FACTORS AFFECTING FARMER'S PARTICIPATION IN PRICE RISK MANAGEMENT

- A STUDY OF TELANGANA STATE COTTON FARMERS

A Thesis Submitted to the University of Hyderabad in Partial Fulfillment for the Award of the Degree of

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By

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DECLARATION

I, CHANAGALA SHANKAR, hereby declare that the thesis entitled, **"FACTORS AFFECTING FARMER'S PARTICIPATION IN PRICE RISK MANAGEMENT"– A STUDY ON TELANGANA STATE COTTON FARMERS**, submitted by me under the guidance and research supervision of Dr**. K. Ramulu** is an original and independent research work. I also declare that, it has not been submitted previously in part or in full to this University or any other University or Institution for the award of any degree or diploma.

Place: CHANAGALA SHANKAR

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CERTIFICATE

This is to certify that this thesis entitled, **"FACTORS AFFECTING FARMER'S PARTICIPATION IN PRICE RISK MANAGEMENT" – A STUDY ON TELANGANA STATE COTTON FARMERS"**, submitted by CHANAGALA SHANKAR, Research Scholar enrolled for Ph.D. program at the School of Management Studies, University of Hyderabad, is a bonafide work done under my guidance and supervision as prescribed under Ph.D. ordinances of the University.

The thesis has not been submitted previously in part or in full to this or any other University or Institution for the award of any degree or diploma.

Research Supervisor

(Dr. K. Ramulu)

DEAN

School of Management Studies

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Ch. Shankar

BRIEF CONTENT

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ABBREVIATIONS

1. ILO……International Labour Organization
2. FAO……...Food and Agriculture Organization
3. GDP……Gross Domestic Product
4. CIA……Central Intelligence Agency
5. CSO……Central Statistical Organization
6. GOI……...Government of India
7. MSP……....Minimum Support Price
8. WHO……..World Health Organization
9. DEB…….. Democratic Republic of Ethiopia
10. EFA……...Exploratory Factor Analysis
11. MPCI……..….Multi Peril Crop Insurance
12. RMA ……...…Risk Management Agency
13. NAIS……...National Agriculture Insurance Scheme
14. ISO……...International Organization for Standardization
15. TRA……Theory Reasoned Action
16. TPR…….Theory of Planned Behaviour
17. RA……Risk Attitude
18. FO……Farming Objective
19. PRE……Perceived Risk Exposure
20. MO……..Market Orientation
21. LOU…….Level of Understanding
22. EF……...Entrepreneur Freedom
23. DIT……..Diffusion of Innovation Theory
24. SPSS…….……Software Package for Statistical analysis
25. KMO…….Kaiser-Mayer-Olkin
26. PCA……..…Principle Component Analysis

ABSTRACT

Agriculture may be a methodology of cultivation of plants for food, meditative merchandise and fiber to stay up and enhance the human life. Agriculture has a significant growth and developments since the earliest cultivation of plants developed around 12000 years ago. The history of most of the countries revealed that the wider economic development was followed by the growth of agriculture.

Agriculture in India has a significant history and is the backbone of Indian economy since independence and it will continue for long time. According to CIA Fact book 2008 statistics India ranks second world largest farm output country. However the agriculture sector often faces many challenges. Many countries are evidenced for weaker infrastructure facilities. Importantly it is higher in the rural areas.

The risk and uncertainty in financial gain variations plays an imperative role in farmer's suicides. The foremost of the developing countries like India weren't properly introduced the organized risk management tools and techniques to cut back the financial gain variations.

The economic issue is un-avoidable component within the context of farmer deciding behavior. The farmer's angle principally depends on problems like family monetary pressures, size of land, the tutorial levels of farmers, awareness levels and therefore the risk angle. the target of the farmers depends on whether or not farmer follows the tradition of the family, farmer a lot of interested on doing agriculture work instead of option work, if the farmers wish to try and do farming as a result of to earn the affordable financial gain to their family these reasonably farmers typically not interested to implement the new innovative measures.

In the present global scenario the concept of risk has became a focal point for those who are thinking and acting in markets. Risk is a combination of probabilities and its consequences; risk undertakes the consequential events like the opportunities of benefits (positive side) or the opportunities of threats (negative side).

The objective of the study is to analyze the factors that influence the farmer's risk behavior in decision making to adopt the price risk management tool to hedge their price risk. The study sample 409 has been collected for analyzing the Objective. The respondents of the study are the cotton sowing farmers in Telangana state selected districts.

The study finds the the farm experience helps to farmers to take effective farm related decisions. Whereas this farm experience is not helping to take price risk related decisions. The Infrastructural facilities like market availability, transport facilities and storage capacity shows a positive impact on price risk related decision making. Education is the major obstacle for price risk participation.

The study suggest that the Indian Government should concentrate on to improve the financial sustainability of agriculture, rural finance and commodity trade through commercial actors it will helps to improve the price risk participation. Increase the awareness programs related to the price risk management tools and techniques. Government should take an initiation to improve proper storage facilities and conditions to store farmer's crop. Government should allow subsidies on charges for farmers those who are utilizing the risk management practices.

- The lack and access to get formal credit facilities generally restricts the investment processing, storage and market avenues. In rural area the informal credit providers charging an interest in between 36% to 70% per annum.
- Lack of proper storage facilities farmers selling their crops early in the markets or to a middle man.
- The farmers selling output early without waiting for proper rate because for early cash requirements, repay the loans and credits, to manage household expenses and for the social obligations.
- A very few of the farmers realized with the previous bad experiences faced by them. This experience motivating to hedge their risk, importantly those farmers who can't afford the risk situation.
- A very few farmer's taking the risk condition as a challenge and some farmers try to manage these risks by implementing the new ideas like timing strategies and sales spreading etc.
- The continuation of tradition in farming and the farmers those who are farming for an objective of keeping the land in a better condition are not interested to implement the new and innovative ideas in their farm. The traditional way of farming causing for low productivity, high cost of production and low income.
- There are some farmers trying to make farming to get a reasonable income. These famers risk participation behavior is not accepting change in their field. Farmers those who are doing farming for leaving the land in a better condition rather than making profits from the farming also not accepting changes in their field of farm.

- The low understanding level about the market, supply chain, Minimum Support Price (MSP) fixed by the Government and impact of EXIM policy on commodity pricing directly influencing the price risk behavior.
- Most of the farmer's in a bullish ideology. Their Exposure is always to look up of the commodity price. This bullish ideology creating a situation like the price of the commodity in the markets is not at all risky.
- The economic freedom of farmers like the taxes, participation charges, transportation charges directly influence the farmer's decision behavior. In the commodity markets the minimum lot size of a contract value is nearly, 2,00,000 the marginal and small farmers are not affordable this much value of lot sizes. The premium of crop insurance schemes also high in the percept of the marginal and small farmers.
- The regulations related to the NAIS crop insurance is suitable to some of the crop related issues, many issues where farmers getting losses are not covered by the NAIS.
- The Risk Attitude, Farming Objectivity and Level of Understanding impact are higher than the Risk exposure and Economic freedom.
- The market size in India is vast and it is consistently growing. Agriculturist's business sector linkages have additionally expanded different. Though the advertising framework has not kept pace.
- The Private exchange handles 80% of the advertised overflow, has not put resources into promoting foundation because of the inordinate administrative system and strength of the disorderly segment.

- Increased interest for the worth included administrations and geographic extension of business sectors requests stretching of the promoting channel yet this is hampered by absence of rustic base.
- Direct showcasing by ranchers to buyers stays immaterial. The majority of the little and minor agriculturists go to the business sectors and inside of this 85% need offices for productive exchange.
- For encouraging exchange at the essential business sector level, government has built business sector yards/sub-yards however a large portion of this business sector yards/sub yards are poorly prepared.
- Food preparing industry has a high pay multiplier impact and business potential. Yet, in India in light of the assortment of sustenance related laws the worth expansion to nourishment creation is just 7%.
- Due to poor taking care of (cleaning, sorting, evaluating and bundling) at the homestead entryway or town level, around 7% of grains, 30% of foods grown from the ground and 10% of seed species are lost before achieving the business sector.
- An assessed Rs. 50,000 Crore. is lost every year in the showcasing tie because of ineffectively created advertising framework and over the top controls.
- The State Agricultural Produce Markets Regulation (APMR) enactment hampers contract cultivating activities, which generally can be exceedingly fruitful.
- When the ranchers moving to higher-esteem crops they confront an expanded risk of change in yield, cost and pay.
- The horticultural cost approach and related instruments have prompted ranchers to embrace innovation and in this way increment physical and

monetary access to sustenance; they have lessened private part activity and made a few different issues in the economy.

- In the procedure of change of advertising arrangement of homestead items in agribusiness markets started in the 1950s and 1960. This demonstration circled by the focal government, it ordered by every significant state APMR enactment. This enactment covers more than 98% of the distinguished wholesale markets in the nation.
- Various issues have been highlighted in rural markets such as absence of obviously open procedure of value revelation, need precise and dependable measuring, un institutionalized business sector charges, in the installment of money to agriculturists without undue derivations, need debate settlement instrument, appropriate timing and sequencing of barters, legitimate lessening in physical misfortunes of produce, and non accessibility of a few luxuries in business sector yards.
- In most cases the business sector functionaries have framed a solid affiliation, blockading the passage of new functionaries. These cultivated affiliations significant part of the business sector expense, which by definition is the charge for the administration gave to the business sector functionaries is not furrowed back.
- The government and traders/commission agents resisting the private sector investment in agriculture marketing.
- Lack of creating marketing groups, self help group and cooperative society's farmers are not benefiting the markets minimum guaranteed price scheme.

- The commercial banks generally delay the processing the loan applications of the farmers and the sanction rate around 50% or less this is also caused for low participation in price risk management.
- Lack of awareness programs of crop insurance and commodity markets the schemes are not popularized in farmers.

5.2 Suggestions

- Government should concentrate on to improve the financial sustainability of agriculture, rural finance and commodity trade through commercial actors it will help to improve the price risk participation.
- Increase the awareness programs related to the price risk management tools and techniques. The Forward market Commission (FMC) behavioring awareness programs about commodity markets but it is not sufficient to create the awareness about the commodity markets. FMC should increase these kinds of programs.
- The Agriculture extension officers and NGO's must take an initiation to create awareness about the Crop insurance facilities.
- Government should take an initiation to improve proper storage facilities and conditions to store farmer's crop.
- Government should allow subsidies on charges for farmers those who are utilizing the Warehousing facilities.
- It is not possible to improve the educational years of farmers but proper training and awareness regarding the new technology implementation, techniques to reduce risk will help farmers for a better agricultural system.

- In India the proportionate of Marginal, Small and Semi medium farmers were high these farmers are around 95% in total agricultural census. The policy makers consider these population while preparation of policies.
    - Ex: the Commodity market minimum lot size were nearly 2, 00,000 these amount is not affordable by marginal and small farmers.
    - Ex: the premium amount of Crop insurance also considered as high.
    - If the policy makers considered these farmers the risk participation may be higher.
- Improve the negotiation power of farmers through regular diffusion of price information. The displaying the prices in regular intervals in different villages. It results into a better negotiation power in the spot and local traders.
- The Institutional entities can act as technical support provider to improve price risk management participation. These institutional entities mainly focus in the procedure requirements and technical complexities in price risk participation.
- The market committees should concentrate on several problems these contain a visibly open process of price discovery, more precisely and unfailing weighing, homogeneous market charges, , dispute settlement mechanism, payment of money to agriculturists without undue reasonings, timing and sequencing of auctions, reduction in physical losses of produce, and availability of a few civilities in market yards.
- To develop the marketing system of farm products wholesale agricultural produce markets should be synchronized.
- Monopoly procurement of raw cotton is still in place, which hampers free marketing of raw cotton in the country.

- The market committees eliminate the associations of market functionaries and try to do a fair trade environment.
- The private sector investment in agriculture marketing helps to recover the efficiency in the marketing system.
- Farmers will be advantageous from deregulation of business sectors least ensured value plan, contract farming or crop/income insurance only to the degree they sort out in advertising bunches self improvement group cooperative societies.
- The state government should take the initiation to speed up the loan application process and should take the initiation to increase the loan sanction percentage will help improve the risk participation.
- The state government ought to regulate distribution center receipt to make it an instrument for acquiring credit from institutional offices.
- The NGOs, PRIs and intentional gatherings ought to be effectively included in the institutional credit conveyance instrument.
- Sorting out and connecting agriculturists with temporary workers under contract cultivating courses of action and in-building credit conveyance under the agreement decreases the risk.
- Mass mindfulness program for advancing insurance plan and product markets plans ought to be propelled for expanding their scope.
- Banks ought to tie up with the corporate division processor, contractual worker under contract cultivating plans and related firms for linking so as to subsidize agriculturists and their advertising credit.
- State government ought to take follow up on the Multi State Cooperative act in 2002.

5.3 Conclusion

Agriculture may be a methodology of cultivation of plants for food, meditative merchandise and fiber to stay up and enhance the human life. The history of most of the countries revealed that the wider economic development was followed by the growth of agriculture. Agriculture in India has a significant history and is the backbone of Indian economy since independence and it will continue for long time. Agriculture is the backbone for most of the countries; however the agriculture sector often faces many challenges. Many for most of the countries; however the agriculture sector often faces many challenges. Many countries are evidenced for weaker infrastructure facilities. Importantly it is higher in the rural areas. Agriculture productivity is sluggish and the lack of opportunities for income diversification and poor market functioning causes for low economic growth. The other side's the world agriculture system have been facing problems with many issues; the general issues facing by the world agriculture were climate changes, irrigation related problems, deforestation, genetic engineering, pollutants, soil related problems and wastage.

In the present global scenario the concept of risk has become a focal point for those who are thinking and acting in markets. The market may be financial, commodity, and currency etc. the concept of risk and uncertainty are pervasive characteristics of agriculture production process. These risk and uncertainty arises due to by different biophysical factors such as highly variability in weather conditions, diseases and pest infestation, the other factors like the changing economic environment, introduction of new crop and new technologies and uncertainties around the public institutions and their policy implementation and the other factors with combine these natural factors price and income risk for farmers. A series of psychological concepts and social construct together linked with the behavior of a

human being. The main objective is to analyze the factors that influence the farmers risk behavior in decision making to adopt the price risk management tool to hedge their price risk. The applied system of the study depends on the hypothesis of dispersion of developments. According to the hypothesis, the advancement choice procedure can prompt either reception, a choice to make utilization of the innovation at fullest and in the best course of action which is accessible, or dismissal, a choice not to receive advancement. The study focuses on to identify the key characteristics that might influence the farmer's risk related decision behavior of using risk management tools. In for the most part hedging theories risk attitude play an imperative part in decisions to engage risk management techniques. The relationship in between farmers behavior and attitude towards to use a risk management tool to hedge their commodity price risk has been examined in this study and the association in between the demographic variables with the decision making factors has been examined.

The farm experience helps to farmers to take effective farm related decisions. Whereas this farm experience is not helping to take price risk related decisions. The infrastructural facilities like market availability, transport facilities and storage capacity show a positive impact on price risk related decision making.

5.4 Scope for Future Studies

This study is an attempt to analyze the Behaviour of Famers towards risk management practices and to investigate the factors influencing on price risk management. We apply the techniques to identify factors and their influence on risk management. The results of our study provide new insights into the manner in which farmers choose different price management practices. The study, however, is limited

by the lack of data because the sample is limited to 409. Including non-participants in future studies would greatly enhance our understanding of the Farmers behaviour.

This study is limited to cotton farmers. An extension of the study to include other crops and States would be useful. Furthermore, the data used in this study represent only a single year, 2013, which is not a representative crop year by any means. An extension of this analysis to include more years would provide a more robust set of results.

We estimated yield and revenue distributions using only 5 years of data, which may not represent the full range of loss possibilities. The availability of more data, both at the individual farm and county level, would greatly improve the robustness of the results. Lack of data on farmers' wealth and other demographic characteristics, limited our estimation of the risk-aversion behavior of farmers. A major issue which this study could not accurately address is the impact of subsidies on the choice of alternative. On the other hand, given the nature of risks in agricultural production, it is possible to argue that the risk management practices may not function efficiently without Federal subsidies. An empirical investigation of this issue would be useful. An analysis of market efficiency over time can provide insights into the benefits from making available a large number of risk management practices to farmers.

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FACTORS AFFECTING FARMER'S PARTICIPATION IN PRICE RISK MANAGEMENT

- A STUDY OF TELANGANA STATE COTTON FARMERS

A Thesis Submitted to the University of Hyderabad in Partial Fulfillment for the Award of the Degree of

DOCTOR OF PHILOSOPHY

In

MANAGEMENT

By

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ABSTRACT

Agriculture may be a methodology of cultivation of plants for food, meditative merchandise and fiber to stay up and enhance the human life. Agriculture has a significant growth and developments since the earliest cultivation of plants developed around 12000 years ago. The history of most of the countries revealed that the wider economic development was followed by the growth of agriculture.

Agriculture in India has a significant history and is the backbone of Indian economy since independence and it will continue for long time. According to CIA Fact book 2008 statistics India ranks second world largest farm output country. However the agriculture sector often faces many challenges. Many countries are evidenced for weaker infrastructure facilities. Importantly it is higher in the rural areas.

The risk and uncertainty in financial gain variations plays an imperative role in farmer's suicides. The foremost of the developing countries like India weren't properly introduced the organized risk management tools and techniques to cut back the financial gain variations.

The economic issue is un-avoidable component within the context of farmer deciding behavior. The farmer's angle principally depends on problems like family monetary pressures, size of land, the tutorial levels of farmers, awareness levels and therefore the risk angle. the target of the farmers depends on whether or not farmer follows the tradition of the family, farmer a lot of interested on doing agriculture work instead of option work, if the farmers wish to try and do farming as a result of to earn the affordable financial gain to their family these reasonably farmers typically not interested to implement the new innovative measures.

In the present global scenario the concept of risk has became a focal point for those who are thinking and acting in markets. Risk is a combination of probabilities and its consequences; risk undertakes the consequential events like the opportunities of benefits (positive side) or the opportunities of threats (negative side).

The objective of the study is to analyze the factors that influence the farmer's risk behavior in decision making to adopt the price risk management tool to hedge their price risk. The study sample 409 has been collected for analyzing the Objective. The respondents of the study are the cotton sowing farmers in Telangana state selected districts.

The study finds the the farm experience helps to farmers to take effective farm related decisions. Whereas this farm experience is not helping to take price risk related decisions. The Infrastructural facilities like market availability, transport facilities and storage capacity shows a positive impact on price risk related decision making. Education is the major obstacle for price risk participation.

The study suggest that the Indian Government should concentrate on to improve the financial sustainability of agriculture, rural finance and commodity trade through commercial actors it will helps to improve the price risk participation. Increase the awareness programs related to the price risk management tools and techniques. Government should take an initiation to improve proper storage facilities and conditions to store farmer's crop. Government should allow subsidies on charges for farmers those who are utilizing the risk management practices.

1. Background of the study

Agriculture may be a methodology of cultivation of plants for food, meditative merchandise and fiber to stay up and enhance the human life (International Labor Organization (1999) (Sean B. Carroll (2010) (Adams et al, 1998). The word agriculture adopted from Latin word known as Agricultura (Adams et al, 1998). Thousands of year's history of the agriculture defined in different ways in different culture, climates and technologies (Adams et al, 1998). Agriculture has a significant growth and developments since the earliest cultivation of plants developed around 12000 years ago (Michael Balter, 2013), (Rajendra Abhyankar, 2013). The Western Asian countries, Egypt and India were destinations of the soonest arranged sowing and reaping of plants that had beforehand been accumulated in nature and the independent development of agriculture growth has been occurred in China, Africa, India and several regions of the America (Sean B. Carroll (2010). The irrigation, Crop rotation and the use of Fertilizers were developed about 200 years ago (Jared (2012). In the past century, agriculture in the developed nations and the developing nations has been characterized by enhancing the productivity of agriculture and the replacement of human labor by synthetic fertilizers and pesticides and mechanization.

The modern British agriculture revolution saw a massive increase in productivity in between 16^{th} century and mid 19^{th} century. The historical standard was in this period is the use of primitive agriculture techniques. Agriculture is the major sector which provides the higher portion of employment until the industrial revolution started globally. In the last two decades the agriculture sector has been closely related with political issues of the nations, the issues like water - pollution, bio - fuels, tariffs and farm - subsidies.

he history of most of the countries revealed that the wider economic development was followed by the growth of agriculture. In the eighteen century the industrial development in the United Kingdom of Great Britain and North Ireland and the present developed countries like China and Viatnam was witnessed for the rise of agriculture sector is forerunner to the ascent of mechanical and service sector in those countries, not just in developed countries the developing countries and the poor developing countries are still agriculture is the primary activity and it is the backbone to the economy. The macroeconomic policies of countries directly affect the performance of agriculture economy.

The world population growth rate has been increasing rapidly since 1970's. The population has almost doubled since then – approximately the world population is 7 billion people, at the same time the demographic growth rates have been slowing down since 1970. Agriculture is the major sector which provides major portion of food to the world population. Half of the world population, it means more than 3 billion people live in the rural areas; out of this roughly 2.5 billion people derive their livelihoods from agriculture(FAO statistics, 2013). Most of the economically developing countries' growth depends on agriculture and in many poor developing countries has the agriculture sector are the backbone of their country is economy. The agriculture sector maintenance in the rural areas the farmers protecting the agriculture with various risks.

Agriculture, as in many other developing countries, is the mainstay of the country's economy where nearly 85 percent of the population earns its livelihood, contributing over 50 percent to the GDP, and about 90 percent of the foreign exchange earnings. However, agriculture is largely small scale and subsistence oriented and mainly depends on rainfall.

The smallholder farming that accounts for more than 90 percent of the crop output dominates the agricultural sector. Crops are used as a major source of food, and serve as a means of foreign exchange earnings, raw material for the industrial sector etc. In addition, crops supply the livestock enterprises with crop aftermath for grazing and crop straws that are important animal feed particularly during the dry seasons.

1.1 Statement of the Problem

Farmers living in Telangana State districts are exposed to many forms of risks for several years, primarily production risks and value risk. Ranging from the independence of the world has repeatedly been suffering from downfall shortage, correct water facilities and weather variability normally leading to severe drought devastating an enormous variety of stock, and adult working class. The recent socio-economic surveys confirmed that agricultural production depends mostly on destruction that is a ton of powerless against variety spatially and transiently. Nonappearance and uneven diffusion of destruction each in Mahaboob nagar in like manner as in a few regions all through seasons makes awfully genuine agrarian production drawback. Blighter and weed infestation, harvest and stock ailments conjointly add to agricultural production issues inside of the area. Variability in ruin obliges the supply of stock bolster that progressively prompts low level of profitability and monetary benefit from this area. The blend consequence of such and distinctive institutional components made the regions one amongst the food unreliable areas inside of the district.

It is apparent that risks, especially yield variety and value vacillation will have a major negative effect on the lives of sodbuster agriculturists in developing nations. Farmer's, accordingly, attempt and answer such variety of pervasive impact of risk given

the present level of assets/asset blessings in a few ways that. Underneath conventional situation access to fund, fundamentally credit from financial foundations is accepted to help the force of ranch. Agriculturist's to broaden monetary benefit sources and upgrade comes back from the present assets. It's conjointly contended that absence of access to formal credit and fiscal intervention obstructs farming improvement and hampers the endeavors to ease rustic monetary condition. The distribution of assets in light of risk influences short-run come augmentation and has a direction on the semi lasting powerlessness of the households by means of the effect on funds and speculation.

Decision-making beneath uncertainty, markedly in agriculture is predicted to vary across regions, nations, farming systems and people supported their expectations and risk bearing ability, attitudes, (Hazell and Norton, 1986). Additionally, farmers' angle towards risks and uncertainty and their response could vary from Farmer to farmer due to distinction in preference and perception of risks. in line with Wolday (2000), interventions through the delivery of microfinance services are thought of collectively of the policy instruments of the govt. and Non-Government Organizations (NGOs) to alter rural and concrete poor increase output and productivity, induce technology adoption, improve input offer, increase financial gain, scale back financial condition and attain food security.

The institution of property microfinance establishments that reach an outsized range of rural and concrete poor WHO aren't served by the traditional monetary establishments, like the event Banks of Federal Democratic Republic of Ethiopia (DEB), has been a chief part of the new development strategy of Federal Democratic Republic of Ethiopia. The idea of economic leverage, on the opposite hand, states that credit service

can have positive contribution for risk bearing ability of farmers as long as the speed of come back to total capital of the farm is larger than the price of capital. Otherwise, credit service rather would have a risk magnifying result to the unit.

So far, however, the likelihood of up farmers' financial gain through reallocation of existing assets given the objectives of farm households, the varied sources of risks they face and also the management methods they use to face up to the adverse influence of production and value connected risks weren't studied and documented within the study space. Additionally, the impact of credit on the financial gain risk of the farmers has not nevertheless been studied. Within the absence of such sort of study on risk and uncertainty, one amongst the fundamental considerations of sodbuster farmers, the planning and implementation of effective risk management methods to confirm food security drawback within the space may well be problematic.

2. Literature Review:

2.1 Risk & Uncertainty

In the present global scenario the concept of risk has became a focal point for those who are thinking and acting in markets. The market may be Financial, Commodity, and Currency etc. The market crises and volatility in the past four decades conformed that the centrality and importance of risk and its analysis.

The widely known classical book of “Risk, Uncertainty and Profit (1921)” by Frank & Knight made an imperative difference in between the risk and uncertainty. According to this definition risk refers to the situation where probabilities are known and uncertainty is the situation where the probabilities are unknown to decision maker and most of the agriculture economic text book used to differentiate between risk and

uncertainty. Risk is restricted to the situation where probabilities can be joined to the event of occasions which influence the outcome of the choice making process while uncertainty refers to circumstances where it is unrealistic to attach probabilities to the occurrence of the event (Ellis, 1993). Hazell and Norton (1986) have given a pointed out distinguishing difference on risk and uncertainty based on the knowledge of probabilities is not useful since the data for estimating income distribution are usually restricted to relatively subjective anticipations by the farmers. Hardaker et al (1997) stated that the risk and uncertainty based on the probability of events is not a useful distinction since cases where probabilities objectively known are expectations rather than the rule in decision making. Instead, they argued that uncertainty as inadequate awareness and risks as uncertain consequences. McConnell & Dillon (1997) explain about risk and uncertainty based on the impact of the outcome of events. They stated that while uncertainty is always present, risk might not be. Risk is just present when the dubious results of a choice are viewed by the chief as huge or worth agonizing over, that is to say when they affect his or her well being. Hardaker (2000) tried to explain the complexity of the risk definition and uncertainty, the common definitions of risk according him are: the chance of bad outcomes, the variability of outcomes, and the uncertainty of outcomes. The risk more explained by the chance of bad outcomes (negative).

Uncertainty is generally applies in the prediction of future events it means the state of not knowing the proposition weather it is going to happened or not going to happen. Uncertainty can be defined as *"any deviations from the unachievable ideal of completely deterministic knowledge of the relevant system"* (Walker et al, 2003). The indeterminacy concepts exist with two mathematical systems: Probability theory

(Kolmogorov 1933) & Uncertainty theory (Liu 2007). The concept of probability theory started in the 17th century by Pascal and Fermat. The concept of probability theory applicable when the samples are available (Baoding Liu 2014). In the other hand when the only belief degrees available in that situation the uncertainty theory is applicable to predict the future (Liu 2012). Leanne Knobloch Denise Solomon (1999) studied the uncertainty theory and describes the communicative behavior of human being in terms of inability of attitude, feeling and behavior.

2.2 Why Risk Need to be Consider in Agriculture

The agriculture risk is varies from farmers to farmers and varies from farming system. The most farmers facing a common risk that is climate changes, government policy changes and institutional changes and price risk. It means the agricultural risks seem to be prevalent throughout the world and these risk burdens to smallholder farmers in developing countries compare the developed countries (Hazell and Norton 1986). According to these authors the hazard avoidance conduct arranging models regularly prompts the outcomes that are inadmissible to farmers and this leads.

Consequently, according to these authors, disregarding hazard avoidance conduct in arranging models frequently prompts comes about that are unsuitable to the farmers on the other hand bear little connection to the decisions they actually make. In fact, risk and uncertainty are indispensable in every economic undertaking. Because every decision has its consequence in the future, and we can never be sure of what those consequence will be. It is often said that in business, profit is a reward for the risk bearing, no risk, no gain. The task rather is to handle successfully with the ability of individuals or cluster to hold up unfavorable outcomes (Hardaker *et al*., 2004, 2005)

2.3 Farmers Decision Behavior:

The studies related to farmer's behavior and the motives for farmer's behavior are not new (Ashby, A. W. (1926), Gasson, 1973). A series of psychological concepts and social construct together linked with the behavior of a human being (Fishbein and Manfredo, 1975). In social psychology the relationship in between attitude and behavior is a long established traditional study it was introduced by (Fishbein 1967) later this study formalized by (Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980), However there are numbers of studies have been considered the farmers behavior and attitude towards their decision making (Westmacott and Worthington,1984; MacDonald, 1984). The other studies like Theory Reasoned Action (TRA) or Theory Planned Behavior (TPR) for to investigate the farmer's behavior (Garforthet al., 2004; Gunn et al., 2008; Ellis-Iversen et al., 2010). These theories help to predict the individual behavior means intention and engage the behavior. The intention represents the individual orientation behavior and it reflects the motivations towards the individual behavior. The two theories Theory Reasoned Action (TRA) and Theory Planned Behavior have been proved the effective predictor of variety of behavior (Armitage and Conner, 2001; Jackson et al., 2006). In agriculture sector some studies have been proved that the attitude were the important predictor of farmers behavior (Thompson and Panayiotopoulos, 1999; Garforth et al., 2004; Wolff, 2012). On the other hand, Ellis-Iversen et al. (2010) .

2.4 Risk Attitude

The general characteristics of farmers are attitude and motivation directly affects the decision making of the farmers and farmers more influenced by practice and implemented for what they familiar with (Casal et al., 2007). The general farmers

attitudes identifies risk averse, innovative, diversification and satisfaction towards farming, but most of the studies out come on attitude studies are maximizing the profits. A person intension/decision are based essentially based on two factor the attitude towards a particular behavior and persons individual perception of the social pressure on him. The social pressure motivates for a particular behavior where as the attitude is a belief about the outcome of the behavior (Ajzen, 1981);

2.5 Farming Objective

The Farmers objective or farming objectives are studies in different view point; job satisfaction, financial requirements, quality of life and social status in society etc., but most of the researchers concentrated on management objectives and goals. It is assumed by different researchers peoples are having ability to think about future it means goal oriented and people self motivated (Locke & Bryan, 1969; Bingswanger, 1980). A goal of the people helps to establish their focus to attention and priorities on their relevant information, setting of a goal cannot explain the motivational phenomena but it allow measuring (Locke, Shaw, Saari, & Latham, 1981). Along with the goals values are also significant in farming (Gasson 1974). The values are classified in to four types Economic Values, Social Values, Expressive Values and Intrinsic values, and the farm values are classified in to two types economic factor related and job satisfaction (Gasson (1973). The highest rated objective of farmers was making the sufficient profits, and second rated objective was being a good farmer (Robinson (1983). There are some researchers focus on why farmers participating in farming? They ranked intrinsic values on top, job satisfaction is important for most of the farmers where as the successful farmers rated to

economic outcomes and economic values (Casebow, 1981; Gasson, 1973; 1974; Gilmor, 1986; Illbery, 1985a & b).

2.5 Perceived Risk Exposure

Most of the hedging studies identified that the Risk attitude play a Vitol role in decision making behavior (Carter 1999). Risk management policy affects by the managerial risk aversion (Tufano (1996). The perceived control theory added by the theory of planned behavior (Ajzen and Fishbein, 1980). The perceived risk exposure behavior directly effects on the intension and decision behavior of farmers (Ajzen, 1988; Ajzen, 1991). The perceived risk exposure concept considers the perception about the "availability of requisite opportunities and assets (Ajzen, 1991).

2.6 Market Orientation:

The interest on emerging markets research have been growing since last decades (Erdem, Swait, & Valenzuela, 2006; Johnson & Tellis, 2008). According to the FAO statistics the 2//3 of populations are living in rural areas, more researchers and economists are having particular attention and interest to studies related to emerging markets (Burgess & Steenkamp, 2006). Many theories market and market studies have proven that the emerging markets are facing many problems like scarcity of assets, lack institutional support and the distance from high income markets are the major challenges for emerging markets (Viswanathan, Rosa, & Ruth, 2010 Rivera-Santos & Rufin, 2010).

2.7 Entrepreneur Freedom:

A very few of the researchers only concentrated on the link in between economic freedom and

economic growth, and most of economists interested on property rights, economic freedom and free market kind of issues. The literature on economic freedom and growth studies relatively recent. Generally the economic freedom index measures the individuals free to engaging voluntary transactions and the rightly acquired properties. Economic freedom is not an easy task to measure because it involved quality as well as quantity elements. Consequently the subjective and imprecision are inevitable in measuring the economic freedom. In the economic freedom there are many variables were included; the rule of law, regulations and low taxes and government interference etc, these variables positively influence the total productivity. The growth is related to economic freedom variables.

3. Research Gaps

The following analysis gaps have been known supported literature review. The literature review has shown totally different dimensions and different parts were influencing the choice creating of a private. It's difficult to check all those dimensions in a very restricted period of time. On the premise of your time and cash constrain the subsequent analysis gaps were taken in to thought.

1. According to the Everett Rogers (1962) the Diffusion of innovations theory seeks to elucidate however, why and at what rate new concepts and technology unfold through cultures, however Diffusion manifests itself in numerous ways in which in numerous way in which numerous cultures and fields and is very subject to the sort of adopters and innovation-decision method.

2. Presently there's a market gap between several developing countries artifact Farmers/intermediaries and also the markets for physical or monetary worth risk management.
3. The decision process in the farmer's case is not as rationalized. There are many components play a part in the farmer's decision to adopt the risk management tools. Particularly in developing countries like India the studies related farmers behavior were behavioral a little.

4. Research Objectives

The main objective is to analyze the factors that influence the farmer's risk behavior in decision making to adopt the price risk management tools to hedge their price risk.

Subsidiary Objectives

To achieve this main objective the following subsidiary objectives have been framed

I. To Study the present scenario of risk management practices by farmers in the sample study.
II. To examine the factors which influence the farmer's participation in the price risk management?
III. To analyze the factors that impact the farmers participation in price risk management.
IV. To present the association of demographic variables on Farmer's risk behavior.

5. Research Questions

The analysis queries facilitate to form and specifically focus the aim of the study. These analysis queries inquire regarding the relationships among variables that the study seeks to understand. In survey based mostly studies particularly in scientific discipline analysis often used these analysis inquiries to understand the aim of the study. There a restricted research on Farmers behavior in Indian and also the impact of components/factors towards the worth risk behavior and motivation constructs. Relying upon the gaps found within the literature the subsequent analysis queries are} raised that measure association between the demographic variable and impact of every element on farmers risk behavior. So the study tries to makes an endeavor to answer the subsequent analysis queries.

1. How well do the identified Components/factors predict the farmer's risk behavior decision?
2. How much variance scores can be explained by the identified measures of scales?
3. How well the every class of demographic variables associate the farmer's risk behavior?

6. Research Hypothesis

Research Hypothesis is a tentative explanation that accounts for a set of facts and can be tested by further investigation. In the first attempt of the study identified five critical components/factors, based on five identified components the following five tentative hypotheses were framed and to measure the association of demographic variables one additional hypothesis were framed.

RH_1: There is a significant relationship between farmer's risk behavior and Risk Attitude of the farmers.

RH_2: There is a significant relationship between farmer's risk behavior and Level of Understanding of the farmer.

RH_3: There is a significant relationship between farmer's risk behavior and Perceived risk exposure of the farmer.

RH_4: There is a significant relationship between farmer's risk behavior and Objective of farming of the farmer.

RH_5: There is a significant relationship between farmer's risk behavior and Economic Freedom of the farmer.

RH_6: There is a significant relationship between farmer's risk behavior and Demographic Variables

$RH_{6\,(1)}$: There is a significant association between Farmers decision behavior and Land holding of the Farmer.

$RH_{6\,(2)}$: There is a significant association between Farmers decision behavior and Farm Experience

$RH_{6\,(3)}$: There is a significant association between Farmers decision behavior and Farm Income.

$RH_{6\,(4)}$: There is a significant association between Farmers decision behavior and Educational level of farmer.

$RH_{6\,(5)}$: There is a significant association between Farmers decision behavior and Farmer's debt equity ratio.

7. Findings

- The total land holdings of the sample were 801.2 hectors or 1978.96 acres, whereas the average land holding of the sample were 1.96 hectors or 4.84 acres. The large and medium land holders have a feasibility in implementing the innovative ideas and have a chance to implement new techniques in farm related issues like use of machinery etc this helps to low cost of production whereas the Marginal farmers not have these kind of opportunities
- The farm experience helps to farmers to take effective farm related decisions. Whereas this farm experience is not helping to take price risk related decisions. The experience in the farm helps in increasing the farm out, effective use of fertilizes effective management of pest etc. while taking the risk related decision farmer must have awareness about the risk management tool, premium charges, intermediaries etc., and the lack of awareness among farmers fails in participating price risk management.
- The Infrastructural facilities like market availability, transport facilities and storage capacity shows a positive impact on price risk related decision making.
- Education is the major obstacle for price risk participation. The average educational years of the farmers are 5.84 years. Education helps the farmers to better understand the perform of risk management tool performance and regulations.
- The debt ratio of the farmers also shows impact on price risk participation. The higher debt ratio of the farmer not giving freedom to implement new ideas. The

farmers those who are having lesser debt ratio they can implement the new innovative ideas even the decisions may be risky.

- The lack and access to get formal credit facilities generally restricts the investment processing, storage and market avenues. In rural area the informal credit providers charging an interest in between 36% to 70% per annum.
- Lack of proper storage facilities farmers selling their crops early in the markets or to a middle man.
- The farmers selling output early without waiting for proper rate because for early cash requirements, repay the loans and credits, to manage household expenses and for the social obligations.
- A very few of the farmers realized with the previous bad experiences faced by them. This experience motivating to hedge their risk, importantly those farmers who can't afford the risk situation.
- A very few farmer's taking the risk condition as a challenge and some farmers try to manage these risks by implementing the new ideas like timing strategies and sales spreading etc.
- The continuation of tradition in farming and the farmers those who are farming for an objective of keeping the land in a better condition are not interested to implement the new and innovative ideas in their farm. The traditional way of farming causing for low productivity, high cost of production and low income.
- There are some farmers trying to make farming to get a reasonable income. These famers risk participation behavior is not accepting change in their field. Farmers those who are doing farming for leaving the land in a better condition rather

than making profits from the farming also not accepting changes in their field of farm.

- The low understanding level about the market, supply chain, Minimum Support Price (MSP) fixed by the Government and impact of EXIM policy on commodity pricing directly influencing the price risk behavior.
- Most of the farmer's in a bullish ideology. Their Exposure is always to look up of the commodity price. This bullish ideology creating a situation like the price of the commodity in the markets is not at all risky.
- The economic freedom of farmers like the taxes, participation charges, transportation charges directly influence the farmer's decision behavior. In the commodity markets the minimum lot size of a contract value is nearly 2, 00,000 the marginal and small farmers are not affordable this much value of lot sizes. The premium of crop insurance schemes also high in the percept of the marginal and small farmers.
- The regulations related to the NAIS crop insurance is suitable to some of the crop related issues, many issues where farmers getting losses are not covered by the NAIS.
- The Risk Attitude, Farming Objectivity and Level of Understanding impact are higher than the Risk exposure and Economic freedom.
- The market size in India is vast and it is consistently growing. Agriculturist's business sector linkages have additionally expanded different. Though the advertising framework has not kept pace.

- The Private exchange handles 80% of the advertised overflow, has not put resources into promoting foundation because of the inordinate administrative system and strength of the disorderly segment.
- Increased interest for the worth included administrations and geographic extension of business sectors requests stretching of the promoting channel yet this is hampered by absence of rustic base.
- Direct showcasing by ranchers to buyers stays immaterial. The majority of the little and minor agriculturists go to the business sectors and inside of this 85% need offices for productive exchange.
- For encouraging exchange at the essential business sector level, government has built business sector yards/sub-yards however a large portion of this business sector yards/sub yards are poorly prepared.
- Food preparing industry has a high pay multiplier impact and business potential. Yet, in India in light of the assortment of sustenance related laws the worth expansion to nourishment creation is just 7%.
- Due to poor taking care of (cleaning, sorting, evaluating and bundling) at the homestead entryway or town level, around 7% of grains, 30% of foods grown from the ground and 10% of seed species are lost before achieving the business sector.
- An assessed Rs. 50,000 Crore. is lost every year in the showcasing tie because of ineffectively created advertising framework and over the top controls.
- The State Agricultural Produce Markets Regulation (APMR) enactment hampers contract cultivating activities, which generally can be exceedingly fruitful.

- When the ranchers moving to higher-esteem crops they confront an expanded risk of change in yield, cost and pay.
- The horticultural cost approach and related instruments have prompted ranchers to embrace innovation and in this way increment physical and monetary access to sustenance; they have lessened private part activity and made a few different issues in the economy.
- In the procedure of change of advertising arrangement of homestead items in agribusiness markets started in the 1950s and 1960. This demonstration circled by the focal government, it ordered by every significant state APMR enactment. This enactment covers more than 98% of the distinguished wholesale markets in the nation.
- Various issues have been highlighted in rural markets such as absence of obviously open procedure of value revelation, need precise and dependable measuring, un institutionalized business sector charges, in the installment of money to agriculturists without undue derivations, need debate settlement instrument, appropriate timing and sequencing of barters, legitimate lessening in physical misfortunes of produce, and non accessibility of a few luxuries in business sector yards.
- In most cases the business sector functionaries have framed a solid affiliation, blockading the passage of new functionaries. These cultivated affiliations significant part of the business sector expense, which by definition is the charge for the administration gave to the business sector functionaries is not furrowed back.

- The government and traders/commission agents resisting the private sector investment in agriculture marketing.
- Lack of creating marketing groups, self help group and cooperative society's farmers are not benefiting the markets minimum guaranteed price scheme.
- The commercial banks generally delay the processing the loan applications of the farmers and the sanction rate around 50% or less this is also caused for low participation in price risk management.
- Lack of awareness programs of crop insurance and commodity markets the schemes are not popularized in farmers.

8. Suggestions

- Government should concentrate on to improve the financial sustainability of agriculture, rural finance and commodity trade through commercial actors it will help to improve the price risk participation.
- Increase the awareness programs related to the price risk management tools and techniques. The Forward market Commission (FMC) behavioring awareness programs about commodity markets but it is not sufficient to create the awareness about the commodity markets. FMC should increase these kinds of programs.
- The Agriculture extension officers and NGO's must take an initiation to create awareness about the Crop insurance facilities.
- Government should take an initiation to improve proper storage facilities and conditions to store farmer's crop.
- Government should allow subsidies on charges for farmers those who are utilizing the Warehousing facilities.

- It is not possible to improve the educational years of farmers but proper training and awareness regarding the new technology implementation, techniques to reduce risk will help farmers for a better agricultural system.
- In India the proportionate of Marginal, Small and Semi medium farmers were high these farmers are around 95% in total agricultural census. The policy makers consider these population while preparation of policies.
    - Ex: the Commodity market minimum lot size were nearly 2, 00,000 these amount is not affordable by marginal and small farmers.
    - Ex: the premium amount of Crop insurance also considered as high.
    - If the policy makers considered these farmers the risk participation may be higher.
- Improve the negotiation power of farmers through regular diffusion of price information. The displaying the prices in regular intervals in different villages. It results into a better negotiation power in the spot and local traders.
- The Institutional entities can act as technical support provider to improve price risk management participation. These institutional entities mainly focus in the procedure requirements and technical complexities in price risk participation.
- The market committees should concentrate on several problems these contain a visibly open process of price discovery, more precisely and unfailing weighing, homogeneous market charges, , dispute settlement mechanism, payment of money to agriculturists without undue reasonings, timing and sequencing of auctions, reduction in physical losses of produce, and availability of a few civilities in market yards.

- To develop the marketing system of farm products wholesale agricultural produce markets should be synchronized.
- Monopoly procurement of raw cotton is still in place, which hampers free marketing of raw cotton in the country.
- The market committees eliminate the associations of market functionaries and try to do a fair trade environment.
- The private sector investment in agriculture marketing helps to recover the efficiency in the marketing system.
- Farmers will be advantageous from deregulation of business sectors least ensured value plan, contract farming or crop/income insurance only to the degree they sort out in advertising bunches self improvement group cooperative societies.
- The state government should take the initiation to speed up the loan application process and should take the initiation to increase the loan sanction percentage will help improve the risk participation.
- The state government ought to regulate distribution center receipt to make it an instrument for acquiring credit from institutional offices.
- The NGOs, PRIs and intentional gatherings ought to be effectively included in the institutional credit conveyance instrument.
- Sorting out and connecting agriculturists with temporary workers under contract cultivating courses of action and in-building credit conveyance under the agreement decreases the risk.
- Mass mindfulness program for advancing insurance plan and product markets plans ought to be propelled for expanding their scope.

- Banks ought to tie up with the corporate division processor, contractual worker under contract cultivating plans and related firms for linking so as to subsidize agriculturists and their advertising credit.
- State government ought to take follow up on the Multi State Cooperative act in 2002.

9. Conclusion

Agriculture may be a methodology of cultivation of plants for food, meditative merchandise and fiber to stay up and enhance the human life. The history of most of the countries revealed that the wider economic development was followed by the growth of agriculture. Agriculture in India has a significant history and is the backbone of Indian economy since independence and it will continue for long time. Agriculture is the backbone for most of the countries; however the agriculture sector often faces many challenges. Many for most of the countries; however the agriculture sector often faces many challenges. Many countries are evidenced for weaker infrastructure facilities. Importantly it is higher in the rural areas. Agriculture productivity is sluggish and the lack of opportunities for income diversification and poor market functioning causes for low economic growth. The other side's the world agriculture system have been facing problems with many issues; the general issues facing by the world agriculture were climate changes, irrigation related problems, deforestation, genetic engineering, pollutants, soil related problems and wastage.

In the present global scenario the concept of risk has become a focal point for those who are thinking and acting in markets. The market may be financial, commodity, and currency etc. the concept of risk and uncertainty are pervasive characteristics of

agriculture production process. These risk and uncertainty arises due to by different biophysical factors such as highly variability in weather conditions, diseases and pest infestation, the other factors like the changing economic environment, introduction of new crop and new technologies and uncertainties around the public institutions and their policy implementation and the other factors with combine these natural factors price and income risk for farmers. A series of psychological concepts and social construct together linked with the behavior of a human being. The main objective is to analyze the factors that influence the farmers risk behavior in decision making to adopt the price risk management tool to hedge their price risk. The applied system of the study depends on the hypothesis of dispersion of developments. According to the hypothesis, the advancement choice procedure can prompt either reception, a choice to make utilization of the innovation at fullest and in the best course of action which is accessible, or dismissal, a choice not to receive advancement. The study focuses on to identify the key characteristics that might influence the farmer's risk related decision behavior of using risk management tools. In for the most part hedging theories risk attitude play an imperative part in decisions to engage risk management techniques. The relationship in between farmers behavior and attitude towards to use a risk management tool to hedge their commodity price risk has been examined in this study and the association in between the demographic variables with the decision making factors has been examined.

The farm experience helps to farmers to take effective farm related decisions. Whereas this farm experience is not helping to take price risk related decisions. The infrastructural facilities like market availability, transport facilities and storage capacity show a positive impact on price risk related decision making.