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RESULTS & DISCUSSION
FINDINGS
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MAIZE CULTIVATION IN KARNATAKA & GROWERS' AWARENESS ON PRICE RISK MANAGEMENT TOOLS.

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ABSTRACT

*"Is Maize a potential crop **for/to** farmers of Karnataka?" Maize a versatile crop having wider adaptability under different agro-climatic conditions is globally known as queen of cereals with its usage. Maize with its highest yield potential is one of the principal cereal crops in India, contributes to the economic growth with substantial employment and significant contributions to export earnings. In India, Maize is the third most important food crop with nearly 9% stake in the national food basket. In addition to being staple food for humans and quality feed for animals, maize serves as a basic ingredient to thousands of industrial products. Maize is cultivated throughout the year in all the states of India & predominantly in Andhra Pradesh (20.9%), Karnataka (16.5%), Rajasthan (9.9%), Maharashtra (9.1%), and Bihar (8.9%) contributing to more than 80% of the national maize production. In southern states of India, farmers are substituting maize for rice wherever there is a drop in the water level, as maize is considered as a viable option for diversifying agricultural production owing to its adaptability in multiple seasons under different ecologies. Karnataka stands in first position in Maize productivity and is cultivated in all the seasons in most of the districts. Though Karnataka is considered to be one among top five growing states in agricultural sector, it is characterized by lack of reliable and timely information with a dearth of analysis on various vital aspects related to crop marketing, prices, trends at major national and international markets, demand and supply pattern, scientific forecasting, crop and weather information. Despite the initiatives from different segments including government of Karnataka, unfavorable deviation in market prices of maize are leading to reduced income to farmers and traders. It is known from studies that risks faced by Maize growers are forcing them to re-think on alternative commercial crops in the absence of awareness on effective risk management measures and tools like derivative instruments. This research paper is an attempt to study the marketing patterns of maize, awareness of price risk mitigating tools among maize growers in Karnataka state. Research work done through structured questionnaire served in vernacular language to maize growers in 3 selected high maize yielding districts of Karnataka state, tries to answer the questions like what are the constraints in maize marketing?, Are there tools available to mitigate the risks? What are the initiatives of the Government of Karnataka to increase the maize growers' financial returns? and so on.*

KEYWORDS

Maize derivatives, NCDEX, pledge loans, warehouse receipts.

INTRODUCTION

Maize, the queen of cereals with its wider adaptability to varied agro-climatic conditions, its efficient utilization of radiant energy and fixation of CO_2 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 addressing some of the food security issues of the developing nations. Maize is cultivated among 160 countries having wider diversity of soil fertility covering nearly 178.61 Mha of cultivatable land with 1007.47 million mt of production during 2014-15. It covers nearly 36% of the global grain production and gained popularity across the globe due to its considerable utility in many sectors in different forms, majorly as feed source for animals. It serves as a basic ingredient to thousands of industrial products that include starch, oil, protein, alcoholic beverages, food sweeteners, pharmaceutical, cosmetic, film, textile, gum, package and paper industries etc. 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. These range 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, snacks, popcorn and cooking oils have also become popular. Internationally, maize has been processed to produce bio-ethanol in a big way for blending with auto fuels.

Low cost of cultivation, easy adaptability to various climatic conditions, increasing productivity, more cultivars, minor fluctuation in prices compared to other cereals and finally high potential for export demand from all over the world are catching the attention of agriculture sector in India. The United States of America (USA) produces 35% of world's maize. It occupies the first position in Maize production followed by China and Brazil. India stands at fifth position with annual production of around 23.67 million tonnes from 9.3 million hectares contributing 2.35% of world production in 2014-15. India has a competitive advantage in supplying produce to the world markets since it has a dual crop season. Maize's Kharif production share is about 75% and Rabi's share is about 25% in India. Around 52% of the total demand is from poultry feed in India and the remaining 48% is from human consumption and the processing sector. India requires 325 million tons of food grain by 2020 AD to satisfy needs of its population, which demands consistent increase in production and productivity of agricultural crops. Agriculture sector growth from 2.9 percent to 3.6 percent per year during 2005 to 2015 is insufficient and need to depend on increasing maize cultivation among all the states. During the last three decades, Maize production in India has remarkably increased, driven by the demand from the animal feed industry. Maize is grown in traditional areas under rainfed condition to meet household requirements and in non-traditional areas with more favorable production environment for commercial purpose. Maize is cultivated throughout the year in India owing to production in both kharif and rabi seasons. Maize is cultivated in almost 524 districts out of total 686 districts of India covering all the states predominantly in Andhra Pradesh, Karnataka, Rajasthan, Maharashtra & Bihar. It has witnessed 56 per cent growth in 10 years 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 of Rs 1,310 per quintal in 2013-14 and 2014-15. The crop has been included in the government's ambitious Rs. 500 crores crop diversification strategy announced for North Indian states of Punjab, Haryana and western Uttar Pradesh. In Southern states of India, farmers are substituting maize for rice wherever there is a drop in the water level as Maize is considered as a viable option owing to its adaptability in different ecologies. Estimated demand of over 30 million tonnes of Maize from poultry sector by 2020, changing food consumption patterns due to urbanization, increase in consumption of processed food that uses maize, India being 3rd largest egg producer and 5th largest poultry meat producer which mainly depends **on** maize usage as feed, rising demand for poultry and fish which uses corn as feed are creating heavy demand for Maize cultivation. Return on Maize to the farmers depends on domestic and international demand and supply factors like Government interventions through the minimum support prices, demand from local millers, global inventory level and current production

numbers. Quality specifications like the moisture content, the grains quantity in100 grams, problems from fungus, dunkey, powder thyrum are some of other factors influencing the return to farmers. Generally, the price hint in the market is taken from NCDEX futures prices and from spot markets like Nizamabad (Telangana), Davanagere (Karnataka), and Gulabbagh (Bihar).

Karnataka the prominent player of Maize cultivation produced 3.84 million tonnes of Maize from 1.37 million hectares in the year 2014-15. Karnataka, an agricultural dependent state, is characterized by wide crop diversification, reliant on southwest monsoon. In Karnataka, Maize Scenario is with 40% area under irrigation and 60% area is of rainfed. There is an increasing trend in the area, production and productivity of Maize in Karnataka state over the years with Compound Annual Growth Rate (CAGR) of 8.5 per cent in last three decades. During the last ten years, the area under Maize in Karnataka has increased by 41 per cent. Uttarkannada, Shimoga, Raichur, Hassan and Chikmaglur districts have considerable production of Maize crop 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. Major markets of Maize in Karnataka are Davanagere, Haveri, Belgaum and Bagalkot. The sowing period of Maize in Karnataka starts from end of May and harvesting starts in the middle of October.

AGRICULTURAL MARKETING IN INDIA

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 weighment, 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 PRICE RISK

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 intermediary or a consumer agrees to take delivery from the seller, 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. The prices of futures contracts are determined by free competition amongst market participants.

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. Using one way ___ Least Squares Dummy Variable (LSDV) for twenty-seven districts over twelve years, present 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 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. The average investor does not want to store grains, cattle, crude oil, or metals. A common investment objective is to purchase indirectly those real assets that should provide a good hedge against inflation risk.
3. In the 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 marketing of all farm **products generally tends** 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. Authors felt the need of creating awareness among the farmers through the agricultural extension agencies like the State Department of Agriculture, KrishiVigyanKendras.
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.
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. The study revealed that higher sustainability in all practices is significant.
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 were 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. The information provided by these methods is stale and does not help the farmers sufficiently in taking decisions in marketing their produce.
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. The post-harvest loss at farm level was estimated to be 3.02 kg per quintal. The share of harvesting loss was at maximum. There is a need for an integrated effort to increase the productivity by evolving high yielding varieties **of** 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, lack of training in marketing system, malpractices prevailing in the markets of maize like excess weighment, delay in payment, auction, growers' aggressive production practices often lead to change in crop returns and profitability. In spite of measures taken by Government of Karnataka at state level and GOI at national level, returns are less to Maize farming community. This study tries to explore awareness of options available for Maize growers to cash their labour and production in Maize.

OBJECTIVES OF THE STUDY

1. To know about Maize and its growth in India in general, and Karnataka state in specific.
2. To understand the Agri marketing system prevailed in the Karnataka with reference to maize.
3. To understand the awareness of risk tools and provisions available for Maize growers

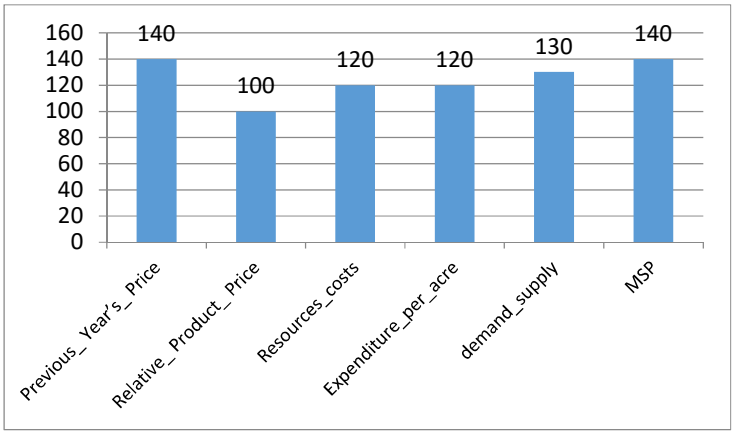
RESEARCH METHODOLOGY

Research methodology adopted in this paper is partly based on conceptual study & partly based on descriptive study. Study deals with the problems faced by Maize growers of Karnataka in marketing the produced, the initiatives of Government of Karnataka relevant to maize and maize growers. The objective of the paper is to know about the awareness of farmers on price risk management tools. Paper parallelly focuses on creating awareness among the readers about potentiality of maize production, the risk management tools and provisions available to hedge the risks faced by farmers. Data was collected from both the primary sources through structured questionnaires and secondary sources of websites, journals and other publishing. 150 Maize farmers from districts of Davanagere, Chitradurga & Bellary districts were served the questionnaires in order to collect the data about the various marketing related aspects of maize. Farmers are selected on random basis with convenient sampling covering almost all the parts of 3 districts.

ANALYSIS AND FINDINGS

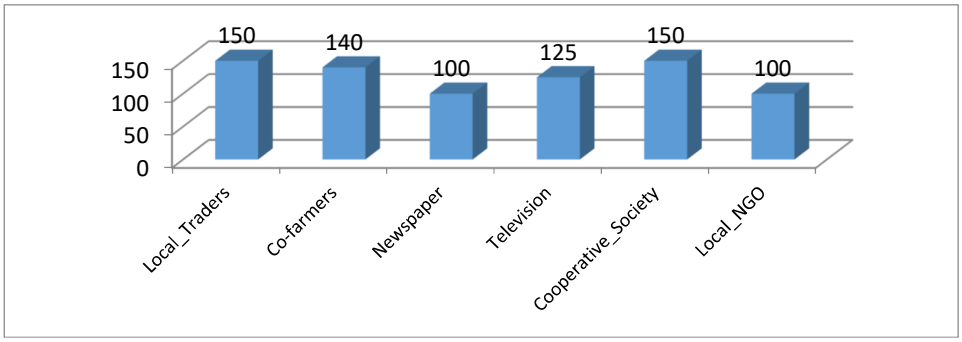
Though farmers/growers do not participate directly in commodity markets, they benefit through the price signals emitted by the futures markets and information dissemination done by different stakeholders through different methods. The primary benefit of the commodity derivatives is price discovery mechanism through futures market. Demand in national exchanges and international exchanges through futures prices enable the farmers to take right and informed decisions on storage options of maize. Information makes them to understand the trends in prices and demand makes 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 connection to the study, the questionnaire carries questions on primary risks faced by maize farmers, maize pricing factors, maize selling centres, awareness on MSPs provided by Government of Karnataka, information on price dissemination project of central government, awareness on price risk management tools like commodity futures, mechanism of futures for fixing the prices and so on.
Analysis of data collected through questionnaire served to 150 farmers led to the following information:
1. Among maize pricing factors, previous year price, relative product price, resources cost, expenditure per acre, labour cost, climate, demand and supply, MSP have occupied almost equal percentage in the opinion of farmers. MSP and previous year price as leading factors.

FIG. 1



2. Related to price information sources to farmers, respondents came out with choosing local traders, co-operative societies, and APMCs as major information sources with equal weightage. Other sources such as co-farmers, newspaper, radio, television, agricultural extension staff, kirana stores and agri-magazines have good share in communicating the market value of maize to farmers.

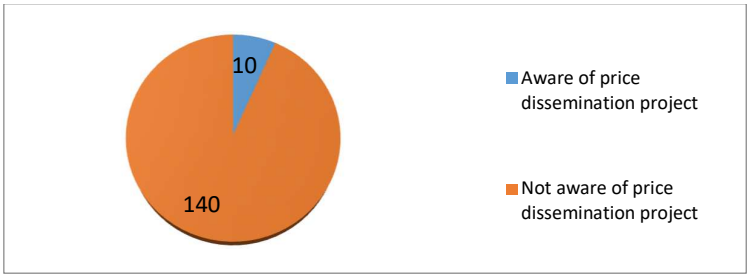
FIG. 2



3. When asked about the awareness of price dependency on grading and moisture content of 14% limit, 100% farmers accepted on it and also quoted other factors like limit of grains number in 100 grams and so on.

4. Nearly 140 out of 150 farmers said that they are not aware of the information dissemination project taken by the Government of India and the methods followed by them in disseminating the prices of the commodities, training provided by the NCDEX as a partner to the government, APMC role and other things.

FIG. 3



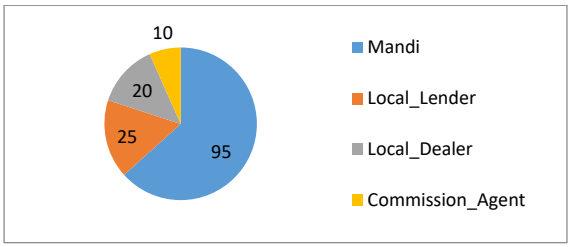
5. Few of the respondents are aware of price information dissemination through APMC ticker boards method, but all have given their negative opinion on display as ticker boards are presently not there in Davanagere, Chitradurga and Bellary market yards. But farmers are able to get the price information from staff of APMCs. When farmers are attached with APMC market yards **by** registering their mobile number in APMC office, and cooperative societies, farmers are able to get prices in vernacular message in the form of messages to their registered mobiles.

TABLE 1

Prices displayed on APMC ticker boards		Prices displayed in native language	
Yes	No	Yes	No
0	150	0	150

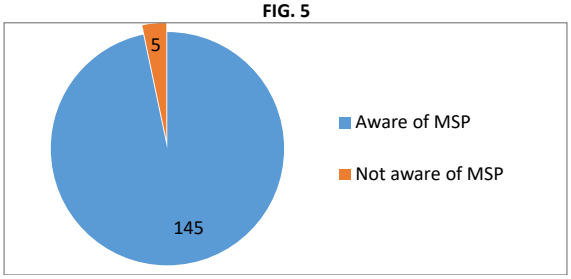
6. When tried to collect the information about where the crop is sold, majority(2/3rd) of farmers told that they bring their crop to the yards and sell as now transparency is there in buying and selling though brokerage charges are there. Nearly 55 farmers are selling to the local lenders and commission agents with whom farmers are in oral contract to deliver, and from whom loans and seeds are taken. Though procurement centres are there from government end, quality specifications of FCI and other matters related to payment are leading farmers to not to sell.

FIG. 4



7. Awareness on minimum support prices announced by the Government of Karnataka is not impacting farmers' returns, though the awareness is there in almost all farmers. The price what farmers get majorly depends on quality aspects and decision of traders supported by demand factors, the MSP is not much sought aspect by farmers. Except 2 to 3 times, almost in all the years, farmers are able to realize the above MSP prices.

FIG. 5

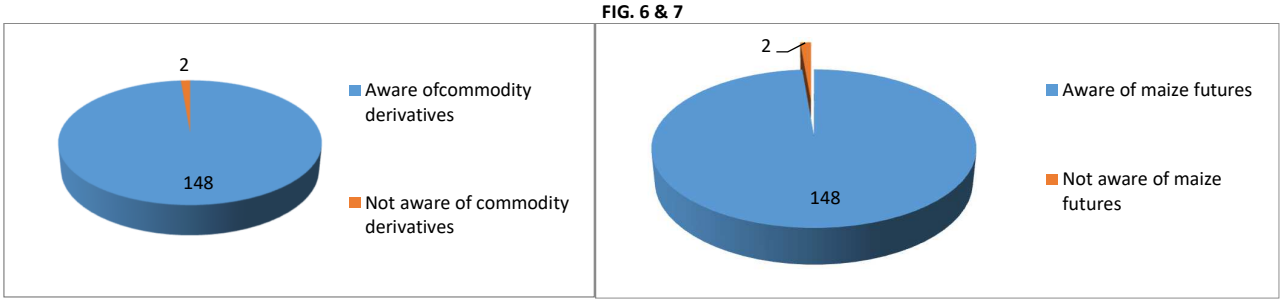


8. Concerned to the price risk farmers are facing, they are not in a position to safeguard themselves from the price fluctuations due to prevailing demand and supply factors. Selling of crop is happening under distress and urgent need of cash or reaching the target price. No farmer is aware of price fixation that can happen much before the harvesting of the crop.

9. When asked about the collective storage facility provided by APMC yards, farmers said they are aware of them but not utilizing them. They keep the material under the custody of their yard registered brokers and sell based on the price in the market. Most of them dispose when crop is brought to yards with prevailing prices and very few take them back as farmers fear of charges of storage and non-availability of sufficient godowns and they do not use the collective storage facility.

10. When asked about the awareness of price management tools like commodity futures (maize farmers), except 2 from Davanagere district who are considered to be wealthy farmers, remaining all said they are not aware of the futures and commodity markets. The farmers who are aware also named them as government contracts and not aware of commodity markets as such.

FIG. 6 & 7



Concern**ed** to other price risk management tools and facilities, farmers are almost with zero information at their end.

FINDINGS

From the data collected through secondary sources, it is evident that there is an increasing trend in the area, production and productivity of maize in Karnataka and has consistent demand for maize from Karnataka Milk Federation (KMF), poultry industry and many other industrial sectors. As a part of support to farmers, Government of Karnataka has taken many initiatives in all stages right from soil checking to marketing of the final produce. Providing minimum support prices to crops, integrating markets & market participants, procuring the crop from farmers are among the support measures taken by the government.

Few major initiatives that support maize farmers along with other growers are:

- '**Bhoochetana**', project was initiated in the year 2009-10, to increase the average productivity of rainfed crops by 20%.
- '**BhooSamruddhi**' was a project initiated to rejuvenate soil fertility and water management. It is now in its third phase, which helped the farmers to gain huge returns as crop selection was based on the soil suitability and fertility. 'Bhoochetana' & 'BhooSamruddhi' adoption has reaped huge returns and has caught the other states attention.
- '**Krishi Bhagya'** is a project for saving rain water. It is a method wherein seepage proof water harvesting structures and micro-irrigation is promoted on package basis. 80% of investment on the implementation is borne by government and farmer has to take care of remaining 20% only.
- '**Krishi Mela'** one more prominent initiative from Government of Karnataka is meant for disseminating information on the scope of post harvest technology, seed processing, soil and water conservation practices, organic farming, green house technology and farm machinery. Melas also disseminate the information about availability of technical, financial and other supports offered under various Government schemes. They train the farming community on judicious usage of natural resources like water and soil.
- As a part of agri-marketing initiatives and reforms, Government of Karnataka has established a joint venture company '**Rashtriya e-Market Services Limited (ReMS)**', partnering with NCDEX Spot Exchange Limited. The ReMS integrates the operations of APMCs in Karnataka under one system with complete technology and management solution. This system helps all the yards to modernize the infrastructure which enables the market participants to take the benefit of transparent and efficient price information across all the areas including international arenas. This Unified Market Platform under ReMS has connected 51 major market yards by January 2015 and is expected to cover 155 main market yards, 354 sub-yards and will be extended to cover authorized warehouses associated with the APMC markets.
- Minimum Support Price **(MSP)** is provided to almost all major crops including Maize The support price to maize has grown almost 250% over a decade span from 2005 to 2015. The following table gives the supporting prices offered to maize farmers:

TABLE 2

Year	MSP	Year	MSP
2004-05	Rs. 525	2010-11	Rs. 880
2005-06	Rs. 525	2011-12	Rs. 980
2006-07	Rs. 540	2012-13	Rs. 1175
2007-08	Rs. 620	2013-14	Rs. 1310
2008-09	Rs. 840	2014-15	Rs. 1310
2009-10	Rs. 840		

- Procurement of maize from farmers was done by Karnataka Food and Civil Supplies Corporation Limited and Karnataka State Cooperative Marketing Federation Ltd. with the help of FCI. Despite the acute shortage space to store the procured maize, expenditure incurring from transportation and handling, heavy losses in disposal, Government of Karnataka has procured maize from farmers at minimum support prices of Rs.1310/- in 2013-14 and at 1100/- in 2014-15.
- To encourage maize cropping, seeds are provided to farmers at a subsidy of about 50%.
- Promoting Contract Farming.
- Promoting collective storage methods by providing free storage facilities in APMC warehouses and meager charges of Rs 5.25/Q/month in state warehouses.

Above all, Government of Karnataka is focusing on infrastructure development, online payments to clear the procurement bills, increasing storage facilities through construction of godowns and cold storages. Online sales and tender system in procurement centres and mandis is taking place to avoid middle men in between buyers and consumers.

CONCLUSION

India is one of the largest producers of maize with number of varieties cultivated in almost all states of India in both Kharif and Rabi seasons. Owing to cultivation in different states in different seasons, demand from the industry is met easily throughout the year. The growing demand from different sectors, government policies in supporting maize production to meet the food grain shortage and international demand generated through usage of maize in bio-fuels are helping farmers to sell their produced without any hurdles. Procurement with MSPs and other initiatives from Karnataka Government are keeping the farmers in the safer zone of good returns. Despite all the favaourable situations, farmers who are cultivating maize are subjected to different risks associated with production and marketing of maize. Though very recently Karnataka maize farmers have seen good returns in 2013-14 & 2014-15, they have suffered a long time with different risks in the form of selecting seed to selling the harvest to traders. Problems related to quantity and quality issues bother the farmers much at the time of selling the harvest. Due to unavailability of formal markets at reachable places to sell crop, expenditure in transporting to nearest yards, insufficient storage facilities, warehouses at distant places are some of the marketing risks faced by maize growers. Interest on unorganized loans, compelled agreements with agents and local

merchants/lenders are forcing growers to deliver the produced at cheaper prices which realizes half of the returns **of/to** what they are **supposed** to in **this/these** globalised competitive markets.

Indian government has paved way to commodity derivatives trading in agricultural products in order to help the farmers to hedge their risks. Under the earlier Forwards Markets Commission and National Commodity Exchanges, Indian Government is disseminating demand and price information through display boards in villages and APMC mandis. The information on the boards & derivative futures prices signal the farmer to choose the crop to cultivate, when and where to store, price at which farmer can dispose, and market (spot/futures) where he can sell. Derivatives help maize farmers to reach the international demand and price information which are reference values to pre-decide on producing and marketing the crop. Both GOI and Government of Karnataka are providing minimum support price to maize in order to bailout the farmers who are at mercy of agents and intermediaries whenever there is low demand. Through price and information dissemination, better warehousing, pledge loans, e-trading, e-tendering and grading facilities, farmers have been able to realize higher incomes. The efforts of Government of India and Government of Karnataka in supporting the farmers through infrastructural development and technology development, bringing transparency in the system of trading are partially successful as the information dissemination is not happening as per the expectations of the governments.

Through the data collected, I can conclude that the aim of central government to reach all the farmers in specific and other stake holders of commodity derivative markets in general through information dissemination methods has not taken place. Still most of the farming community is not aware of any information sources on prices and price risk mitigating tools. Almost all the respondents (nearly 100%) of the study do not know about the derivative markets and derivative instruments like maize futures. Unless information dissemination is at good phase and farmers trained on usage of derivative instruments to curb the risk, neither farmers will have efficient returns nor Governments' initiatives will be at positive end.

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