



# Getting Started in Ag: Understanding Risk in Agriculture

## What is Risk?

Risk is generally defined as future events with unknown or uncertain outcomes. These outcomes matter; otherwise, they could be safely ignored. Newcomers to production agriculture may not fully realize the extent of risk involved in their operations. In production agriculture, risk comes from various sources, including weather and natural disasters, national events that impact commodity prices, and market unpredictability. Others, such as human, legal and marketing factors, may be less obvious. Developing a comprehensive, thoughtful and long-term risk management plan is crucial for success in any business. However, before creating a plan, it is essential to first understand the diverse aspects of risk.

*Understanding Risk in Agriculture* is a course developed by professionals at [RightRisk.org](http://RightRisk.org) aimed at helping new and beginning producers better understand risk management and create simple, effective strategies to manage uncertainty in their operations. Often, risk management solutions do not need to be complex to be effective; it is far more important to be aware of what strategies work for your specific operation.

## Uncertainty and Variability

Almost nothing is certain and, instead, uncertainty should be expected. Risk can be thought of as uncertainty that matters. Variability, on the other hand, refers to alternative or different outcomes in the future due to the effects of chance. Variability is what most managers mean when referring to risk.

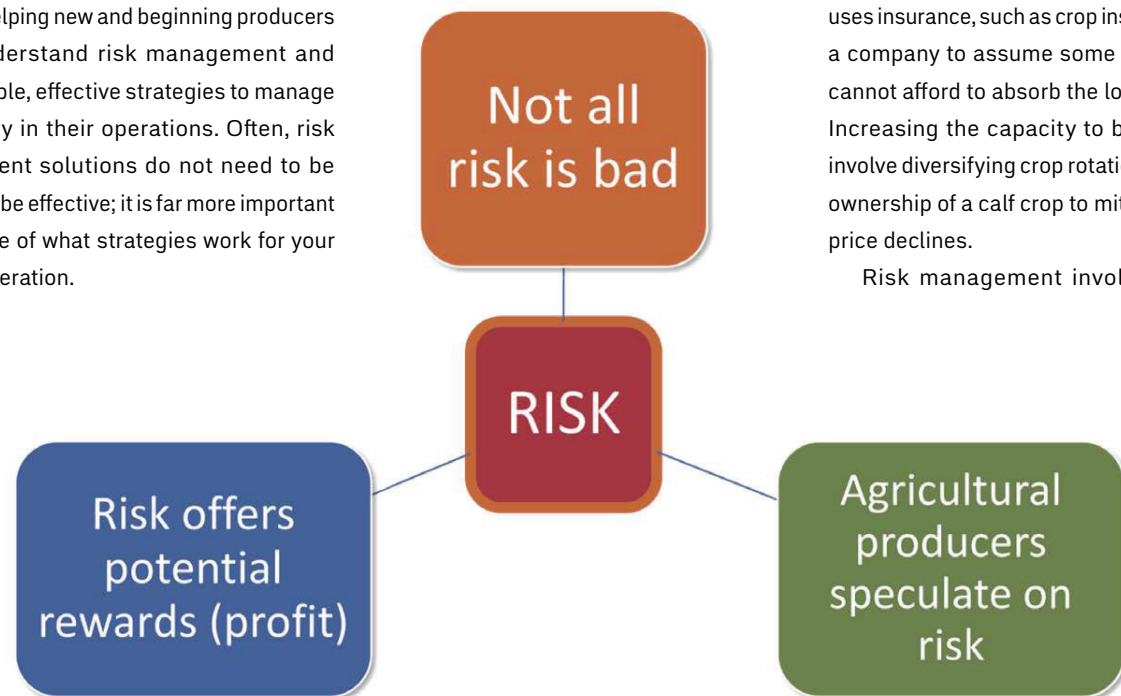
Variability may be reduced, in some cases, through a change in the underlying system. For example, switching from conventional to reduced tillage can conserve soil moisture and increase crop yields, thereby reducing variability in production. While the risk remains, it is reduced. On the other hand, reducing uncertainty involves studying and measuring as many potential outcomes as possible to develop effective management strategies.

Risk becomes significant in a production setting when objectives are unmet, cannot be met, or when control is lost. It's important to remember that not all risk is bad; greater risk in an operation can lead to greater rewards. Without risk, the potential for profit decreases substantially.

The challenge lies in the fact that most people prefer certainty over uncertainty. Risk management strategies range from avoiding risk entirely, which severely limits opportunities for profitable outcomes, to accepting risk. Several strategies lie between these extremes: reducing risk, transferring risk and increasing the capacity to bear risk.

For example, reducing risk might involve changing the calving season to a more favorable weather period, thereby reducing potential death loss. Transferring risk occurs when a producer uses insurance, such as crop insurance, or pays a company to assume some risk when they cannot afford to absorb the loss themselves. Increasing the capacity to bear risk might involve diversifying crop rotations or retaining ownership of a calf crop to mitigate seasonal price declines.

Risk management involves choosing



between different strategies to address potential negative outcomes. The goal is to maximize profit while minimizing risk—while also accounting for the risk tolerance of the people involved. For maximum effectiveness, risk management should begin at the strategic level of the business and extend to individual enterprise decisions. Strategic risk management choices should set the direction for farm and ranch management decisions, as well as allocate the necessary resources to achieve those goals.

## Tools for Risk Analysis

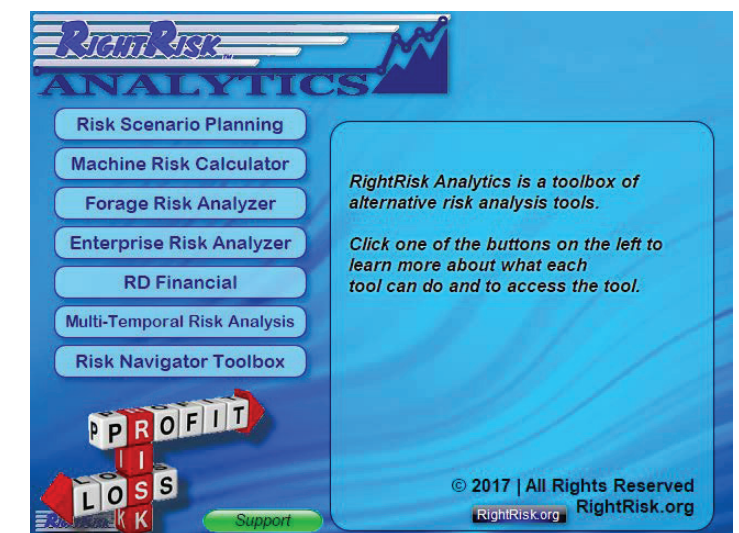
Risk analysis involves understanding the risks present in a farm or ranch business. A key part of risk analysis is identifying the threats to a business or enterprise, focusing on those that occur most frequently, have the highest likelihood, or are expected to happen first. Next, the consequences associated with the sources of risk are examined, followed by an evaluation of existing risk management strategies. The *Understanding Risk in Agriculture* course outlines several tools for conducting risk analysis.

As discussed in the course, influence diagrams illustrate choices, decisions, consequences and their interrelationships, typically represented by arrows. This type of diagram helps decision-makers identify the initial choice, the possible decisions or remedies that follow, and the expected consequences. A probability impact grid displays potential events of concern, along with their expected likelihood and impact, rated as high, medium

or low. This exercise helps managers prioritize their attention and resources effectively.

Decision trees use a quantitative approach to organize information and estimate the threat posed by different events. A potential decision is listed, followed by alternative outcomes and their estimated probabilities. Similarly, a payoff matrix presents the same information in a tabular format, detailing event descriptions, probabilities and corresponding payoffs for each combination in rows.

The *Understanding Risk in Agriculture* course also highlights numerous risk analysis and management tools included in the RightRisk Analytics toolbox. This set of tools was developed to help producers, especially those new to the industry or just starting out, reduce the underlying variability in their businesses through effective risk management planning. These tools cover a range of topics, from partial and enterprise budgeting to financial analysis and long-term whole-farm budgeting. Each tool includes a detailed user guide with examples designed to provide new and perhaps different ways to examine risk for better-informed decisions in agricultural operations.



## FOR MORE INFORMATION

Agricultural producers today are navigating an unprecedented landscape of uncertainty. Staying informed about risk management strategies is more crucial than ever for new or beginning farmers and ranchers, regardless of the size or scope of their operation. For comprehensive resources on managing risk, visit [RightRisk.org](http://RightRisk.org). The site offers a wealth of information on risk management topics, including practical tools and educational courses. To access the *Understanding Risk in Agriculture* e-book, risk influence calculator and other useful tools, navigate to [RightRisk.org](http://RightRisk.org) and select the Courses tab.