



MAIZE POTENTIALITY, GROWERS' HURDLES AND RISK MANAGEMENT INITIATIVES

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ABSTRACT

“Do maize cultivators are gaining from high potentiality of maize cultivation”?

Maize is one of the most versatile emerging crops having wider adaptability under varied agro-climatic conditions. Globally, maize is known as queen of cereals with highest genetic yield potential among the cereals and is the third most important food crop contributing to nearly 9 % in the national food basket. In addition to staple food for human being and quality feed for animals, maize serves as a basic raw material as an ingredient to thousands of industrial products. Despite the sustainable growth in maize production with considerable CAGR, marginal and small farmers are not able to take the advantage of maize potentiality as most of the cultivable land is fragmented all states where maize is the principal crop. The agriculture sector of Karnataka and Telangana states with considerable stake in Indian maize production is characterized by lack of reliable and timely information on production & marketing of produced. There is also a dearth of analysis on various vital aspects related to maize crop like latest prices and trends at global arena, demand & supply patterns, scientific forecasting & weather information. Unfavorable deviations in maize prices due to global demand & supply behaviors cause risk to farmers and reduces the expected returns. This conceptual paper is an attempt to study the risks faced by the maize growers in Karnataka & Telangana states and tries to answer the questions like what are the constraints in maize production and marketing? Are there any

methods and tools available to mitigate the risks? What is the role of government in safeguarding the maize growers' interests and financial returns? This paper also reviews the emergence of commodity derivative markets, commodity derivative exchange NCDEX role in risk management.

KEYWORDS:Maize Derivatives, NCDEX, Futures, Options & Warehouse Receipts.

Introduction

Maize the queen of cereals with its wider adaptability to varied agro-climatic conditions and its efficient utilization of radiant energy and fixation of CO₂ from the atmosphere, is considered as one of the major high yielding crops of the world. It is providing approximately 30% of the food calories to more than 4.5 billion people along with rice and wheat and is addressing some of the food security issues of the developing nations. Despite maize being a rain fed crop, its versatility has the highest genetic yield potential among the cereals and is cultivated in 160 countries covering 150 m ha of cultivable land with wider diversity of soil, climate and biodiversity contributing to 782 m t, nearly 36% of the global grain production. Since few years, Maize is gaining popularity across the globe due to its considerable utility in many sectors in different forms majorly as feed for animals and humans. It serves as an ingredient to thousands of industrial products like starch, oil, protein, alcoholic beverages, food sweeteners, pharmaceutical, cosmetic, film, textile, gum, package and paper industries etc. Low cost of cultivation, easy adaptability to various climatic conditions, increase in productivity, more cultivars, minor fluctuation in prices compared to other cereals and high global demand are catching the attention of agriculture sector across the developing countries like India. The United States of America (USA) produces 35% of world maize occupying the first position followed by China and Brazil. India stands at fifth position with 68 lakh ha. farming area, and at 6th position with 140 lakh tonnes of production in recent years. In case of productivity, U.S.A. is having the highest productivity of 10,052 Kg/ha which is double than the global average (4.92 t ha⁻¹). It is estimated that India requires 325 million tons of food grain by 2020 AD which demands consistent increase in production and productivity of agricultural crops. Though, Indian agri sector growth has picked up from 2.9 percent to 3.6 percent per year during 2005 to 2015, scarcity of agricultural land and rapid population growth, demand more food crops which can be met with Maize as it has immense potential to meet food requirement of human population. India produces about 23 million tonnes (mt) of maize annually with an average yield of 2.5 tonnes per hectare. During the

last three decades, maize production in India has remarkably increased, largely driven by the growing demand from the feed industry. Maize is grown in traditional areas to meet household food grain requirements under marginal and rain fed, non-traditional areas which are mostly commercial and with more favorable production environments. Maize is cultivated throughout the year in all states of India&predominantly growing states that contributes more than 80 % of the total maize production are Andhra Pradesh (20.9 %), Karnataka (16.5 %), Rajasthan (9.9 %), Maharashtra (9.1 %), Bihar (8.9 %), Uttar Pradesh (6.1 %), Madhya Pradesh (5.7 %), Himachal Pradesh (4.4 %). Apart from these states, Maize is also grown in Jammu and Kashmir and other North-Eastern states. In Southern states of India, farmers are substituting maize for rice wherever there is a drop in the water level as Maize is a viable option for diversifying agricultural production, owing to its adaptability in multiple seasons under different ecologies. It has witnessed 56 per cent output growth in the period compared with 20 per cent for rice and 32 per cent for wheat. The growth has been supported by an absence of government control widely seen in wheat and rice. The agriculture price support policy of the central government is also designed to boost maize production by announcing minimum support price –Rs. 1,325 per quintal in 2016. The crop has been included in the government’s ambitious Rs. 500 crore crop diversification strategy that is announced for North Indian states of Punjab, Haryana and western Uttar Pradesh. It is estimated that nearly one-fourth of the stock keeping units in a modern grocery store contain maize in one form or the other ranging from toothpaste, detergent, paper, dyes, soaps to artificial sweeteners, fructose, etc. Maize also finds application in food containers, plastic food packaging, baby powder, diapers, medicine, vitamin tablets, textile products, candies and so on. Maize rich breakfast cereals, cooking oils, snacks and popcorn have also become popular. Internationally, maize is processed to produce bio-ethanol in a big way for blending with auto fuels.

Telangana is a state of diverse soil and climatic condition that lead to diversified farming systems. Climate of the state is very favourable for the maize crop and hence maize can be grown in any season in the state. Maize is occupying more acreage under nontraditional season as well as non-traditional areas and it is driver for crop diversification in the state. Maize systems are dominant in Telangana zones during monsoon season and is mainly grown in Karimnagar, Warangal, Medak, Nizamabad, Adilabad and Rangareddy districts. Since the starch content for the crop here is higher than other states, it is mostly purchased by starch companies entire year.

The agricultural sector plays an important role in overall development of Karnataka and supports nearly 65 per cent of the state's population. Agriculture in the state is now characterized by wide crop diversification and still remains highly dependent on the vagaries of southwest monsoon. In recent years Maize crop is found to be the fastest growing crop with Compound Annual Growth Rate (CAGR) of 8.5 per cent compared to 2.2 per cent of rice in the last three decades. Uttarkannada, Shimoga, Raichur, Hassan and Chikmagalur districts have considerable production of maize crop in the state. The districts of Chamrajnagar, Dharwad and Bijapur etc., have also increased their area and production of maize moderately in the state. Davangere is the major maize producing district in Karnataka accounting for 25 per cent of the state production and is estimated at 800,000 tonnes.

Review of Literature

1. **K. Singha and A. Chakravorty (2013)** in their article, '**Crop diversification in India: a study of maize cultivation in Karnataka**', mentioned about growing need of agricultural production has been really felt with the growth of population, not only for the sake of food security but also for providing employment. Crop diversification within the sector has also been noticed to a great extent. Of which, the growth of production of maize has registered at the highest with CAGR at 8.5 per cent in the last three decades. Study explored that the introduction of new hybrid seed (HYV) is one of the most important factors for significant growth of maize crop in the state.

2. In the article, '**The Role of Derivatives in The Commodity Market**', Soumya Mukesh, discussed the history of commodity derivative market in India. Author discussed about the reintroduction of commodity derivative markets and the current trends, strong growth potential of the market, the actual growth trajectory, and the attitude of the policy makers and the efficiency of the regulatory mechanism. Author said that investing directly in the agricultural products and commodities gives the investor a share in the commodity components of the country's production and consumption. Money managers and average investors, however, usually prefer commodity derivatives rather than commodity themselves. A common investment objective is to purchase indirectly those real assets that should provide a good hedge against inflation risk.

3. In article '**Problems and Prospects of Agricultural Marketing in India: An Overview**',

authors A. Vadivelu and B.R. Kiran mentioned about the agri marketing and facilities available to farmers to sell the produced. They pointed out that there are many kinds of agricultural products produced in India and the marketing of all these farm products generally tend to be a complex process. They felt that suitable marketing system should be designed so as to give proper reward or return to the efforts of the tiller of the soil. In the article, they focused on importance of market information as a means of increasing the efficiency of marketing system and promoting improved price formation. In the authors' perspective, it is crucial to the farmers to make informed decisions about what to grow, when to harvest, to which market produce should be sent and whether or not to store it.

4. In the article 'Value Chain Analysis of Maize Seed Delivery System in Public and Private Sectors in Bihar', authors Ranjit Kumara, Khurshid Alama, Vijesh V. Krishnab & K. Srinivasa (2012) have stated that Bihar has emerged as one of the most promising states for maize production in India, where it is cultivated in all the three seasons. This offers an opportunity for strengthening maize supply chain from seed to end-use. Different systems of maize seed delivery co-exist in the state. This study has been conducted in the Samastipur district (the largest maize growing district) of Bihar in 2010- 11 and is based on surveys of seed producers, farmers, seed distributors, private seed companies and public research institutions as to understand the delivery system of maize seed in a value chain perspective. The study has mapped the value chain of public and private seed systems and has brought out the need for a greater emphasis on integration of different stakeholders involved in the chain. Appropriate backward and forward linkages of maize growers with seed companies are likely to generate better returns from maize.

5. Km. Saroj Gupta. (2012), in her article 'Sustainability of scientific maize cultivation practices in Uttar Pradesh, India', (2012) talked about the Sustainability of scientific maize cultivation practices must be ensured to attain the goal of agricultural sustainability. The study was conducted in purposively selected state i.e. Uttar Pradesh. A total sample size of 80 maize farmer respondents and 20 SMS/ Experts were selected by using multi-stage random sampling technique and simple random selection procedure respectively. Data were collected by using personal interview method. The collected data were tabulated, analyzed and interpreted with the help of appropriate statistical tools. Among the practices studied in scientific maize cultivation, mean sustainability scores obtained from farmer respondents was highest for irrigation followed

by application of FYM, use of HYV and application of synthetic nitrogenous fertilizer respectively. The experts perceived significantly higher sustainability in all practices.

6. B. R. Kumara, S. B. Hosamani, N. R. Mamle Desai, S. N. Megeri and M. H. Hosamani (2012) in their research article, '**Costs and returns of major cropping systems in northern transition zone of Karnataka**', mentioned about their research study which was conducted in Dharwad and Belgaum Districts of Karnataka. A sample size of 160 farmers was selected using multiple stage random sampling method. Field level data were elicited for the agricultural year 2009-10 through personal interview method. For analyzing the data collected tabular analysis was employed. Maize + redgram, Sorghum+ redgram, Greengram + redgram and Soybean were the major cropping systems identified. Returns per rupee of expenditure was found to be the highest in cropping system II (Sorghum+ redgram)

7. Amrutha C.P (2009), in her doctoral thesis, '**Market Information System and its Application for Agricultural Commodities in Karnataka State – A Case of Onion**', opined that market information is an important facilitating function in the agricultural marketing system. It facilitates marketing decisions, regulates the competitive market process and simplifies marketing mechanisms. Market information is a means of increasing the efficiency of marketing system and promoting improved price formation. It is crucial to the farmers to make informed decisions about what to grow, when to harvest, to which market produce should be sent and whether or not to store it. Improved information should enable traders to move produce profitably from a surplus to a deficit market and to make decisions about the viability of carrying out storage where technically possible. She has quoted through her research that, at present, the information is disseminated through various media like radio, newspapers, blackboard display and public address system at market yards.

8. G. Basappa, J.B Deshmanya and B. L. Patil(2007)in their research work '**Post- Harvest Losses of Maize Crop in Karnataka - An Economic Analysis**', stated that improper post-harvest handling has led to considerable loss in Maize. The present study was conducted during 2003-2004 in Karnataka for estimating post-harvest loss in maize at different stages at farm level. It is selected based on maximum area under maize crop that is grown largely in Davanagere and Belgaum. There is a need for an integrated effort to increase the productivity by

evolving high yielding varieties hybrids in maize. The improvement in storage facilities required immediate attention of the policy makers for reducing post-harvest loss in maize.

Need for the Study

Despite Maize called as the queen of cereals with its productivity and adoptability to all climates and soils and huge demand across the world, growers/farmers are facing problems in production and marketing of Maize produced. Lack of market information regarding prevailing prices, increased arrivals in the markets due to introduction of high yielding varieties of maize, lack of storage facilities, training in marketing system, malpractices prevailing in the markets of maize like excess weightment, delay in payment, auction, different kinds of arbitrary deductions for religious and charitable purposes etc, and growers' aggressive production practices often lead to change in crop returns and profitability. Though Telangana and Karnataka are the major states for Maize production in India, farmers are facing problems in turning the production into profits. In spite of measures taken by Government of India, returns are less to Maize farming community in these two states. This study tries to explore options available for Maize growers to cash their labour and production in Maize.

Objectives of the Study

1. To know about potentiality of Maize crop in general, Karnataka & Telangana states in specific.
2. To understand the problems faced by the Maize farmers in Producing & Marketing the crop.
3. To study the risk tools and provisions available for Maize growers

Research Methodology

Research methodology adopted in this paper is partly based on theoretical concept & partly empirical study that deals with the problems faced by Maize growers of Karnataka and Telangana states in India, the role of the Government of India & NCDEX in safeguarding the interests of the maize growers from losing the income on yield. The objective of the paper is to make the reader aware of potentiality of maize, risk management tools available to hedge the risks faced by these farmers. Data was collected from the secondary sources like Articles,

journals, research works done by various scholars, in-house journals, Magazines, and explored from books and website related to agri marketing and derivatives.

Analysis and Finding

Marketing of agricultural produce which involves moving agricultural product from the farm to the consumer has not gained as much importance as the agricultural production in India unlike developed countries. Generally in the developing countries, the agricultural marketing services will be attached to their respective agricultural ministries which help in development of market information, infrastructure development, marketing extension and training in marketing. Agricultural ministries with its supportive policies, legal, institutional, macro-economic, infrastructural environment focuses on agribusiness. Indian farmers face the problem with disposal of their produce and this problem is gaining equal importance as the modern production technology adoption. Stable prices will induce the cultivators to expand production and increase their marketed surplus. If the sustained breakthrough in agricultural sector has to be achieved, the farmers are to be relieved of the risks and uncertainties involved in agricultural production and marketing. Maize producers in India are no exemption to the risk facing from the cash crop producers. In Indian Maize production, few major problems have been identified which are to be addressed in order to have the advantage of high productivity and adaptability to all climates. The price fluctuation in the post-harvest period due to heavy arrivals in the market with advent of high yielding varieties, increased production resulting distress sale after harvest, lack of market information regarding prevailing prices, arrivals etc., unavailability of grading of maize at producers' level, inadequate storage facilities in villages which contributes to distress sale, inadequate facilities of transportation at village level leading to forced selling in the village itself to merchants or traders directly at low prices, inadequate training in marketing system, malpractices prevailing in the markets of maize i.e., excess weight, delay in payment, different kinds of arbitrary deductions for religious and charitable purposes etc. lack of market finance are few of the major marketing problems faced by the maize growers.

Information dissemination is crucial to the farmers to make informed decisions about what to grow, when to harvest, to which market produce should be sent. It helps to estimate the demand for the product and in decision making on storing the product in warehouses till demand arises. Most of the farmers do not have accessibility to roads to reach the regulated markets, as infrastructural development in villages of India is still a continuous process in many states.

Regulated markets and warehouse facilities are generally at city levels and moving the produced to markets itself is big problem with either bad roads or no roads.

Products used in the management of risk in maize marketing

Derivative products have the ability to shift the price risk from producers. Maize futures are standardized, exchange-traded contracts in which the contract buyer, generally the speculator or intermediary or a consumer agrees to take delivery from the seller, generally the producer, a specific quantity of maize at a predetermined price on a future delivery date. Maize producers can employ a short hedge to lock in a selling price for the maize they produce, while businesses that require maize can utilize a long hedge to secure a purchase price for the commodity they need. Consumers and producers of maize can manage maize price risk by purchasing and selling maize futures. The prices at which futures contracts are determined are by free competition amongst market participants.

Benefits of hedging products

Though Farmers/growers do not participate directly in commodity markets, they benefit through the price signals emitted by the futures markets and information dissemination done by different stakeholders through different methods. The primary benefit of the commodity derivatives is price discovery mechanism through futures market. The futures markets information reduces seasonal price variation and helps the farmer realize a better price at the time of harvest. Futures information helps the farmer to plan in advance what to cultivate, where to store, when to sell to gain maximum returns and so on. Demand in national exchanges and international exchanges through futures prices enable the farmers to take right and informed decisions on storage options of the maize. Information makes them to understand the trends in prices and demand make them to retain the product and realize better prices and returns. Regular dissemination of price information by Forward Markets Commission with the help of national commodity exchanges has made the farmers to track the markets and demand and is making better usage of information in negotiating the prices. Price dissemination happening in all states through display boards on regular basis in all major villages provides a good reference to assess spot prices and bringing farmers and traders at a platform with correct price negotiations and it also created awareness on mechanism of locking-in the desired prices. In absence of futures market, farmers try to manage their risk by collecting the information from local mandis and accordingly planning their process.

Forward trading provides protection against the price fluctuations of agricultural produce. Producers, traders and processors utilize the future contracts to transfer the price risk. In Forward contracts, specific delivery contracts are merchandising contracts that enable producers and consumers of commodities to negotiate directly depending on availability and requirement of produce. During negotiation, terms of quality, quantity, price, period of delivery, place of deliver, payment terms etc. are incorporated in the contracts. Future contracts are forward contracts other than specific delivery contracts where the quality and quantity of commodity, the time of maturity of contract, place of delivery etc. are standardized and will be given by exchanges.

Supportive measures taken by Indian Government & NCDEX in favour of maize producers

Considerable changes are happening in the favour of the growers as the Government of India (GoI) with its food security program is encouraging the farmers to improve the productivity of staple food crops. All India Coordinated Research Project (AICRP) on maize was launched in 1957 with the objective to develop and disseminate genetically superior cultivars and production/protection technologies. GoI with the help of NABARD has initiated many favourable programs to motivate the maize and other cereal growers. Government of India is taking measures to bailout the farmers from the risk faced by them through different policies to produce better qualities and quantities and market the produced. GoI has fixed minimum support price (MSP) for maize along with rice, wheat, and government is procuring maize from farmers through its agencies. Considering the importance of rural storage in marketing of agricultural produce, the Directorate of Marketing and Inspection initiated a Rural Godowns Scheme, in collaboration with NABARD and NCDC to construct scientific storage godowns with allied facilities in rural areas and to establish a network of rural godowns in the States and Union Territories. The APMCs constructed storage godowns in the market yards wherein receipt is issued to growers on storage of produced. The receipt is treated as negotiable instrument and is eligible for pledge finance. Co-operative societies also constructed godowns in the market yards to provide to the farmer at cheaper rates, which reduces the storage cost and provide pledge loans against the produce. National Cooperative Development Corporation (NCDC) encourages construction of storage facilities by cooperative, particularly at rural and market level. GoI has launched agricultural marketing information network Scheme through Directorate of Marketing

and inspection (DMI) to bring out improvement in present market information scenario by linking all agricultural produce wholesale markets in the States and Union Territories. The data received from markets is being displayed on the website www.agmarknet.nic.in.

Procedural constraints like minimum net worth to participate, quality specifications, different types of varieties as underlying assets, margin amounts, quantities to be delivered, KYC norms are restricting farmers to enter into commodity derivatives market. To attract participation of farmers and processors, the agri-centric exchange NCDEX has introduced a new category 'Commodity Participant Members (CPM)' with one-time admission fee of Rs. 50,000 and an annual membership fee of Rs. 10,000 which covers net worth hurdle. Normally in a futures market, the quality and quantity is determined by the exchange and approved by the regulator but in the new segment, the quality of traded commodities will be determined by buyers and sellers mutually. Quality will be no longer a restriction for trading in forward contracts. The exchange has also started enrolling independent members specifically for the forward contract segment in maize and sugar. NCDEX has approved warehouses at major crop producing areas and provided for an alternative delivery platform. Buyers and sellers also have the option of meeting at a place convenient for both. The warehouses of Primary Agriculture Cooperative Societies (PACS) are linked with the National Commodities Exchange (NCDEX) spot exchange which would help the farmers to sell their goods on exchange platform. The National Bank for Agriculture and Rural Development (NABARD) joined hands with the Cooperative Central Banks (CCBs) to ensure speedy payment of money to farmers, through the CCBs with core banking solutions, once the sale is completed. The e-trading will help the farming community to get access to major markets and get good price. Taking cue from a pilot project under implementation in Gulbarga in Karnataka, the Marketing Department has decided to take up mandi modernization in Karnataka and Nizamabad, Warangal markets in Telangana. NCDEX is trying to link all the agriculture produce market committees for trading commodities, non-perishables in particular, by enabling farmers to virtually participate in auction of the commodities at the national level to ensure that the farmer is not dependent on a particular market or a set of traders to sell his produce at the prices dictated by the latter, but can command the prevailing price which will be displayed at the yard. Spot prices are polled in various principal market places (mandis) two to three times a day to arrive at a benchmark price by 'bootstrapping' process. The participants who trade on the exchange can use these near real time spot prices to take decisions on the futures segment.

NCDEX has over 225 electronic price tickers carrying real time prices in 14 local recognized in India. NCDEX prices are also disseminated through government channels like Doordarshan and All India Radio, which have the largest reach in the country. Agmarknet, the official website of the Government of India, carries NCDEX prices. The Exchange has also tied up with a couple of telecom providers to make commodity prices available on call and a number of mobile service providers to make commodity prices available through SMS. Tie-ups with corporates like ITC e-choupal and n-logue for the same purpose has also yielded good results. Newswires like Reuters, Telerate's, Telequotes and Bloomberg are also disseminating NCDEX prices. Prices are carried by almost all agri-journals and also by newspapers all over India in regional languages. The exchange is looking forward for associations with many other institutes & centres with similar interests to carry our Price tickers and spread awareness amongst farmers. Efforts are also on for price dissemination by placing tickers in various Agricultural Produce Marketing Committee (APMC) boards at mandis, post offices, bank branches, warehouses, FMCG dealer points. NCDEX has made provision for warehouse receipt based financing with help of over 130 accredited warehouses all over the country. NCDEX has appointed recognized assayers in all its warehouses to scientifically test the quality of the goods brought by farmers to its warehouses. National Collateral Management Services Ltd. (NCMSL) promoted by NCDEX takes care of accreditation of warehouses, assaying and tying up with banks to accept their warehouse receipt. A farmer can then get soft loans from banks against warehouse receipts in the interim period. Currently, the banks have given loans worth Rs. 9,000 crores against commodities. NCDEX has realised the need for a neutral aggregator to hedge forward the price risk of small and marginal farmers, who find it difficult to directly trade with the exchange due to issues like membership and quantities handled by them. Hence, NCDEX is in talk with banks, commodity boards, co-operatives and agri-extension service providers to play the role of aggregators, who can collect all the produce and trade on the exchange on behalf of the farmers in every village.

Conclusion: India being one of the largest producers of maize with number of varieties and occupying a good market share in maize exports is not providing good returns to maize producers in all maize growing states. Karnataka & Telanganafarmers cultivating maize under a major portion of cultivation land are subjected to different risks associated with production and marketing of the maize produced. Though very recently Karnataka farmers have seen good returns, they have suffered a long time with different risks right from selection of seed to selling

the harvest to traders. Problems like formal credit facility, Above all, when the crop is yielded, quantity and quality issues bother the farmers much. Due to unavailability of formal markets at reachable places to sell the maize crop, transportation and expenditure burdens to shift to markets, insufficient storage facilities, warehouses at distant places are making the farmers to face the risk of selling the produced at good prices. Interest on unorganized loans, compelled agreements with agents and local merchants are forcing them to deliver the produced at cheaper prices which is realizing them half of the returns what they are to realize in proper markets.

Indian government has paved way to commodity derivatives in agricultural products in order to help the farmers to hedge their risks through trading in futures. Under the Forwards Markets Commission with the help of National Commodity Exchanges, it is disseminating the demand and price information through display boards in villages and mandis. The information on the boards, futures prices signal the farmers to choose the crop, time to cultivate, when and where to store, and price at which they need to sell in the spot market or in the futures market. Derivatives help the maize farmers to reach the international demand information along with the international prices which are reference values to pre decide on producing and marketing. Government of India along with allowing commodity trading in maize in exchanges, is supporting farmers to cultivate the maize through advanced technology and scientific methods of cultivation and focusing on research and development in area of maize to give good quality seeds which yield higher quantities. It is providing minimum support price to maize produced in order to bailout the farmers who are at mercy of agents and intermediaries whenever there is demand shortage due to international impact on maize exports. Short comings in the form of procedural constraints like demat account, PAN card, KYC norms which are distant facilities to farmers, minimum lot sizes of maize, initial margins to the extent of 4% on contract value, huge MTM margins, only two maize delivery centres in south India, few authorized warehouses, quality constraints, standardized norms in contracts, less support from the exchange brokers, and different maturity dates on futures contracts are taken care by dynamic policies of GOI & NCDEX to motivate the maize growers. NCDEX has improved the welfare of the farming community at large. Through price and information dissemination, better warehousing, pledge loans, e-trading, e-tendering and grading facilities, farmers have been able to realize higher incomes. NCEDEX has paved way for farmer direct participation on the exchange by limiting membership fee, size of the produce etc. The smaller and marginal farmers are benefiting through better price knowledge.

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