

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[9] Madhoo, Bhuvan, "Is convergence between Commodity Derivative and Securities Markets and their regulators desirable?"pp 110 TAER 2010

[10] Vasisht A.K., "Econometric Analysis of Efficiency of Agro-Commodity Futures Market and Price Discovery" pp 150 TAER 2010

[11] Chandrashekar G (2010),"Do we need agro futures", TAER – Commodity Derivative Markets – Opportunities and Challenges 165 - 168

Indian agricultural commodities future markets are not yet mature and efficient (Kumar and Sunil, 2004). This was concluded by examining the price discovery for five commodities in six Indian commodities exchanges. Daily futures and comparable ready prices were used in the study. The ratio of standard deviations of spot and future rates were taken for empirical testing of ability of futures markets to incorporate information well. The study also empirically analyzed the efficiency of spot and future markets by employing the Johansen co-integration technique and revealed the inability of future market to fully incorporate information and confirmed inefficiency of future market.

Fu and Qing (2006) studied the price discovery process and volatility spillovers in Chinese spot-futures markets through Johansen co-integration, VECM and bi-variate EGARCH model. It was indicated in the results that there was a long-term equilibrium relationship and significant bidirectional information flows between spot and futures markets in China, with a dominant role played by futures market. Although innovations in one market could predict the futures volatility in another market, the volatility spillovers from futures to spot were more significant than the other way round.

Kabra (2007), in his study on futures market in India, found that price discovery function has little relevance for farmers in their present conditions because the infrastructure for involving farmers located in rural areas in the futures trade does not exist. Also, a warehouse receipt for enabling one to hedge in a distant metropolitan futures exchange is difficult in the Indian farm sector. Because, if a contract has to be concluded by physical delivery, there are a lot of transaction costs to be incurred as well as difficulty in fulfilling the technical conditions necessary for the effective use of futures market.

Kedarnath, (2008), has opined that the economic functions of price discovery and risk management are very significant for the development of commodity spot market in India and that there is interdependence between commodity future and spot market in agricultural commodities.

Yaganti (2009),in his study on spices and base metals regarding price discovery and hedging effectiveness, found that utilisation of futures price information is not efficient in spices, but in case of metals most of information in futures prices is efficiently used.

Vasisht, (2010) found that the commodity futures market in India is not efficient in predicting the future ready prices and thus is not able to discover future prices efficiently in commodities like pepper, groundnut oil and guar gum. According to him, one of the main reasons for the poor performance of the Indian futures market is inadequate participation of hedgers and to attract hedgers, there is a need for commodity exchanges and the Forward Markets Commission to explore new initiatives.

Kumar and Pandey (2011) studied the price discovery role of the Indian commodity futures markets through return and volatility spillovers between spot and futures prices. They found that for agricultural commodities, the price discovery takes place in both spot and futures markets. However, in the harvest period, when the futures trading volume is high, the futures market leads the spot market whereas in the lean period both markets jointly perform a price discovery. For the precious metals and energy commodities, the futures markets lead the price discovery role. In the case of industrial metals, LME spot prices (which are taken as spot prices for settlement by Indian exchanges) play a significant role in the price discovery process in the Indian market.

Doshit (2011) studied whether the commodity futures market in India are efficient through the study of four commodities- gold, silver, copper and rubber- traded on commodities exchanges. He found that Indian Commodity futures markets are inefficient across all the four commodities tested. According to the study, market inefficiency implies that the price discovery in Indian commodity exchanges is inefficient and not meaningful for large number of potential participants and primary producers of commodity. He has pointed

out that operational inefficiencies in physical market, like, troubles in handling, transportation, warehousing and delivery of products to contract specification are directly affecting the efficiency of the spot market.

Hedging on commodity exchanges:

Hedging is an integral activity of any commodity exchange. This section pertains to studies based on hedging.

Working (1953), conducted a study on futures trading and hedging and concluded that between different exchanges dealing in the same commodity, there is a strong tendency for hedgers to prefer to use the exchange which has the largest volume of speculative trading.

Turvey and Baker (1990) investigated the relationships of farm programs and farm finance on farmers' decisions to hedge with futures or options. Study of a two-period discrete sequential stochastic programming model of the farm firm indicated that farmers' use of futures and options decreased due to loan rates and target prices. Also farms with high debt were found to hedge more than farms with low debt. The results implied that evaluating farmers' use of futures and options based solely on market risks may exclude important information, namely participation in farm programs and the farm's capital structure.

Balachandran (2007) conducted a study on trading on commodity futures to analyse the expectations of the clients and concluded that the client cannot take the benefits of hedge positions in the present online trading system. He also found that not many Indian people are aware of futures trading and using online trading system and the farmers also don’t know much about using futures market to hedge their products.

Kumar and Pandey (2009) analysed the hedging effectiveness of agricultural and non-agricultural futures contracts traded in India. He found that there are great differences between agricultural and nonagricultural commodities with regard to the hedging performance of futures contracts traded in India. In case of agricultural commodities, Indian commodity futures markets provide higher hedging effectiveness than non-agricultural commodities when Indian spot prices are used. He also found that the hedging role of Indian commodity futures markets has increased in the recent period with increased activity in the market.

Gupta (2011), in his study on the Indian commodity derivatives market, found that derivatives provide hedging opportunities and also help in price discovery. He also concluded that the ill effect of the market, if any, arises from improper regulation and so the regulator should be efficient for the prospect of the market.

Scope of the study

The study focuses on the effectiveness of price discovery and price risk management functions of futures trading among the rubber farmers in Kerala. The study also analyses the effectiveness of the awareness programmes conducted in Kerala for the rubber farmers in rubber futures trading by the National Multi Commodity Exchange, which is the only exchange in Kerala which deals with rubber futures trading in Kerala.

Objectives of the study

1. To study whether the rubber farmers of Kerala are using the price discovery function and price risk management function of futures trading.
2. To study the effectiveness of the awareness programmes on rubber futures trading, conducted by the National Multi Commodity Exchange in Kerala for the rubber farmers.

Hypotheses of the Study

H_{01}: The two economic functions of futures trading viz. price discovery and price risk management are not being effectively used by the rubber farmers in Kerala.

H_{02}: The awareness programmes conducted on rubber futures trading in Kerala by the National Multi Commodity Exchange for the rubber farmers are not effective.

Methodology

Sources of Data

The study is based on both primary as well as secondary data. In Kerala, there is a regional concentration of production of NR in Kottayam District by producing 21.27% of the total production of the State, followed by Ernakulam producing 11.08% and Pathanamthitta producing 9.44%. Hence the primary data have been collected from the farmers in Kottayam, Pathananthitta and Ernakulam districts of South Kerala with the help of structured questionnaire. The questionnaires were tested by conducting a pilot survey of a few respondents selected on random basis. Utilising the information from the pilot study, questionnaire was modified for the final study. The questionnaire was administered personally using face to face method in order to improve the response rate. Nominal and ordinal scales were used to take the responses of respondents regarding demographic variables, while Likert's (1970) three point scale was used to take the responses regarding the level of awareness about rubber futures trading and role of commodity exchanges in the development of rubber markets in Kerala, on awareness scale ranging from little to not at all and role scale ranging from highly significant to not at all significant respectively. Cross tabulation has been utilized to represent the responses of the respondents.

The secondary data have been collected from reports, journals, books and official websites of the Rubber Board and different Commodity Exchanges like MCX and NMCE.

Sample Design

The researcher has adopted Multistage Sampling technique. The researcher has selected farmers in the study area and much care has been taken to ensure that the sample group represents the whole area of the study. In the first stage, the three districts, Kottayam, Ernakulam and Pathanamthitta which are having the highest Natural Rubber production in Kerala were selected. In the second stage, addresses of farmers were collected from 10 Regional offices of the Rubber Board in each District - 5 Regional Offices in Kottayam district, 3 Regional offices in Ernakulam district and 2 Regional Offices in Pathanamthitta district were selected. In the third stage, from each regional office, 3 Rubber Producers' Societies were selected and from each RPS, 10 farmers, who are engaged in rubber cultivation, were selected. Thus, 300 farmers were selected at random from the three districts.

Data Analysis and Tools used

The collected data have been processed both manually and with the help of computer software systems . Microsoft Excel and Statistical Package for Social Sciences (SPSS) have been used for the analysis of the data and the testing of the hypotheses. Appropriate statistical tools have been used in this study.

Results

1.1. Educational Level and level of awareness about futures trading

Kerala represents 88 percent of small holding rubber cultivation area in the country. Rubber cultivation and production needs a large and professional labour force during its whole lifetime existence. Tapping of rubber trees is not only a skilled job but also highly labour intensive. As skill is more important than educational qualifications, majority of the rubber farmers are not highly educated.

Futures trading will enable farmers to get a better price realisation and they would be free to choose between spot and futures trading depending on market conditions prevailing from time to time.

In order to find out whether awareness about futures trading is related to the educational level of the farmers, the following analysis was done.

Table 1.1. Educational Level and Level of awareness about futures trading

		Level of awareness of futures trading			Total
		Little	Much	Not at all	
Educational level	Upto matriculation	33 21.0%	11 7.0%	113 72.0%	157 100%
	Graduation	50 43.1%	13 11.2%	53 45.7%	116 100%
	PG/ Professional& above	8 29.6%	8 29.6%	11 40.7%	27 100%
Total		91 30.3%	32 10.7%	177 59.0%	300 100%

Pearson Chi-square:31.325, df=4, p=.000
Source : Survey data

Table 1.1. indicates that majority 59% (177) of the farmers are not at all aware about futures trading and 30.3% (91) are having little awareness about futures trading. Also, among the farmers who are the majority 52.33% (157) having educational level up to matriculation, majority 72% (113) are not at all aware about futures trading in rubber. Among the farmers who are graduates, 43.1% (50) are little aware about futures trading and 11.2% (13) are much aware about futures trading where as among the farmers having educational level only up to matriculation only 21% (33) are little aware and only 7% (11) are much aware about futures trading. But among the farmers who are post graduates or professionals, 29.6% (8) are little as well as much aware about futures trading respectively.

The Chi-square test proves that there is a close association between educational Level and level of awareness about futures trading.

Farmers with higher educational level are more aware about futures trading although their number is comparatively less when compared to the number of farmers who are having educational level only up to matriculation and who form the majority, who are unaware about Futures trading.

1.2. Awareness about the benefits of futures trading

The two economic benefits of futures trading are price discovery and hedging. The future prices are discovered in a transparent manner on the online platforms of the national commodity derivatives exchanges. With the help of information on future price trends, and probable supply and demand of various commodities, the farmers can plan their cultivation as well as storage and sale of their produce in advance. Even when rubber market remains subdued due to global uncertainties, futures trading will provide an effective hedging mechanism for farmers. They will not be forced to exclusively depend on spot markets alone or hold the commodity expecting a price rise in future.

To find out whether the farmers are aware about these benefits, the following analysis was done.

Table 1.2. Awareness about benefits of futures trading

Level of awareness of futures trading		Awareness about benefits of future trading			Total
		Price Discovery	Hedging	Not aware	
	Little	31 34.1%	2 2.2%	58 63.7%	91 100%
	Much	18 56.2%	0 0.0%	14 43.8%	32 100%
	Not at all	0 0.0%	0 0.0%	177 100%	177 100%
	Total	49 16.3%	2 0.7%	249 83.0%	300 100%

Pearson Chi-square: 98.410, df = 4, p=.000
Source : Survey data

Table 1.2. clearly shows that majority 83% (249) of the farmers are not aware about the benefits of Futures trading. Only 16.3% (49) are aware about price discovery. Also, among the farmers who are aware about the benefits of futures trading, 56.2% (18) are only much aware about price discovery benefit and 34.1% (31) are only little aware about price discovery.

The Chi-square test proves that there is close association between level of awareness about futures trading and awareness about the benefits of futures trading viz. price discovery and hedging.

So it can be inferred that among the farmers, majority are not aware about the benefits of rubber futures trading and among those who are aware about the benefits, they are aware only about price discovery. The benefit of hedging is known only to a minority.

1.3. Reason for not trading in rubber futures

Futures trading in natural rubber began on 15 March 2003 for the first time in India,with the hope that the rubber farmers, a large percentage of whom are having small holdings, will benefit immensely through the futures trading.

But there are only very few farmers who are trading in rubber futures. In order to understand whether lack of awareness about the benefits of futures trading is the reason for not trading in rubber futures, the following analysis was done.

Table 1.3. Reason for not trading in rubber futures

Awareness about benefits of future trading	**Trading in Futures**		**Total**
	Yes	No	
Price Discovery	21 43.8%	27 56.2%	48 100%
Hedging	0 0.0%	2 100%	2 100%
Not aware	13 5.6%	219 94.4%	232 100%
Total	34 12.1%	248 87.9%	282 100%

Pearson Chi-square: 54.858, df = 2, p=.000
Source : Survey data

Table 1.3. depicts that among the farmers who are aware about the benefits of futures trading, 12.1% (34) are trading in rubber futures and majority 87.9% (248) are not trading in rubber futures.

The Chi square test proves that there is close association between level of awareness about the benefits of futures trading and trading in rubber futures.

Thus it can be inferred that, lack of awareness about the benefits of rubber futures trading is the major reason for not trading in rubber futures trading.

1.4. Source of Awareness about Futures Trading

There are different sources through which awareness about futures trading is created among the farmers. The Commodity Exchanges are creating awareness through awareness programmes conducted at different places for the various stake holders. The Rubber Board is also conducting classes for the benefit of the rubber farmers and in those classes, futures trading is also introduced for their awareness. There are cooperative societies in Kerala which are successfully carrying out futures trading in rubber and through them the farmers have been able to become aware about futures trading in rubber. The following analysis was done to find out about the source of awareness about futures trading.

Table 1.4. Source of Awareness about Futures Trading

Level of awareness of futures trading	Source of awareness					Total
	NMCE	Rubber Board	Media	RPS	Co-op Society	
Little	7 7.7%	21 23.1%	4 4.4%	18 19.8%	41 45.1%	91 100%
Much	8 25.0%	7 21.9%	4 12.5%	1 3.1%	12 37.5%	32 100%
Total	15 12.2%	28 22.8%	8 6.5%	19 15.4%	53 43.1%	123 100%

Pearson Chi-square:12.786, df = 4, p=.012
Source : Survey data

Table 1.4. reveals the fact that among the 123 farmers who are aware about the futures trading in rubber, majority 43.1% (53) farmers became aware about it through the cooperative societies. 22.8% (28) were created awareness through the Rubber Board, 15.4% (19) through the Rubber Producers' Societies (RPS), 12.2% (15) through National Multi Commodity Exchange (NMCE) and 6.5% (8) through media.

The Chi square test proves that there is close association between level of awareness about futures trading and source of awareness about the futures trading.

Thus, it can be inferred that the role of commodity exchanges in creating awareness about futures trading among farmers is very negligible. Cooperative Societies and Rubber Board have been able to create more awareness than the Exchange.

1.5. Level of awareness of futures trading and Participation in awareness programmes

Commodity Exchanges have been undertaking various types of activities for the farmers for increasing awareness and improving participation in the Commodities market.

To find out whether participation in awareness programmes depended on the level of awareness about futures trading, the following analysis was done.

Table 1.5. Level of awareness of futures trading and Participation in awareness programmes

Level of awareness of futures trading	Participation in awareness programme		Total
	Yes	No	
Little	32 35.17%	59 64.83%	91 100%
Much	25 78.13%	7 21.87	32 100%
Not at all	4 2.26%	173 97.74%	177 100%
Total	61 20.33%	239 79.67%	300 100%

Pearson Chi square = 114.027, df= 2, p= .000

*Sourc*e: Survey data

Table 1.6. Binomial Test
Participation in awareness programmes

		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Participation in awareness programme	Group 1	No	239	.80	.50	.000
	Group 2	Yes	61	.20		
	Total		300	1.00		

*Sourc*e: Survey data

Table 1.5. indicates that among the 123 farmers who are aware about rubber futures trading, only 57 farmers (46.34%) have participated in awareness programmes.

The Chi-square test proves that there is close association between level of awareness about futures trading and participation in awareness programmes. This proportion is statistically significant @ 5% level of significance in the binomial tests.

Thus, it can be seen that majority, 80%, of the farmers have not participated in awareness programmes as they were not aware about rubber futures trading and although 41% of the farmers were aware about rubber futures trading, among them only 19% had attended awareness programmes.

1.6. Creation of interest in trading in rubber futures after participating in awareness programmes

Awareness programmes are conducted by the Commodity Exchanges to make the farmers understand about the benefits of futures trading. If the farmers have benefitted through the awareness programmes, they would be interested in trading in futures.

Among the farmers who participated in awareness programmes, an analysis was done to find out whether they became interested in trading in rubber futures after participation in awareness programme.

Table 1.7. Creation of interest in trading in rubber futures after participating in awareness programme

Pearson Chi square = 3.180, df= 1, p = .075
Source: Survey data

Table 1.7. indicates that among the 61 farmers who attended the awareness programme, majority 57.4% (35) became interested in trading in rubber futures, where as 42.6% (26) were not interested in trading even after participating in awareness programmes.

Participation in awareness programme	Interest in futures trading after awareness program		Total
	Yes	No	
Yes	31 54.4%	26 45.6%	57 100.0%
No	4 100.0%	0 0.0%	4 100.0%
Total	35 57.4%	26 42.6%	61 100.0%

The Chi-square test proves that there is close association between interest created in trading in rubber futures and participation in awareness programmes.

So it can be inferred that farmers will get interested in trading in rubber futures if they participate in awareness programmes.

Findings

The study has found that the educational level of the farmers has a significant role in generating awareness about rubber futures trading among the farmers. Majority of the farmers are having educational level only up to matriculation and they are not aware about rubber futures trading. Farmers with higher educational level are more aware about futures trading but their number is comparatively less when compared to the number of farmers who are having educational level up to matriculation.

The study has also found that among the farmers, majority are not aware about the benefits of rubber futures trading and among those who are aware about the benefits, they are aware only about price discovery. The benefit of hedging is known only to a minority. It is also seen that majority of the farmers have not participated in awareness programmes, although a few are aware about futures trading.

It is observed that the role of commodity exchanges in creating awareness about futures trading among farmers is very negligible. Cooperative Societies and Rubber Board have been able to create more awareness than the Exchange.

Suggestions

A series of Awareness Programmes for the farmers should be organised by the Commodity Exchange, involving the Rubber Board, Rubber Producers'Societies and Cooperative Societies at Panchayat Level. Intense publicity should be given through print and

visual media. The futures' trading is a complex process and, therefore, requires to be made simple and farmer-friendly. The participation as well as getting benefit from commodity futures market requires knowledge of English as well as computers. If the process is simplified and information made available in vernacular languages, many growers will appreciate the market fundamentals and may eventually participate in it. Literacy programmes should be initiated to make the farmers aware about the benefits and risks of futures markets. As majority of the farmers are having education only up to Matriculation, use of local language in trading will help them to understand the concepts of futures trading well and boost their confidence that they would be benefitted. As a part of the training, it would be highly effective if arrangements could be made for some kind of "mock trading" in future market through demo software, preferably in local language.

As Farmers' Groups like Rubber Producers' Societies, Co-operative Institutions, Regional Rural Banks, NGOs etc. that work in rural areas have close association with and the trust of farmers, they should be allowed and encouraged to act as aggregators. The aggregators will be able to hedge on behalf of the farmers in the futures market, as they have the requisite knowledge and operational skills needed to participate in these markets.

These measures will help the farmers and local traders to understand the mechanism well and encourage them to participate in futures market.

Conclusion

The small and marginal rubber farmers in Kerala, whose educational level is only up to matriculation, are not aware about the concepts or the benefits of rubber futures trading. Hence they are not utilising the economic benefits of price discovery function and price risk management function of rubber futures trading.

The National Multi Commodity Exchange in Kerala has not been able to reach the rubber farmers of rural areas through their awareness programmes. It should have close association with the Rubber Board, Rubber Producers' Societies and Co-operative Institutions, who are in close contact with the rubber farmers and conduct more awareness programmes for the rubber farmers.

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