# An Analysis of Farmers Risk in Agriculture Production and Marketing
## (With reference to shivamogga district)

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**Introduction:** India is a land of villages with 80 percent of population residing in about 6 lakh villages. So it is predominantly an agricultural country. Agriculture forms the backbone and important sector in the Indian Economy. The farmers carry out the cultivation on an age – old traditional methods. Efforts will make to change in their traditional farming methods, and thereby increase agricultural products. Improvement is not a simple task. It involves complex phenomenon. Rice is an important food crop in India and second most important crop in the world. It is the staple food for the world's most densely populated region and for hundreds of millions in Africa and Latin America. Rice processing is the oldest and the agro processing industry of the country. At present it has a turnover of more than ` 36,500/- crores per annum. India processes about 85 million tones of paddy per year and provides staple food grain and other valuable products required by the population. Recently, more than 50% of the overall rice production is processed by modern mills, 40% by conventional mills, and the remaining 10% by hand pounding. In Karnataka the area under paddy was 22,67,400 hectares with the production of 64,55,150 tonnes during 2009-2010. Davangere, Mandya, Raichur, Bellary Shimoga are the major paddy growing and paddy milling areas in the state.. The post harvest technology of rice has come a long way over the past three decades. (Bawa, R.S. and Kainth G.S). The sustained growth of any processing industry depends on the viability which is largely determined by the cost of production and management efficiency in processing. Cost of production is an important variable that influences the profits, which are also an indicator of management efficiency.

Indian agriculture has achieved tremendous growth in production and productivity of crops after Independence. Between 1950-51 and 2009-10, production of food grains increased from 51 million tones (mt) to 233 mt, while oilseeds production increased from 5.16 mt to 29.76 mt. Similar growth has also been achieved in sugarcane, cotton, fruits, vegetables and other crops (Government of India, 2009). Per capita availability of these commodities has also increased. The increased volume of crop output, which resulted from the intensification of agriculture after the introduction of green revolution during the mid-sixties, helped to increase the wage rate and generate more employment opportunities in the rural areas particularly for the landless labourers (Dev and Ranade, 1998; Saleth, *et al.,* 2003; Narayanamoorthy and Deshpande, 2003). The incidence of rural poverty has also reduced considerably from 56.44 per cent during 1972-73 to 28.33 per cent in 2004- 05 mainly because of the improved production of agricultural commodities, as proved by a number of studies (Ahluwalia, 1978; Narayanamoorthy, 2001; Saleth *et al.,* 2003; Hussain and Hanjra, 2003; 2004). These achievements would not have been possible without the incisive role of Indian farmers (Swaminathan, 2008). Despite these achievements, there is not great news from the farm sector since the early 1990s. Farmers' suicides, indebtedness, crop failures, un-remunerative prices for crops and poor returns over cost of cultivation are the prominent features of India's agriculture today. Farmers committing suicides were not common before the early 1990s, but it became a widespread phenomenon today in many States in India. Over two lakh farmers committed suicides in India between 1990-91 and 2009-10 and the proportion is alarmingly high in States like Maharashtra, Andhra Pradesh and Karnataka (Sainath, 2010). Why is this happening in India? Is it because of poor returns from crop cultivation? Or due to failures caused by vagaries of monsoons.

Risk is uncertainty that affects an individual's welfare, and is often associated with adversity and loss (Bodie and Merton). Risk is uncertainty that "matters," and may involve the probability of losing money, possible harm to human health, repercussions that affect resources (irrigation, credit), and other types of events that affect a person's welfare. Uncertainty (a situation in which a person does not know for sure what will happen) is necessary for risk to occur, but uncertainty need not lead to a risky situation.

Risk in agriculture is pervasive and complex, especially in agricultural production. Farmers confront a variety of yields, unstable output and input prices and radical changes in production technology as inherent in their farming operations. These affect the fluctuation in farm profitability from season to season and from one year to another. The sources of risk and level of its severity can vary according to the farming systems, geographic location, weather conditions, supporting government policies and farm types. Risk is a major concern in developing countries where farmers have imperfect information to forecast things such as farm input prices, product prices, and weather conditions, that might impact the farms in the future. The types and severity of risks that farmers face differ from place to place. Incorporating and understanding the effects of risk at the farm level will benefit policy makers who develop appropriate strategies that can help farmers survive the numerous risks they confront. Uncertainty about prices, yields, Government policies, and foreign markets means that risk management plays an important role in many farm business decisions. Government programs addressing farm risk management have played a larger role in U.S. farm policy in recent years; in crop year 2013, producers enrolled more than 295 million acres in the Federal crop insurance program, and Government insurance subsidies exceeded $7 billion.

Farmers make decisions in a risky, ever changing environment. The consequences of their decisions are generally not known when the decisions are made, and outcomes may be better or worse than expected. Variability of prices and yields are major sources of risk in agriculture. Changes in technology, legal and social concerns, and the human factor itself also contribute to the risky environment for farmers. Risky situations of concern are typically those in which 1) there is a high possibility of adverse consequences and/or 2) the adverse consequences, should they occur, would cause significant disruptions.

Farmers and other business people generally do not get into risky situations unless there is a probability of making money. Higher profits are typically associated with higher risks. It is to their advantage that these risky but potentially profitable situations be managed as carefully as possible. Effective risk management involves anticipating possible difficulties and planning to reduce their consequences, not just reacting to unfavorable events after they occur. The two primary aspects of risk management are: 1) anticipating that an unfavorable event may occur and acting to reduce the probability of its occurrence and 2) taking actions which will reduce the adverse consequences should the unfavorable event occurs.

**Objectives:**

1. To study the concept and need for risk in management in agriculture.
2. To find out the risk faced by farmers in production and marketing of goods.
3. To understand the strategies adopted by farmers for facing the risk.

**Importance of Study:**

Traditional agriculture was a 'way of life' for our farmers is now becoming a 'business proposition'. Along with the adoption of new technology in farming, the problem faced by the farmer's fare also increasing. There are problem of soil and water management, natural hazards, technical know-how, marketing, finance, pests and diseases and so on. In finding the solution for these problems, Agriculture insurance is be applied. An important ray of hope in this complex scenario of agribusiness is that new generation are more educated, young and energetic have taken up to this enterprise. About 75% of the population is dependent directly or indirectly on the agriculture sector. Today it is not only a seen as mean of solving food problem within country, but also as a foreign exchange earner. In several countries Agricultural insurance is an Integrated Risk management mechanism managed by public and private enterprises. They have approached in an integrated manner for risk management. In future, India too, agriculture insurance is destined to play an important role in managing the risk of the agriculture sector, whose contributes to the growth of the economy is substantial.

**Research Methodology:**

Descriptive research methodology is carried out in this paper. It is mainly based on the secondary data collected from various sources. We have also used some primary data which is collected by telephonic talk and interviews of the farmers, entrepreneurs. Different research articles reports have been reviewed to make this study more relevant.

**Concept and need of Risk Management:**

Risk Management is "A systematic way of protecting the concern's resources and income against losses so that the aims of the business can be achieved without interruption". Risk Management is increasingly recognized as being concerned with both positive and negative aspects of risk. Risk management is a central part of any organization's strategic Management. It is the process whereby organizations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities. In the safety field, it is generally recognized that consequences are only negative and therefore the management of safety risk is focused on prevention and mitigation of harm. In the insurance parlance, the Risk Management is a tool identifying business opportunities Humans have always sought to achieve security and reduce uncertainty. Risk lies at all levels of human and big irony-technology has reduced loss frequencies but loss severities have increased leading to greater risk. Risk is universal. Individuals, business and government must all cope with it by design or default. Risk is often confused with uncertainty. While risk involves an element of uncertainty, situation is uncertain if decision maker does not have enough information to assign probabilities to possible outcomes. Risk and uncertainty are related in that uncertainty to risk. When an event has outcomes lacking in predictability it is uncertain. Risk management is attempting to identify and then manage threats that could severely impact or bring down the organization. Generally, this involves reviewing operations of the organization, identifying potential threats to the organization and the likelihood of their occurrence, and then taking appropriate actions to address the most likely threats. Traditionally, risk management was thought of as mostly a matter of the right insurance. Insurance coverage usually came in rather standard packages, so people tended to not take risk management seriously. However, this impression of risk management has changed dramatically. With the recent increase in rules and regulations, employee-related lawsuits and reliance on key resources, risk management is becoming a management practice that is every bit as important as financial or facilities management.

**Risks Faced by Farmers**

As you think about managing risk to stabilize farm income, there are five basic sources of agricultural risk that you should address: Production, marketing, financial, legal, and human resource risks. Various tools and strategies can be used to manage each of these risks.

Sources of risk in agriculture are classified into *business risk* and *financial risk.* Business risks can be classified further into a) production or yield risk, b) marketing or price risk, c) institution, policy, and legal risk, d) human or personal risk, and e) technological risk. On the other hand, financial risk occurs when farmers borrow to finance farm activities as farmers often face variations in interest rates on borrowed funds, inadequacy of cash flow for debt payments and changes in credit terms and conditions.

**1) Production Risks**: Production risks relate to the possibility that your yield or output levels will be lower than projected. Major sources of production risks arise from adverse weather conditions such as drought, freezes, or excessive rainfall at harvest or planting. Production risks may also result from damage due to insect pests and disease despite control measures employed, and from failure of equipment and machinery such as an irrigation pump.

**TABLE: 1 Land Utilization Pattern In Shimoga District: (in hectare)**

| Sl.No | Particulars | 2010-11 | 2014-15 |
|---|---|---|---|
| 1. | Geographical Area | 847784 | 847784 |
| 2. | Are sown | 267814 | 264077 |
| 3. | Forest | 276855 | 276855 |
| 4. | Follow land | 34302 | 33857 |
| 5. | Trees and Grover's | 26868 | 26868 |
| 6. | Permanent pasture | 163493 | 163463 |
| 7. | Cultivatable waste | 16311 | 16311 |

Sources: Shimoga district at glance

**TABLE: 2 Mode of Irrigation (IN HECTARE)**

| Year | Canals | Tank | Wells | Tube wells | Lift irrigation | Other source |
|---|---|---|---|---|---|---|
| 2010-11 | 45240 | 53621 | 4932 | 30182 | 3975 | 5255 |
| 2014-15 | 44350 | 53570 | 6277 | 30807 | 3921 | 4714 |

Sources: Shimoga district at glance

**TABLE: 3 Utilization of Fertilizer (IN TONES)**

| Year | Nitrogen | Phosphor | Potash | Total |
|---|---|---|---|---|
| 2010-11 | 36862 | 30037 | 11802 | 78701 |
| 2014-15 | 31992 | 15018 | 11877 | 58887s |

Sources: Shimoga district at glance

**TABLE: 4 Area Under Major Crops (IN HECTARE)**

| Year | Paddy | Jower | Maize | Ragi |
|---|---|---|---|---|
| 2010-11 | 125490 | 256 | 48459 | 1029 |
| 2014-15 | 120629 | 100 | 47254 | 501 |

Sources: Shimoga district at glance

2**) Marketing Risks:-** Marketing risks relate to the possibility that you will lose the market for your products or that the price received will be less than expected. Lower sales and prices due to increased numbers of competing growers or changing consumer preferences are common sources of marketing risk. Marketing risks can also arise from loss of market access due to a wholesale buyer or processor relocating or closing, or if a product fails to meet market standards or packaging requirements.

**TABLE: 5**

**Adequacy of Storage Facility of Marketing Functionaries**

| Sl.No | Opinion | Direct Dealer | Dealer | Sub Dealer | Total |
|---|---|---|---|---|---|
| 1. | Yes | 02 (100.00) | 25 (75.76) | 04 (26.67) | 31 (62.0) |
| 2. | Not bad | --- | 08 (24.24) | 05 (33.33) | 13 (26.0) |
| 3. | No | --- | --- | 06 (40.0) | 06 (12.0) |
| | Total | 02 (100) | 33 (100) | 15 (100) | 50 (100) |

Source: Data collected through field survey.

Note: Figures in parentheses indicate column percentage.

From table No. 2 It is observed that 62 per cent of the respondents have opinioned that godown facilities are good as they make use of their own gowdon. 26 per cent respondents have opined that godown facilities are not bad. 40 per cent of sub dealers have no godown facility as they make use of dealers godown or friends, etc. It shows that direct dealers are satisfied with storage facility.

**TABLE: 6**

**Adequacy of transport facilities of marketing functionaries**

| Sl.No | Opinion | Direct dealer | Dealer | Sub Dealer | Total |
|---|---|---|---|---|---|
| 1. | Yes | 02 (100.00) | 26 (78.79) | 02 (13.33) | 30 (60.00) |
| 2. | Not Bad | --- | 07 (21.21) | 09 (60.00) | 16 (32.00) |
| 3. | No | --- | -- | 04 (26.67) | 04 (5.00) |
| | Total | 02 (100.00) | 33 (100.00) | 15 (100.00) | 50 (100.00) |

Sources: Data collected through field survey.

Note: Figures in parentheses indicate column percentage.

**3) Financial Risks:**

Financial risks relate to not having sufficient cash to meet expected obligations, generating lower than expected profits, and losing equity in the farm. Sources of financial risk commonly result from production and marketing risks described earlier. In addition, financial risks may also be caused by increased input costs, higher interest rates, excessive borrowing, higher cash demand for family needs, lack of adequate cash or credit reserves, and unfavorable changes in exchange rates.

**TABLE: 7**

**Classification of Marketing Functionaries According To the Problems of Raising Finance**

| Sl.No | Problem of raising Finance | Direct dealer | Dealer | Sub Dealer | Total |
|---|---|---|---|---|---|
| 1. | Government policy | --- | --- | --- | --- |
| 2. | Lack of co-operation from banks | 01 (50.0) | 05 (15.15) | 06 (40.00) | 12 ( 24.00) |
| 3. | High rate of Interest on Borrowing | 01 (50.0) | 05 (15.15) | 03 (20.00) | 09 (18.00) |
| 4. | Security problem | --- | 06 (18.18) | 01 (6.67) | 07 (14.00) |
| 5. | More than one problem | --- | 17 (51.52 ) | 05 (33.33) | 22 (44.00) |
| | Total | 02 (100.00) | 33 (100.00) | 15 (100.00) | 50 (100.00) |

Sources: Data collected through field survey.

Note: Figures in parentheses indicate column percentage.

It is noted that Table 3 shows that 80 per cent of the marketing functionaries raise finance from different source like own capital, loan from Banks, co-operative vanks, money lenders, etc., whereas 20 percent exclusively do their business on their own finance. The survey also revealed that the functionaries pay interest in the range of 15 percent to 19 percent on their borrowings from banks and 24 percent to 36 percent interest on loans taken from money lenders.

**4) Legal and Environmental Risks:** In part, legal risks relate to fulfilling business agreements and contracts. Failure to meet these agreements often carry a high cost. Another major source of legal risk is tort liability - causing injury to another person or property due to negligence legal risk is closely related to environmental liability and concerns about water quality, erosion and pesticide use..

**5) Human Resource Management Risks:**

Human resource risks pertain to risks associated with individuals and their relationships to each other: These relationships include those with family members, as well as farm employees and customers. Key sources of human resource risk arise from one of the "three D's" — divorce, death, or disability. The impact of any of these events can be devastating to a farm. Human resource risks also include the negative impacts arising from a lack of people management skills and poor communications.

Managing risk starts with identifying the most crucial risks you face; understanding the potential impacts and likelihood of undesirable outcomes; and, identifying and taking possible steps to mitigate or lessen the impacts. It's unlikely any one person understands all the areas of risk faced by a family farm. If you don't know the answer or find it difficult to initiate risk management planning on your own, get assistance from Cooperative Extension, USDA, attorneys, bankers, insurance agents, and other service providers.

**Risk Management strategies**

Farmers have many options for managing the risks they face, and most producers use a combination of strategies and tools. Some strategies deal with only one kind of risk, while others address multiple risks. Following are some of the more widely used strategies.

- Enterprise diversification assumes incomes from different crops and livestock activities do not move up and down in perfect correlation, so that low income from some activities would likely be offset by higher income from others.
- Financial leverage refers to the use of borrowed funds to help finance the farm business. Higher levels of debt, relative to net worth, are generally considered riskier. The optimal amount of leverage depends on several factors, including farm profitability, the cost of credit, tolerance for risk, and the degree of uncertainty in income.
- Vertical integration generally decreases risk associated with the quantity and quality of inputs or outputs because the vertically integrated firm retains ownership or control of a commodity across two or more phases of production and/or marketing.
- Contracting can reduce risk by guaranteeing prices, market outlets, or other terms of exchange in advance. Contracts that set price, quality, and amount of product to be delivered are called marketing contracts, or simply forward contracts. Contracts that prescribe production processes to be used and/or specify who provides inputs are called production contracts.
- Hedging uses futures or options contracts to reduce the risk of adverse price changes prior to an anticipated cash sale or purchase of a commodity.
- Liquidity refers to the farmer's ability to generate cash quickly and efficiently in order to meet financial obligations. Liquidity can be enhanced by holding cash, stored commodities, or other assets that can be converted to cash on short notice without incurring a major loss.
- Crop yield insurance pays indemnities to producers when yields fall below the producer's insured yield level. Coverage may be provided through private hail insurance or federally subsidized multiple peril crop insurance.
- Crop revenue insurance pays indemnities to farmers based on gross revenue shortfalls instead of just yield or price shortfalls. Several federally subsidized revenue insurance plans are available for major crops in most areas of the United States.
- Household off-farm employment or investment can provide a more certain income stream to the farm household to supplement income from the farming operation.

**References:-**


1. Narayanan H. (2006), Indian Insurance A profile, Jaico Publishing house, Mumbai. Pp 438-456.

2. Sinha Sidharth (2004), Agriculture Insurance in India: Scope for participation of private insurers, Economic and Political Weekly, June 19, 2004.

3. Dandekar V.M.(1985), crop Insurance in India: A Review, Economic and Political Weekly, Vol.XX, June.

4. Rustogi N.K.(1988) Crop Insurance in India, B.R. Publishing co. Ltd., new Delhi

5. Parchure Rajes- Varsha Bonds& Options capital market solutions for crop insurance problems.(5th global Conference of actuaries) volume:2 managing Insurance Business: perspectives, Analytics and operations(MIB)

6. Sinha Sidharth (2005) Agriculture Insurance in India: Scope for participation of private insurers, Indian Insurance Report Series-1, Allied Publishers Pvt. Ltd New Delhi. pp 343-361.

7. Government of India (1999) National Agriculture Insurance Scheme, ministry of Agriculture, New Delhi.

8. Sommer Trieschmann Hoyat -Risk Management and Insurance (Thomson, south-western, Publication)

www.swlearning.com.

9. Rao K.N. and S.P. Kulkarni (2001) agriculture Insurance in India, IC-817, insurance Institute of India,