

R I G H T R I S K N E W S

Cost/Benefit Analysis: Making Good Risk Management Decisions

A decision can be described as the outcome of a process that selects a preferred option or a course of action. In fact, decision making is one of the basic cognitive processes of human behaviors by which a preferred option or a course of action is chosen from among a set of alternatives based on a criteria. Viewed from another perspective, decisions are the process by which strategy is implemented. They are the basic units of choice exercised by management to move the business forward.

Several points worth noting are raised in the previous description:

1. First, where a decision is about moving forward, this implies that the direction forward has previously been selected. In other words, management has chosen a direction by some process of weighing and considering available alternatives. Of course, the act of choosing direction is also a decision.
2. Second, from the first point, not all decisions are equal in nature. Some are of a higher, strategic nature, while others are concerned with day-to-day carrying-out of the strategy or implementation.
3. Third, all types of decisions involve taking management action after considering the alternatives, how it will be carried out, and when it will be completed.

Evaluating a specific decision is best done by considering how it does or does not contribute to the success of the strategy it is intended to support. Obviously, some decisions are not made with conscious consideration of which strategy they may be tied to.

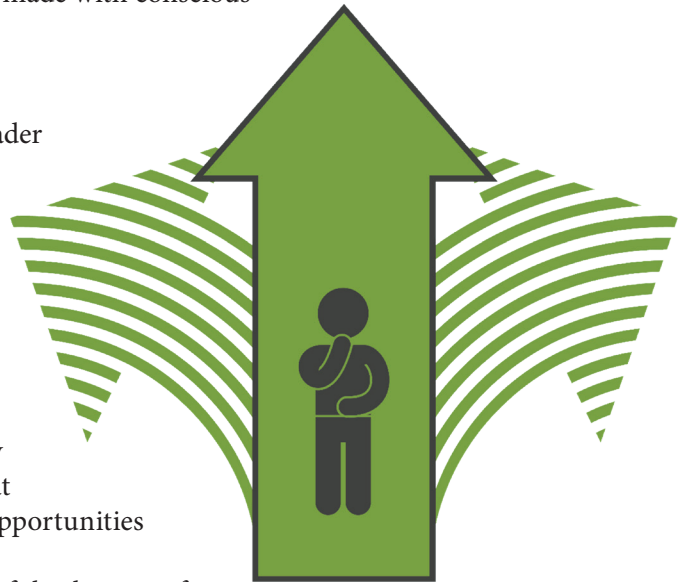
Recognizing Strategic Decisions

Strategic decisions might be classified as a sub-set of broader business decisions that are focused on selecting where the business should go in the future. Deciding direction (goals) and selecting the strategy for how forward progress is to be made are strategic decisions. A decision becomes strategic when the choice being made will guide future decisions.

This approach comes from a formal view of strategic management and its corresponding five steps: 1. Select goals; 2. Identify external opportunities and threats; 3. Identify internal strengths and weaknesses; 4. Select strategies that build on strengths, correct weaknesses, take advantage of opportunities and counteract threats; and 5. Implement the strategy.

Another view is that strategic planning and a purposeful selection of strategies leading to a prescribed set of decisions and supporting actions on the part of management is too constraining for managing a business in today's environment. Evidence cited in support of this view include: 1. There is often a mismatch between the timing of strategy selection and planning and the more dynamic process of decision making by management; 2. The process of reviewing the strategy selected for the business is fraught with problems, not the least of which is an incentive for politics to enter into the formula used for selection; and 3. Most emphasis in the overall process is placed on the budget and operating plans, rather than on strategy selection.

The old adage still applies, however, "When you don't know where you are going, any road will get you there." In order to make progress in moving the business forward, the direction forward must be defined. This suggests that



management has carefully considered the goals they would like the business to pursue. For these goals to remain relevant, they must be reconsidered on some periodic basis. That basis may be annually or at periods longer than one year. In addition, this process should involve all the individuals who have a vested interest in the business achieving those goals.

Cost-Benefit Analysis

Cost-Benefit analysis (CBA) is a powerful decision-making approach used to evaluate the economic feasibility of projects, policies, or practices by comparing the costs and benefits associated with them. CBA is particularly useful in agriculture for assessing the potential impacts of various risks, such as evaluating enhanced production practices, pest treatment options, and strategies for addressing market volatility. By assigning monetary values to both the negative and positive outcomes of a decision, CBA helps farmers, policymakers, and stakeholders determine whether a particular course of action is worth pursuing.

One benefit of using CBA in agricultural risk analysis lies in its structured approach to quantifying uncertainties. Agriculture is inherently risky due to its dependence on factors like weather, pests, and market prices, which can all fluctuate unpredictably. CBA enables decision-makers to weigh these uncertainties by assigning probabilities to different outcomes and calculating the expected costs and benefits for each scenario. This allows for a comprehensive evaluation of the potential risks and rewards, providing a clear economic rationale for or against a particular decision.

Moreover, CBA can incorporate a variety of risk mitigation strategies into the analysis. For example, the potential benefits of investing in pest-resistant crops can be compared against the costs of traditional crop varieties under different tillage scenarios. This capability allows for a more informed decision-making process that takes into account the potential for adverse events and the effectiveness of different strategies to mitigate those risks.

Application of Cost-Benefit Analysis

A practical example of CBA in agricultural risk analysis can be seen when evaluating the decision to adopt crop insurance. Crop insurance is a common risk management tool used by farmers to protect against losses due to natural disasters, such as floods or droughts. Using CBA, a farmer can analyze the subsidized premium cost of purchasing insurance against the expected benefits of receiving a payout in the event of a crop failure.

To illustrate, consider a farmer in a region prone to drought. By conducting a CBA, the farmer can estimate the likelihood of a drought occurring based on historical weather data and predict the potential financial losses without insurance. The cost of the subsidized insurance premium is then compared to the expected benefits, which include the financial security provided by the insurance indemnity payment. If the analysis shows that the expected benefits of purchasing the subsidized insurance outweigh their total costs, a producer may be better off buying the insurance as a risk mitigation strategy.



Beyond Crop Insurance

Beyond crop insurance, CBA can be applied to several other areas of agricultural risk analysis. Three additional applications include:

- Evaluating the adoption of new agricultural technologies: Farmers can use CBA to assess whether the benefits of investing in new equipment or technologies outweigh the costs, considering factors such as increased efficiency and reduced labor requirements.
- Assessing the feasibility of diversification strategies: CBA can help determine the economic viability of diversifying crops or livestock, which can reduce dependency on a single source of income and mitigate risks associated with market fluctuations.
- Analyzing the impact of environmental conservation practices: Farmers and policymakers can use CBA to evaluate the cost-effectiveness of implementing conservation practices, such as water-saving irrigation systems or sustainable land management techniques, in reducing environmental risks and improving long-term productivity.

By applying CBA across these diverse scenarios, producers can better navigate the complexities of risk management and evaluation of alternatives, leading to more resilient and sustainable agricultural businesses.

A partial budget is a familiar form of cost-benefit analysis, Figure 1. The net effect of any potential change or decision for a business can be evaluated by breaking the effects into the potential costs (added costs and reduced returns) and the potential benefits (added returns and reduced costs). Totaling the estimated dollar value of all of these projected impacts provides an estimated net benefit from the change. The *Risk Scenario Planning* tool available at RightRisk.org can help calculate the net benefit, as well as forecast the potential range of outcomes by including estimates of variability or risk in the calculations.

In short, cost-benefit analysis is a vital tool for managing agricultural risks by providing a clear, economic framework for decision-making. It enables producers to evaluate the potential outcomes of different risk management strategies and can help managers make informed choices that align with their business goals.

Figure 1. Partial Budget Framework - *Risk Scenario Planning* Tool, RightRisk Analytics.



References

Hewlett, J.P., J. Parsons, J. Tranel, and B. Taylor. “Enterprise Risk Analysis.” an eBook to accompany the online RightRisk education module: Enterprise Risk Analysis. August 2017. <https://RightRisk.org>. Accessed 12 August, 2024.

Hewlett, J.P., J. Parsons, J. Tranel, and B. Taylor. “Evaluating Risk Strategies.” an eBook to accompany the online RightRisk education module: Evaluating Risk Strategies. December 2018. <https://RightRisk.org>. Accessed 12 August, 2024.

Hewlett, J.P. and J. Parsons. “Risk Scenario Planning Tool.” RightRisk electronic risk analysis tool housed at <https://RightRisk.org>. August 2013. Accessed 12 August, 2024.

Hewlett, J.P., J. Parsons, J. Tranel, and B. Taylor. “Understanding Risk in Agriculture.” An eBook to accompany the online RightRisk education module: Understanding Risk in Agriculture. December 2019. <https://RightRisk.org>. Accessed 12 August, 2024.

~ OTHER RIGHTRISK NEWS ~

**NEWS RELEASE - JULY 17 | RIGHTRISK
AG CREDIT: Farm Lending Activity Grows Swiftly**

LENDING AT COMMERCIAL BANKS associated directly with farm production strengthened in the second quarter. According to the Survey of Terms of Lending to Farmers, the volume of new operating loans increased 20 percent from a year ago, which followed a year-over-year increase of 12 percent last quarter. The rise in lending activity was primarily attributed to larger loan sizes at small and mid-sized lenders and was accompanied by a slight increase in average interest rates and slightly longer maturities . . .



**NEWS RELEASE - JULY 22 | RIGHTRISK
Federal Reserve Beige Book Summary on the Ag Sector**

ECONOMIC ACTIVITY maintained a slight to modest pace of growth in a majority of Districts this reporting cycle. However, while seven Districts reported some level of increase in activity, five noted flat or declining activity—three more than in the prior reporting period. Wages continued to grow at a modest to moderate pace in most Districts, while prices were generally reported to have risen modestly. Household spending was little changed this period according to most District banks. Agricultural conditions varied in tandem with sporadic droughts across the nation . . .

For more see: [RightRisk.org\News](https://RightRisk.org/News)

HIGHLIGHTED PUBLICATION: *AG HELP WANTED - UPDATE* POLICIES AND EMPLOYEE HANDBOOKS

Business owners and managers should have a set of workplace policies, procedures, and expectations in place, whether their businesses have 1 employee or 500 employees. These policies and other conditions of employment may be outlined either formally or informally. Many agricultural employers have found written personnel policies helpful to guide decisions and clarify what workers and managers can expect of one another . . .



To read more or to access the publication, see:
RightRisk.org > Products > Ag Help Wanted > Updates

	<p>July 2 Social Media Post <i>Lasting Legacy Course #2</i></p>		<p>July 18 Social Media Post <i>Evaluating Round & Square Bale Systems</i></p>
	<p>July 4 Social Media Post <i>Evaluating Fertilizer Application Decisions with an Online Tool</i></p>		<p>July 23 Social Media Post <i>Management Succession: How Do We Get There From Here? RightRisk</i></p>
	<p>July 9 Social Media Post <i>Roles and Responsibilities of an Employer of Family Labor in Agriculture</i></p>		<p>July 25 Social Media Post <i>Evaluating Pasture, Rangeland, Forage – Rainfall Index Coverage</i></p>
	<p>July 11 Social Media Post <i>Forage Harvester Purchase – Machine Share Arrangements</i></p>		<p>July 30 Social Media Post <i>What are U.S. VISA Requirements for Agricultural Workers?</i></p>
	<p>July 16 Social Media Post <i>¿Cuál es la Ley de Normas Justas de Trabajo en agricultura y cómo se aplica a mí?</i></p>		

Follow us on:



Click here to see current posts:
RightRisk.org/news

Follow us on:



RightRisk helps decision-makers discover innovative and effective risk management solutions

- **Education**
- **Coaching**
- **Research**

RightRisk News is brought to you by the RightRisk Team

Contributing authors:

John Hewlett, Ranch/Farm Management Specialist - University of Wyoming, hewlett@uwyo.edu
 Jay Parsons, Risk Management Specialist - University of Nebraska-Lincoln, jparsons4@unl.edu
 Jeff Tranel, Ag and Business Management Specialist - Colorado State University, Jeffrey.Tranel@ColoState.edu

Editing and Layout: John Hewlett, hewlett@uwyo.edu

Past issues of RightRisk News are available at: RightRisk.org/News

To subscribe/unsubscribe, email information@RightRisk.org subject line "Subscribe/Unsubscribe RR News"

E-mail: information@RightRisk.org
 Web: www.RightRisk.org

How much risk is right for you and your operation?



EXTENSION
 COLORADO STATE UNIVERSITY
 EXTENSION



Extension