CHAPTER - V
SUMMARY AND CONCLUSIONS

Persistence of agricultural price instability along with farmer’s direct exposure to such fluctuations remains major concerns for policy makers in India. The dimension of the problem warrants additional attention in case of agricultural products since unlike others, these carry added risk of witnessing seasonal fluctuations and attracting lower prices during harvest season. Changing economic environment, changing demand and supply position of agricultural commodities and growing international competitions require wider roles for futures markets in an agricultural economy. All this indicates that India can be promoted as a major centre for trading of agricultural commodities derivatives. Under such circumstances, a wider role for futures markets to ensure stability is required as an efficient risk minimizing tool.

A major problem with operationalization of futures market for agriculture in India is its unorganized character. In addition, risks associated with agricultural commodities market tend to vary from commodity to commodity avoiding tractable solutions. Therefore, demand for commodity wise research on the underlying fundamentals which govern demand, supply and pricing behavior poses a surmountable task in searching for a viable option. Futures market is highly useful to all the segments of the economy. It is useful to the producer because they can get an idea of the prices likely to prevail at a future point of time and therefore, can decide between various commodities and choose the best that suits them. It enables the consumer to get an idea of the prices, at which the commodity would be available at a future point of time. The futures trading are also useful to the exporters, as it provides an advance indication of the prices likely to prevail and helps the exporters in quoting a realistic price.

Price discovery and price risk mitigation are the main objectives of commodity futures markets, which enables the farmers to take rational decisions about cropping and marketing of their produce to increase their farm income. This creates incentives and resources for investment in agricultural operations to improve productivity. The answer to the question whether futures markets affect spot prices is obviously yes. Otherwise, futures markets would serve no role at all. Futures markets
allow speculators to take positions in commodities without being involved in physical trade and the liquidity that speculators bring permits more information to be traded, compared to what would be possible with only physical trading. The benefits from such trading are better price discovery, provision of more reliable risk management tools and, reduced spot price volatility.

Giriraj Seeds Industries is situated at Junagadh- Dolatapara, Junagadh. Company established in 1986 year. It is trying to increasing their processing plant and selling of its products and also try to upgrade the marketing activities. The objective of the company is to maintain the quality of its products and maintain the goodwill of company in market.

The objective of the study were as follows

1. To examine the extent of market integration between spot and future market prices for coriander.
2. To understand the behaviour and pattern of causality between spot and future market for coriander.
3. To assess the efficiency of coriander future market in its role of price discovery and risk management function.
4. Forecasting of spot and future prices for coriander.

Giriraj seeds industries was purposively selected for the study and it was confined to Junagadh city. Secondary data was collected from official sites of NCDEX. Data include close price, open price, high price, low price, volume and delivery center. Lag selection criteria, Unit root test, Johansen Co-integration test, Vector error correction model, Granger Causality test, Ratio test and ARIMA model was used for the study.

5.1 Major Finding of the Study

5.1.1 To examine the extent of market integration between spot and future market prices for coriander.

The result of market integration done using Johansen co-integration test and 9 lag order chose based on sequential modified LR test statistic (LR), Final prediction error (FPE), Akaike information criterion (AIC) and Hannan-Quinn information criterion (HQ) Criteria. Augmented Dickey-Fuller (ADF) unit root test which show that level data were non-stationary but their first differences were stationary. Thus, the price series of spot and futures markets have a unit root. The occurrence of unit root
in the price data generation process of these commodities gave a preliminary indication of shocks which may have permanent or long-lasting effect. Johansen multiple co-integration procedure indicated that the model variables had a long-run equilibrium/co-movement among the spot and futures price series during the period under study. The existence of co-integration is necessary for long-term market efficiency. It helps to determine whether spot prices are reflected by the futures prices or not. Vector Error Correction model revealed that there was long run relationship between futures and spot prices and the adjustment towards equilibrium was made by spot prices. For short causality Wald test is used. It implies that price discovery occurred in markets and it was also transmitted in short run. Results of regression model reveal mixed findings. There is one-way causal linkage from future market to spot market prices for Coriander. So, future markets price of Coriander plays the leading role in the price discovery process.

5.1.2 To understand the behaviour and pattern of causality between spot and future market for coriander.

The results of VECM on unidirectional causality from future to spot price of coriander market are confirmed by Granger causality test. With the null hypothesis of spot price does not Granger cause futures price and futures price does not Granger cause spot price. It indicates that there is unidirectional causality from future prices to spot. Spot price is said to be granger caused by future prices, means future price helps in the prediction of spot price.

5.1.3 To assess the efficiency of coriander future market in its role of price discovery and risk management function.

Coriander futures market, liquidity varied considerably, ranging from 0.31 to 33.46. Liquidity continuously increases from year to year, except 2015 and 2016. The highest liquidity 33.46 occurs in the year 2014. In 2016 it is lowest 4.51 means producer does not find greater interest. This variation in different years happens mainly because of high volatility in price of Coriander and a producer doesn’t find usefulness of futures market as it is not profitable for them. Overall, liquidity is a serious problem in Coriander market.

The Volatility ratios are more than one most of the percentage times with 72.8 percentages indicating speculative activities in pepper futures market. The percentage for ratio less than one is 16.6 times, means that information is not fully incorporated.
Ratio equal to one is 10.4 times the percentage ratio shows futures price is able to incorporate information efficiently and fully.

**5.1.4 To assess the efficiency of coriander future market in its role of price discovery and risk management function.**

ACFs were significantly different from zero and fell outside the 95 per cent confidence interval. Hence, the spot price of Coriander was non-stationary. It is seen that the partial auto correlation function (PACF) declined rapidly after the first lag period, which indicated the non-stationarity of the spot price series. The non-stationarity was corrected through appropriate differencing of the data. The value of $d$ in the ARIMA model was unity (1) as the differencing was done only once to arrive at stationary series. In the present study the best fitted model was ARIMA (1, 1, 14). On comparing the alternative models, it was observed that SBC (12.19) and MAPE (37.61) were least for ARIMA (1, 1, 14) model was considered the most representative model for the price of coriander.

**5.2 CONCLUSION**

The future markets of agricultural commodity depends on the transparency and efficiency of its functioning in terms of price risk management, price discovery, flexible contact specification, controlling unfair speculation, commodity delivery system, coverage, infrastructural support, etc. Empirically the study of this research examines the market which reacts first in agricultural commodity markets in India by assessing the relationship between the spot and future prices of Coriander traded in NCDEX, using Johansen’s cointegration approach. Empirical results suggest the existence of long-run equilibrium relationships between futures and spot prices for Coriander and also short run relationship between markets. The relationship direction of future price and spot price are in general, where there is one-way causal linkage from future market to spot market prices for Coriander. Volatility Ratio test indicating speculative activities in coriander futures market. Liquidity ratio indicates that liquidity is a serious problem in Coriander market. The value of $d$ in the ARIMA model was unity (1) as the differencing was done only once to arrive at stationary series. In the present study the best fitted model was ARIMA (1, 1, 14). On comparing the alternative models, it was observed that SBC (12.19) and MAPE (37.61) were least for ARIMA (1, 1, 14) model was considered the most representative model for the price of coriander.