

# Risk Management: Overview of CORE Analysis

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There are numerous sources of risk that business owner/operators battle against to keep their businesses operating successfully. These owner/operators use multiple and diverse management strategies to combat their business risks. Some strategies include using contracts, budgeting, insurance, and training to minimize potential losses from uncertain events. Risk management is a straightforward process of identifying and planning, but this process can become very complicated because of the many options available. Therefore, using a framework or an outline to guide you through the maze of possible outcomes greatly aids the strategic planning process. CORE Risk Analysis provides a guide for an owner/operator to examine their management strategies.

This framework utilizes the acronym CORE. CORE stands for Calculate, Optimize, Reduce, Evaluate. CORE highlights the importance of understanding risk issues and their potential impacts on a business. The framework also engages owner/operators in the exercise of examining the cost/benefit tradeoffs that exist from competing strategies. The foundation of CORE is for producers to realize the basic, fundamental importance of identifying and managing risk in their operations. The framework presents a logical process for producers to consider when examining ways to manage their business risks. CORE illustrates a four-step process:

- **C**alculate your business risk.
- **O**ptimize opportunities to address business perils.

- **R**educe risky events using management tools/practices.
- **E**valuate strategy/strategies with a risk management team.

Each step of the framework is a straightforward analysis. In addition, each step requires specific action for the owner/operator to move to the next step. Business risks, according to USDA's Risk Management Agency, are broken down into five different areas: production, marketing, financial, legal and human resources. For additional reading on RMA risk management areas, refer to the USDA publication, *Introduction to Risk Management, Understanding Agricultural Risks*.

This fact sheet discusses in detail each of the steps in the CORE framework. The framework begins by examining the specific perils that businesses face. Once the adverse events/outcomes have been identified, an analysis of the costs and benefits of possible options is assessed. The framework focuses on examining the tradeoffs between various risk management activities. Listing each strategy that addresses a specific peril allows for a cost/benefit analysis of specific actions. Doing nothing can be a strategy, but a producer should realize the implications (risk exposure) of that particular strategy. For risk management, the optimal strategy is not always clear-cut. Many dynamics are involved, making strategic risk planning an exercise that is unique to a specific producer and/or business. These dynamics include risk attitude, a business's risk

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capacity, cost of implementing strategy, level of risk protection, probability of an outcome and the severity of an outcome. Among these listed factors, the main dynamic at play is the producer's understanding and attitude toward risks. Therefore, the next section discusses risk attitudes and definitions.

## Definitions of Risk

**Risk** is defined as the chance of loss or an unfavorable outcome associated with an event or action. Therefore, **risk management** refers to managing your business against the chance of loss from an unfavorable event. An individual's **risk attitude or preference** is simply how one views risks. This attitude has the biggest influence on a business's risk management strategy. Risk attitudes determine how an owner/operator views specific risks and the potential effects of those risks on their business. Individual attitudes toward risk are generally grouped into three different categories according to an owner/operator's risk preference:

**Risk Averse** – These are the most cautious risk takers. They avoid risk whenever possible, but are willing to accept some risks. These individuals usually miss out on profit opportunities by resisting or slowly adapting to innovative products or practices.

**Risk Neutral** – They are realistic and try to minimize risk while pursuing profit opportunities. They recognize that there is some level of risk in almost every situation and understand the need to accept some level of risk.

**Risk Loving** – Risk excites and challenges these individuals. They enjoy the "adventure" without taking risk-reducing precautions. They pursue the profit opportunities that risky ventures present because they want to benefit from the risk-return tradeoffs.

The important thing to note is that there is no right or wrong answer, only different risk perceptions. These differences in perception make risk management a very individualistic exercise. An owner/operator should spend some time to identify which category they fall into regarding their risk management personality. Understanding your risk attitude provides insight into an owner/operator's risk tolerance level as well as why selections of specific risk strategies occur.

A good understanding of a business's risk capacity is also needed. **Risk capacity** refers to the ability of a business to survive an adverse event. In other words, "how big of a hit can your business withstand?" The risk capacity of a business can be measured by cash reserves, business equity, credit reserves, lines of credit and alternative income

sources. The important thing is to understand your business's risk capacity. This will assist in determining the level of risk that you are willing and, more importantly, able to accept.

Other dynamics concerning risk management involve the probability and severity of potential events creating losses. **Probability** is the likelihood or odds that an event will occur. The higher the probability the more likely it is that the outcome will occur. Probabilities have a value ranging from zero (0) to one (1) but are usually expressed as a percentage. **Severity** refers to the magnitude of the potential loss. Many risks are so small in magnitude that one either ignores their potential effect or accepts the potential loss without protective measures (self-insurance).

Before we get into the CORE framework discussions, a few risk management concepts should be noted. Risk management involves comparing the cost and benefits of reducing specific risks and selecting a specific risk management tool. The following concepts (Partnership for Small Farm Risks, 2002) describe the reality of the business environment in which owner/operators maneuver:

- (1) Profits are never certain. Producers operate in an uncertain (risky) environment where there is a risk-return tradeoff. Producers must choose between risky alternatives, but higher risk activities should represent increased profit opportunities.
- (2) Using a risk-reducing alternative usually increases costs and/or reduces potential returns, but the action should lower the uncertainty of those returns. Risk protection comes at a cost, but the value of the added protection usually results in a worthwhile investment.
- (3) If two alternatives cost the same and produce the same returns, good management seeks the alternative with the least risk.

## Calculate Your Business Risk (Step 1)

The first step in this process involves identifying the different events that affect or have the potential to affect your business. Because producers face so many risks, they may wonder where to start in terms of identifying their business risks. Two different ways to examine risky events is by the probability of the event or by the severity of the potential loss. Both of these approaches allow you to examine and categorize risky events. One operator may only be interested in events that are likely to occur (high probability) whereas another may only be concerned with severe or catastrophic events. Because the likelihood and impact of an adverse event combine to create the total "risk" exposure, one must consider risk across

both of those dimensions, as illustrated below. This approach allows one to rank possible outcomes, creating a pecking order of potential events to address. Using this approach, high probability and high severity events would obviously rise to the top of the risk areas that need addressing. This process of ranking risks is very subjective and individualistic, but the importance lies in applying the framework to meet your business objectives and/or your acceptable risk exposure levels.

**Spectrum of Risky Events**

|             |        | Severity/Consequence                               |                   |                     |
|-------------|--------|----------------------------------------------------|-------------------|---------------------|
|             |        | Low                                                | Medium            | High                |
| Probability | Low    |                                                    | planning          | *high priority area |
|             | Medium | planning                                           | adequate planning |                     |
|             | High   | *high priority area<br>(*requires risk management) |                   |                     |

## Optimize Opportunities to Address Specific Perils (Step 2)

The next step involves identifying the different tools or practices that are available to protect against each listed risky event that you wish to address. Sometimes, the optimal choice for some events is self-insurance. This occurs because some events are so small in either probability and/or severity that the business's risk capacity can absorb the shock. Other times, there are no risk protecting options available or the cost of risk protection is so great that it is optimal to maintain the risk exposure. The management process involves identifying tools that address specific risk. A partial listing of risk management tools available categorized by RMA's risk areas follows:

- **Production** – irrigation, good production records, crop insurance, enterprise diversification and variety selection.
- **Marketing** – marketing plans, production/marketing contracts, futures markets and storage/processing equipment.
- **Financial** – adequate record keeping, leasing vs. purchase, lines of credit and maintain adequate cash/equity reserves.
- **Legal** – property and liability insurance, professional assistance and specialized training.
- **Human Resources** – life/health insurance, employee training, safety training and contracting for custom work.

## Reduce the Adverse Effects of Specific Risks (Step 3)

Once the tools have been identified, examine the level of protection that each alternative provides. Risk management involves calculating the costs and benefits of a specific strategy and comparing the competing approaches. Selecting a risk management strategy usually involves some cost, but the added risk reducing benefit should outweigh the implementation costs. Careful analysis of the potential impact of each alternative is necessary to understand which strategy best fits your needs.

Cost-benefit analysis offers an easy way to evaluate competing strategies. The analysis, as the name implies, details the corresponding costs and benefits associated with a specific course of action. The brief outline below allows for a quick cost-benefit analysis:

- (1) Estimate costs of implementing each alternative.
- (2) Estimate the benefits associated with each alternative.
- (3) Examine how each alternative ranks by your selection criteria(s), i.e. cost/returns, risk protection level, etc.

From this exercise, two important questions need to be answered: (a) which alternative is more efficient based on estimated costs and returns, and (b) does the strategy provide adequate risk protection for your business.

## Evaluate the Effectiveness of Strategy (Step 4)

The final step before implementing a risk strategy is complete evaluation. The evaluation process involves consulting with a risk management team to gather feedback and advice on planned strategies. This team should be utilized throughout the process of developing your risk plan. An owner/operator should not feel like they are alone in the risk management process. Agricultural producers wear many hats including production expert, human resource manager, financial expert, chemical applicator, marketer, etc. Producers should seek the advice of University and private business professionals to assist in the development and initialization of their risk management plan. The following list identifies some professionals to incorporate into your risk management team along with their areas of expertise:

- University and Extension personnel – recommended production and management practices, training opportunities

- Government agency personnel – government programs directed at business development and assistance in the areas of start-up (business plans, marketing plans, etc.), financing including grant funding opportunities, risk management, cost sharing programs, regulations and certification requirements
- Financial planner – record keeping, establishing business goals, business plan development, insurance recommendations
- Accountant – record keeping, tax issues, estate planning
- Lawyer – liability exposure for business, personal injury and environmental regulations, business structure, estate planning, asset transfer
- Insurance agent – available insurance products and liability issues

The risk management process is complicated and the stakes are too high for owner/operators to not rely on the advice of “experts” throughout the process. It is important for owner/operators to identify key “advisors” to assist with risk management throughout the process of setting business goals and objectives, identifying effective risk management tools and successfully implementing strategies.

## Summary

CORE risk analysis is a four-step framework for analyzing business risk. The framework focuses on identifying specific risks, understanding the

cost/benefit tradeoffs between alternative courses of action, and selecting the optimal alternative for your business needs. The final step which is ongoing requires using expert assistant to evaluate the effectiveness of your risk plan. The framework is as follows:

- **C**alculate your business risks.
- **O**ptimize opportunities to address business perils.
- **R**educe risky events using management tools/practices.
- **E**valuate the strategy with a risk management team.

Although this report does not discuss the process of setting goals, the framework should be used in the context of meeting specific business objectives. The framework serves as a guide formalizing the mental process that owner/operators undertake to address their business risk management needs.

## Sources

The Partnership for Small Farm Risks: A Risk Management Education Project for Small and Socially Disadvantaged Farmers. *Risk Management Education*. 2002.

USDA, Risk Management Agency. *Introduction to Risk Management, Understanding Agricultural Risks: Production, Marketing, Financial, Legal, Human Resources*. Revised December 1997.