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Risk Management: Agriculture

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Introduction:

Risk is an important aspect of the farming business. The uncertainties inherent in weather, yields, prices, Government policies, global markets, and other factors that impact farming can cause wide swings in farm income. Risk management involves choosing among alternatives that reduce financial effects that can result from such uncertainties. In India, agricultural risks are exacerbated by a variety of factors, ranging from climate variability and change, frequent natural disasters, uncertainties in yields and prices, weak rural infrastructure, imperfect markets and lack of financial services including limited span and design of risk mitigation instruments such as credit and insurance. These factors not only endanger the farmer's livelihood and incomes but also undermine the viability of the agriculture field and its potential to become a part of the solution to the problem of endemic poverty of the farmers and the agricultural labor. The poor penetration and development of various risk management tools and strategies in the country also represent the huge opportunities for the emerging agricultural insurance and commodity markets to pull the producer from out of the poverty trap by insulating him from income shocks and by ensuring that a fair share of the price goes to the producer. **Risk management** is focused on anticipating what might not go to plan and putting in place actions to **reduce uncertainty** to a tolerable level. Risk can be perceived either positively (upside opportunities) or negatively (downside threats). A risk is the potential of a situation or event to impact on the achievement of specific objectives. Working with the risk owner, the project professional ensures that risks are clearly identified before moving on to the risk analysis step of the risk management process.

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Meaning of Risk:

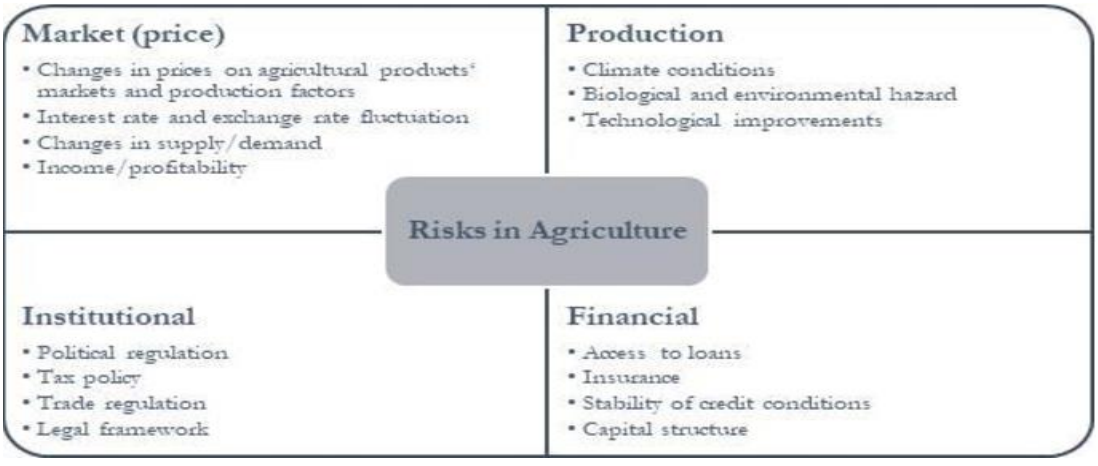
- A situation involving exposure to danger.
- Risk is a combination of hazards.
- Risk is the possibility of loss.

The agricultural sector is exposed to a variety of risks which occur with high frequency. These include climate and weather risks, natural catastrophes pest and diseases, which cause highly variable production outcomes. Production risks are exacerbated by price risks, credit risks, technological risks and institutional risks. Risk management in agriculture ranges from informal mechanism like avoidance of highly risky crops, diversification across crops and across income sources to formal mechanisms like agriculture insurance, minimum support price system and futures markets.

Advantages of Classification of Risk

- By grouping risks, they can be managed in common by use of similar controls.
- Categorization forces managers to be more proactive for managing risks.
- Categorization helps manager to use their past experience applied to one category before.
- Provided framework that can be used to define who is responsible and consistent risk reporting.
- It can help identify which risks are interrelated.

Types of Risks in Agriculture are explained as below:



1. Production Risk

Agriculture is often characterized by high variability of production outcomes or production risk. Unlike most other entrepreneurs, farmers are not able to predict with

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certainty the amount of output that the production process will yield due to external factors such as weather, pests, and diseases. Droughts lead to economic losses resulting from low agricultural production, loss of animal wealth, reduced nutrition and loss of health of workers.

2. Price or Market Risk

The market risks result from fluctuations in the prices of inputs and outputs, outside competition, changing supply and demand, market imperfections, changing consumer preferences etc. Sale of farm produce under distress may take place due to lack of post harvest processing and lack of infrastructure storage facilities

3. Financial and Credit Risk

Many agricultural production cycles stretch over long periods of time, and farmers must anticipate expenses that they will only be able to recuperate once the product is marketed. This leads to potential cash flow problems exacerbated by lack of access to insurance services, credit and the high cost of borrowing.

4. Institutional Risk

Important source of uncertainty for farmers is institutional risk, generated by unexpected changes in regulations that influence farmers' activities. Changes in regulations, financial services, level of price or income support 86 payments and subsidies can significantly alter the profitability of farming activities.

5. Human or Personal Risk

This risk refers to factors such as problems with human health or personal relationships that can affect the agriculture. Agricultural households, as any other economic entrepreneur, are exposed to personal risks affecting the life and the wellbeing of people

6. Legal/Policy Risk

The legal and policy risk arises due to changes in the government policies related to agriculture, failure to comply with contractual obligations, etc

7. Resource Risk

Supply of spurious seeds and plant protection chemicals pose a great risk to the producers. Failure of crops due to sub-standard seed or spurious plant protection chemicals causes drain of resources of the farmer. It inflicts considerable damage on the psyche of the farmer sometimes leading to suicides by the farmers

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8. Health Risks

The health risks arises due to sickness or injury to the farmer, low labor productivity due to poor labor management, family disputes, accidental death,

9. Stagnation in Production of Major Crops

Production of some of the major staple food crops like rice and wheat has been stagnating for quite some time. This is a situation which is worrying our agricultural scientists, planners and policy makers. Major challenges and risk faced by Indian agriculture

10. High Cost of Farm Inputs

Over the years rates of farm inputs have increased manifold. Farm inputs include fertilizers, insecticides, pesticides, HYV seeds, farm labor cost etc. Such an increase puts low and medium land holding farmers at a disadvantage.

11. Soil Exhaustion

On one hand green revolution has played a positive role in reducing hunger from India. On the other hand it has also led to negative consequences. One of which is Soil exhaustion. Soil exhaustion means loss of nutrients in the soil from farming

12. Depletion of Fresh Ground Water

The second major negative consequence of green revolution is depletion of fresh ground water. You would remember that areas where green revolution was successful, it was due to the use of chemical fertilizers and irrigation. Most of the irrigation in dry areas of Punjab, Haryana and Western Uttar Pradesh was carried out by excessive use of ground water.

13. Adverse Impact of Global Climatic Change

Among various challenges, global climatic change is the recent one. It has been predicted that its impact on agriculture would be immense. Since, 70% of Indian population is engaged in agricultural activities, you can imagine the consequences. It is predicted that due to climate change, temperature would increase from 2°C to 3°C, there would be increase in sea level, more intense cyclones, unpredictable rainfall etc These changes would adversely affect the production of rice and wheat.

14. Impact of Globalization:

You can see the effect of globalization on the farm sector in India. All developing countries have been affected by it. The most evident effect is the squeeze on farmer's income and the threat to the viability of cultivation in India. This is due to the rising input costs and

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falling output prices. This reflects the combination of reduced subsidy and protection to farmers.

15. Farmer's Suicide:

Every suicide has a multiple of causes. But when you have nearly 2,00,000 of them, it makes sense to seek broad common factors within that group. The suicides appear concentrated in regions of high commercialization of agriculture and very high peasant debt. Cash crop farmers seemed far more vulnerable to suicide than those growing food crops. Yet the basic underlying causes of the crisis remained untouched. Commercialization of the countryside along with massive decline in investment in agriculture was the beginning of the decline. Withdrawal of bank credit at a time of soaring input prices and the crash in farm incomes compounded the problems.

Risk Management: Risk management is concerned with identifying risks and drawing up plans to minimize their effect on a project.

• A risk is a probability that some adverse circumstance will occur

• Project risks affect schedule or resources

• Product risks affect the quality or performance of the software being developed

• Business risks affect the organizing, developing or procuring the software

Risk Management Process:

- Risk identification
- Analyze the Risk
- Evaluate or Rank the Risk
- Treat the Risk
- Monitor and Review the Risk

1. Identify the Risks:

The Five main risk categories of risk are hazard risks, such as fires or injuries; operational risks, including turnover and supplier failure; financial risks, such as economic recession; and strategic risks, which include new competitors and brand reputation. Being able to identify what types of risk you have is vital to the risk management process. Organizations can identify their risk through experience and internal history, consulting with an industry professional and external research.

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2. Analyze the Risk:

In many cases, problem resolution involves identifying the problem and then finding an appropriate solution. However, before figuring out how best to handle risks, a business should locate the cause of the risks by asking the question, "What caused such a risk and how could it influence the business?" Some questions to consider when analyzing risk include:

What can go wrong?

How will it affect the organization?

What can be done?

If something happens, how will the organization pay for it?

3. Evaluate or Rank the Risk:

Risks need to be ranked and prioritized from most severe to lowest level of risk. Risks that can be catastrophic to the organization are ranked highest while risks that simply just cause an inconvenience are ranked lower on the list. By knowing the level of the risk and the impact it will have on the organization, management knows how best to intervene if an when a series of risks occur.

4. Treat the Risk:

Now that your organization has identified the risks and ranked them in order of high to low, each risk needs to be eliminated or contained as much as possible. This is usually done by connecting with the experts in each department or field to which the risk belongs to. Meeting with individuals to discuss the risk and solution is key for understanding how to eliminate or contain as well as treat the risk should it happen.

5. Monitor and Review the Risk:

Unfortunately, there are some risks that cannot be completely eliminated and risk management isn't something that has a start and finish, or end result. If an organization gradually formalizes its risk management process and develops a risk culture, it will become more resilient and adaptable in the face of change. The organization, its environment, and its risks are constantly changing, so the process should be consistently revisited.

Importance of Risk Management

• Risk affects all aspects of your project i.e. your budget, your schedule, your scope, the agreed level of quality, and so on.

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• Increase probability of positive event.

• Reduce the occurrence of negative event.

Conclusion:

Agriculture is directly linked to many sectors, it is importance for the rural areas and it is undergoing a process of marketing economy with substantial changes in the social, economical, financial, structural, productive and supply set-up as is the case with all other sectors of the economy.