RightRisk™

ENTERPRISE RISK ANALYSIS

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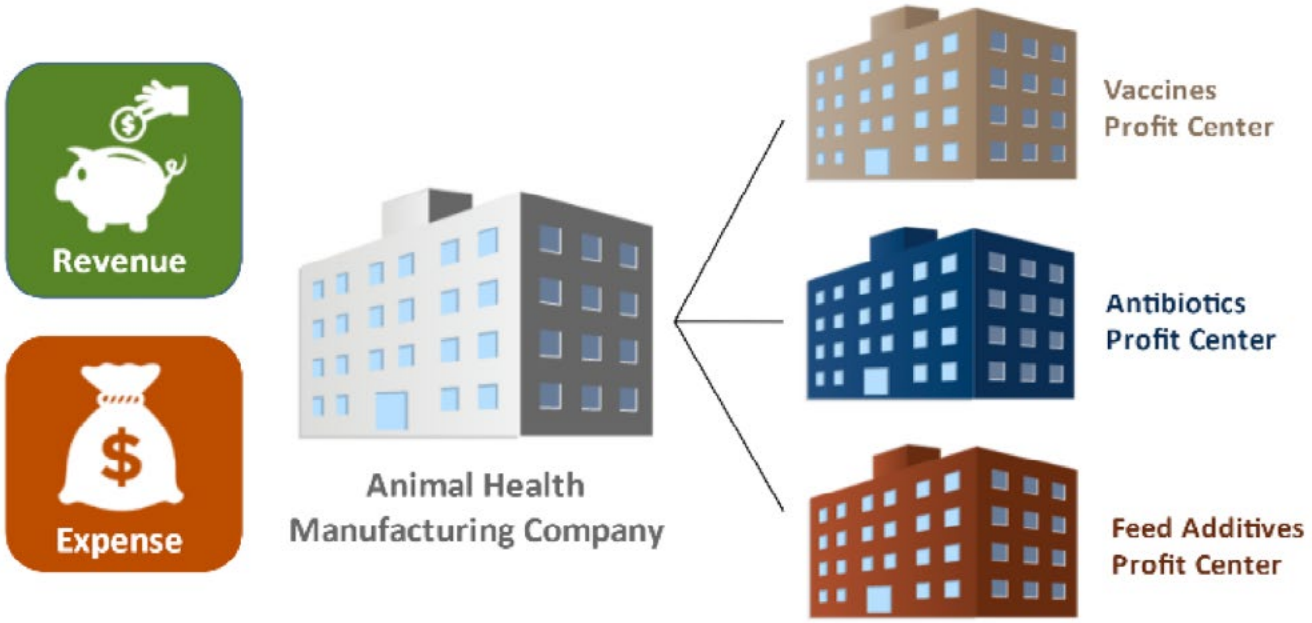
What is an Enterprise?

An **enterprise** is generally any major business activity that results in a saleable product and for which expenses and revenue can be readily calculated or assigned. Usually these activities are divided into the major categories of individual crops grown or various livestock activities. However, there are various cropping and livestock activities that may result in more than one saleable product, such as: small grain/straw, sheep/wool, double-crop corn/soybeans, etc. How these situations would be best handled, depends largely on the objectives of management and the level of control desired.

In the non-agricultural business world, enterprises are referred to as profit centers. A profit center is a segment of a business responsible for both revenues and costs. Often a division of a company is thought of as a profit center because it has control over its revenues, costs, and the resulting profits.



Generally, enterprise costs and returns may be characterized by collecting the receipts, operating costs, and ownership costs.

Receipts

Enterprise receipts would include the product(s) expected to be sold over the course of a year. This requires an assignment of expected prices for products, an estimate of the quantity of product sold and the total receipts per unit of production. All products should be included, minor as well as major. For example, if straw is put up, it should be included as well as the grain.

Enterprise receipts are most commonly cash receipts. However, there are many cases where the income for an enterprise might include non-cash receipts. Just a few examples include products delivered, but not yet paid for by a customer, farm-produced feed fed to livestock that have not yet been sold, and a growing crop that has not yet been sold. Care should be used to accurately account for all enterprise receipts for the year under consideration. Non-cash income might also include products transferred from another enterprise, such as hay transferred from the forage enterprise to the livestock operation.

Operating Costs (cash costs)

Enterprise operating costs would include all input costs. In general, documenting the operation costs would include details on the quantity of operating input used, the unit of measure, the quantity used per production unit, the input price per unit purchased, and the total cost. Typically, operating inputs would include such items as seed, fertilizer, fuel, chemicals, feed, supplements, vaccines, etc.

Operating costs are generally cash costs; however, it is easy to think of examples of non-cash operating costs as well. Examples might include seed or fertilizer in inventory from a past production year used in the production of this year's crop, feed in inventory used to feed this year's livestock, fuel left from last year to power equipment in the production of the current year's crop or livestock products. Similar to income, a non-cash expense may be a product transferred out of one enterprise to another. Care should be used to accurately account for all enterprise operating costs for the year under consideration.

Ownership Costs (non-cash costs)

Enterprise ownership or fixed costs are those costs that are incurred even if the products in this enterprise are not produced. These types of costs would normally include machinery, buildings, improvements, and land ownership costs. For machinery, buildings, and improvements, these costs include depreciation, interest on investment, taxes, and insurance. For owned land, ownership costs include interest on investment and taxes. If charges for maintenance of irrigation facilities or other improvements on the land are required, these costs would also be included for owned land. For livestock, purchased breeding livestock would include ownership costs similar to machinery, buildings, and improvements. However, for raised breeding livestock, depreciation would not be included.

Enterprise ownership costs are most commonly non-cash in nature. However, there are several types of ownership costs that are cash costs. Examples would include interest on a machinery loan or mortgage, maintenance costs for buildings or improvements, or property taxes.
Again, care should be used to accurately account for all enterprise ownership costs for the year under consideration.

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What is Risk?

Under the classical description of risk, risk is described as a special case of uncertainty: where the outcomes and probabilities are known. In popular usage, risk is generally understood to mean future events for which the outcomes are uncertain.

Not all uncertainty is created equal, however. We might describe risk as a case where the uncertainty matters; if the outcome did not matter there would be no risk. Risk does not always imply a negative or bad outcome. Uncertain future events may result in good, bad, or neutral outcomes. The probabilities or the likelihood of one or more outcomes may also be unknown.

Chapter 2: What is Risk?

In his book, *Risk Savvy: How to Make Good Decisions*, Gerd Geigerenzer suggests most world societies lack risk literacy and citizens are generally not risk savvy. Although risk is part of nearly everyone's daily life, few are trained to evaluate risk alternatives in any formal way. In addition, information provided by many trusted sources (doctors, lawyers, politicians) is often inaccurate, incomplete, or incorrectly portrayed because these experts are unclear what the practical implications of risk are.

To compound this further, when faced with risk alternatives, people tend to think that complex problems require complex solutions. With risk, the opposite is true. In addition, information provided by many trusted sources (doctors, lawyers, politicians) is often inaccurate, incomplete, or incorrectly portrayed because these experts are unclear what might be the practical implications of risk.

Sources of Risk

Traditionally, the sources of risk to agricultural businesses include five distinct sources: **market risk, production risk, institutional risk, human risk** and **financial risk**.

a. Marketing or Price Risk

Marketing and price risks include the prices of inputs or outputs that change after you commit to a plan of action. Sources of market risk include: total national production, government programs, demand (including quality issues), and seasonal effects.

b. Production Risk

Production Risks might be described as uncontrollable events such as weather, pests or disease that make yields, quality, or outputs unpredictable. Sources of production risk would include: weather, pests, disease, genetic variations, and timing of operations.

c. Institutional or Legal Risk

Institutional risks include government or other institutional rules, regulations and policies which effect profitability through costs or returns. Sources of institutional risk include: changes in social attitudes, changing land use regulations, and the possibility of lawsuits for accidents or misuse of chemicals.

d. Human Risk

Human risk arises from the character, health or behavior of the people involved in your business. Sources of human risk include: health issues, divorce, the possibility of losing a key employee, or the moral or the mental state of the work force.

e. Financial Risk

Financial risk is the extra risk that is attached to borrowing outside capital to make the business function. It may be thought of as the added variability resulting from debt financing. Sources of financial risk might include: the possibility of losing a lease; production, prices or casualty losses; unstable financial partners; or anything that would negatively affect cash flow and the ability to meet debt obligations.

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What is Risk Management?

Most of us would probably prefer certainty to uncertainty and risk in many aspects of life. However, almost nothing is certain and, instead, uncertainty should be expected as we look to the future. Risk management can be thought of as one or more strategies created with the goal of reducing the consequences of negative outcomes, or to increase the likelihood of positive outcomes.

Strategies for managing risk or the consequences of a negative event, should it occur, vary by source of risk and level of protection already in place. In general, the options range from avoiding the risky practice entirely (minimizing the risk) to accepting the risk (self-insuring). Between these two extremes are several possibilities for managing the risk to a more acceptable level by: reducing the risk, transferring the risk, or increasing the capacity to bear the risk.

a. Avoid the Risk

Avoiding the risk is accomplished when a manager makes an active decision to not engage in a particular practice or activity due to the level of risk that is involved.

b. Reducing the Risk

Reducing the risk can be accomplished by making the negative outcomes less likely or by reducing the consequences should they occur.

c. Transferring the Risk

Transferring the risk can be done through insurance policies, by contracting, or through other types of agreements with a third-party willing to share in the negative consequences in return for a premium paid in advance.

d. Increase Capacity to Bear the Risk

Increasing the capacity to either bear the negative consequences by holding resources in reserve or keeping options open, allowing management flexibility in the face of bad outcomes.

e. Accept the Risk

Some risks are too costly to control or the negative consequences may be too small to bother with managing. In these cases, management may choose to simply accept the risk as a cost of doing business with the idea that the business will cover the entire cost, should a negative event occur. This is sometimes also referred to as self-insuring.

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How is Risk Managed?

Risk management may be accomplished at several levels within a business. At the highest level—the strategic level—management makes decisions regarding the allocation of resources across business activities, the timing of the application of those resources, and the level of resource use. At this higher level, management also decides which enterprise activities to engage in. Put in another way, these decisions include which crops to grow, which stage to sell at, whether to diversify or vertically integrate, whether to sell direct to consumers or to contract with wholesalers. Such decisions represent "big picture" or macro-level decisions about the business and its activities.

At the next level down, decisions are made regarding how those resources will be applied within the individual profit center or enterprise. On most family farms and ranches, these decisions are made by the same individuals, so agricultural managers of smaller operations seldom stop to consider the differences in the level of management decision making.

When family operations grow to include several children placed in charge of various divisions or enterprise activities, or in the case of corporate-type operations, decision making is usually spread out across the organization. Under such a scenario, the individual in charge of managing the cropping operations, the person in charge of livestock management, or the son or daughter managing the trucking line would all represent middle managers.

Risk management decisions can be, and often are, made at both the strategic level and at the enterprise or division level of management. Obviously, management of the various risks faced by the business is best accomplished where the risk management strategies adopted are well-coordinated across all levels of management. This can represent an entirely different level of risk where coordination is not accomplished or is poorly managed.

Decisions about risk management made at the strategic level have the potential to influence the profitability and long-term sustainability of the operation to a larger degree. However, managers of agricultural businesses are often more comfortable and, therefore, more likely to implement management change at the enterprise level. This approach represents a risk management strategy in itself, where the balance of the farm or ranch is left to operate according to the more tried-and-true strategies used in the past, while adjustments are made in just a few areas in a particular year. In this way, any mistakes made, or negative consequences that result from adopting a new strategy, do not threaten the entire business, as they might if changes were made more aggressively across more than one enterprise or the entire operation.

For this reason, risk management decisions made at the enterprise level are the focus here. We will look at risk management alternatives available at the enterprise level, methods for evaluating enterprise risk management strategies, and provide several case studies to demonstrate the approach outlined.

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Risk Management Process

A good risk management process can be used and re-used on a regular basis as a part of making management decisions. It starts by establishing where you are and where you want to go. This involves describing the internal and external contexts within which you are making decisions. The diagram on the next page illustrates an appropriate risk management process.

Before an Enterprise Risk Assessment can be done, the context of the enterprise and how it operates must be established. This process consists of three steps: determining the internal context, determining the external context and defining the objectives involved.

1. Establish the Context

Internal Context

In general, the internal context is the internal environment in which the business seeks to achieve its objectives. The internal context is anything within the organization that can influence the way in which an organization will manage risk.

What resources are involved?

One point we might use to begin describing the internal context is to outline the scope of the resource base management considers could be at risk. Here resources include anything within the broad categories of land, labor, capital, and time. We might start by asking what changes or fluctuations in the resource base we are concerned about. Is it productivity, is it the quantity of the resource, or might it be the quality of production from the resource base that presents the challenges?

Another track of thinking might identify additional concerns ranging from the time and skills needed for management to properly coordinate resource production and use, management's capacity to make good decisions, or it may include monitoring and feedback systems needed to notify management of resource issues. Any or all of these factors could have an influence on the performance of the enterprise, as well as the net returns of the business as a whole.

What is my perspective on risk?

When we consider uncertainty and our beliefs about it, we realize we are influenced by any number of factors. It may help to break these factors into three broad categories: risk, attitude, and human factors.

Risk is defined as uncertainty that matters; where the consequences make a difference to those who may be impacted.

Attitude, particularly regarding risk, may be thought of as a chosen response to risk. Attitudes may be influenced by changes in perceptions about a set of alternatives, by gaining new information, or through a shift in emotions. Attitudes may change over time.

Human factors are the variations that people, individuals and groups, bring to the consideration of both risk and attitude. One person considering a set of risk alternatives and expressing a particular risk attitude may choose one alternative, while another individual with similar views may make a vastly different choice. Personal preferences, past experience, and other human factors influence our choices in many ways.

It is important to note that risk attitudes are neither right nor wrong. Different individuals can have well-reasoned arguments for the alternative choices they make. That does not mean, however, that the consequences of those choices will be the same. Risk attitudes and, therefore, our choices are influenced by a number of different factors. Those factors are usually subjective, highly personal, and often dependent on past experience with the alternatives offered.

Due to the wide variability in risk attitude between individual decision makers, three categories are often used to describe those perspectives:

- Risk averse individuals prefer to avoid risk, often willing to accept a lower return for more certainty.
- Risk loving individuals prefer the gains offered by more risky alternatives and are willing to accept less certainty for that potential gain.
- Risk neutral individuals are somewhere in between, neither worrying too much about risk nor chasing after unlikely gains.

Risk Biases

There are many sources of bias that influence our consideration of alternative decisions. Recent research by behavioral economists, neural physiologists, psychologists, sociologists and others has led to development of a set of biases.

Anchoring bias – when we rely too much on the first piece of information and do not consider newer data.

Availability heuristic – when we rely too much on the information at hand, rather than from wider sources.

Outcome bias – where we judge our choice based on the outcome rather than the choice process.

Overconfidence – where we take on more risk, overestimating our ability to handle it.

There are many other risk biases beyond the examples given here.

Risk Communication

How information is presented about expectations can bias our view of the likelihood of future events. It can be, and often is, very confusing. To effectively communicate about risk, we must first communicate what is known risk and what is uncertain. Next, we must work to understand what is being described when statistics are offered...a chance of what? Any statistics used should be presented in natural frequencies to be more easily understood by everyone involved in the discussion. Finally, where uncertainty exists, probabilities are not enough, heuristics can be helpful (and are often used). As defined here, heuristics describe a set of rules or methods that allow an individual to determine the optimal solution by using "rules of thumb", intuitive decisions or educated guesses based upon their past experience and previous knowledge.

However, not everyone involved will be equally comfortable with this approach.

Which Enterprise?

As defined earlier, an enterprise is any major business activity that results in a saleable product. One of the primary questions, when thinking about the internal context, is which enterprise or set of enterprise activities is management concerned about? For some agricultural businesses the answer to this question is more straightforward than for others. For example, a crop farm producing two or three crops, the question "Which enterprise?" likely has an obvious answer. However, for a crop/livestock operation that raises and feeds its own hay, grazes livestock on crop-aftermath, or produces forages that are fed to livestock in a feedlot, the answer may not be clear.

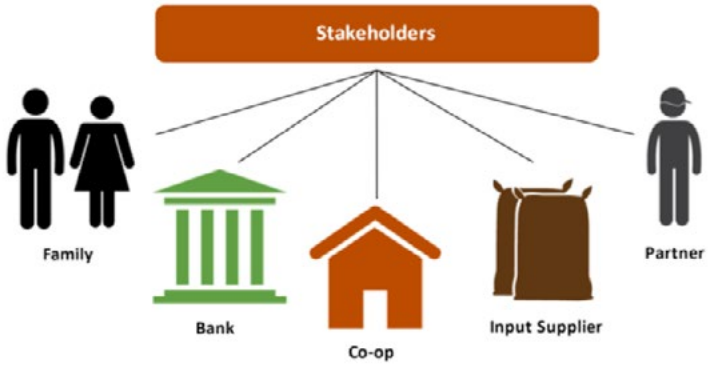
Enterprise risk management is focused at the enterprise level and the changes that management are able to make in the allocation of resources, the timing of enterprise activities, or the priority given to the enterprise. Where the internal context includes defining the focus for management attention, the question about which enterprise is not trivial. Management must decide, to the extent possible, which enterprise activity, process, function, project, product, or service in terms of time and location is in order to ensure the best chance of success for the risk management strategy selected.

1. Establish the Context

External Context

External context is the external environment in which the farm or ranch seeks to achieve its objectives. Understanding the external context is important to ensure that external stakeholders and their concerns are considered when developing risk criteria. This context is based on the perspective of the overall business, but with specific details about legal and regulatory requirements, stakeholder perceptions, and other aspects of risks specific to the scope of the risk management process.

Here, stakeholders refer to individuals or entities outside the management circle that potentially share in the success of the business.



These can include off-farm children or other family members that may have a legal interest in the operation. Other stakeholders might include a bank, a local co-op, a feed dealership, a farm input supplier, a partner, or possibly a neighbor from whom inputs are purchased or resources are traded without cash changing hands.

Objectives involved - What are the risk criteria?

One significant aspect of enterprise risk analysis not yet addressed is how management defines success for the enterprise. Some managers are content to simply sell all their production within the current operating year. Others look for synergies across all enterprises in their operation. Still others take a more long-term or strategic view and consider how success for one enterprise today can contribute to the success of another down the road or to the success of the entire operation.

These last two approaches imply that management has taken the time and effort to develop strategic goals for the enterprise (and the operation). These types of goals can serve as a useful yardstick for measuring progress year-by-year. Without them success is not so clear.

Objectives involved - What are the risk criteria? (cont.)

Where management is focused on the performance of an individual enterprise, it is more difficult to evaluate the success of one strategy or another. For example, calf weaning weights can be increased by a number of management strategies. Higher weaning weights clearly result in higher revenues and that may look like success. However, higher revenues do not necessarily result in higher net incomes. If higher costs are incurred in reaching those higher weaning weights, then net incomes may be even lower than when following an alternative, lower-cost approach. A similar case can be made for most crops. The question the manager must answer is, "How do we define success for this enterprise?"

Without a clear understanding of what success looks like for a particular management team or for a specific enterprise, it is difficult to compare management strategies. Most comparisons will consider resources used versus benefits gained or the financial tradeoffs. However, other measures are also available. Which measure is most appropriate for the situation at hand will depend on management's perspective on risk and the strategies selected for managing risk across the business as a whole.

2. *Risk Assessment (within an enterprise)*

Enterprise risk is variability or uncertainty that arises at the enterprise level of management. Here we are focused on the implications of decisions made for a single enterprise or commodity, rather than the whole farm or ranch. Many, if not most, day-to-day management decisions are about the details of enterprise management. These cover a broad range of choices from timing of production activities, to the quantity of inputs used, to the choice of approach to follow.

Risk Identification

Identify risk sources

Enterprise risk likely originates from one or more of the five sources of risk presented earlier. It may be helpful to consider those sources and how they relate to enterprise uncertainty.

Enterprise Production Risk - uncontrollable variation in enterprise output or output quality due to factors such as weather, pests or disease. Many, if not most, enterprise-level decisions are focused on managing this source of risk. The timing of cultural practices such as vaccinations, pasture rotation, crop cultivations, applications of crop amendments, pesticides, herbicides or other inputs are all enterprise-level production decisions. These management choices, coupled with the selection of the materials to apply, the frequency of application, and the quantity to use all have implications for how well the enterprise performs. These decisions can also be a factor in the quality of production, access to certain markets (for example organic), as well as commodity characteristics such as shelf life, color, storability and other attributes.

Another dimension of enterprise production risk is the allocation of resources. For example, the application of irrigation water, pasture resources for livestock, or when to begin feeding in the winter. These choices include not only aspects of timing and the quantity of input to use, but also the frequency of use. Enterprise production risk also includes innovation and applications or adoption of new technologies. These changes are occurring rapidly and cover everything from enhanced monitoring and guidance systems for crop operations, to increased mechanization for livestock enterprises.

Controls for production risk could include: selecting low production risk enterprises, using low-risk production practices, diversification, maintaining flexibility and extra capacity, utilizing land over a wide-spread area, and crop insurance.

Enterprise Marketing or Price Risk - prices of inputs or outputs that change after you commit to a plan of action. Clearly, changes in price can bring about a change in the net income for an enterprise. This could include the price received for the commodity being produced due to changes in market conditions, changes in the quantity or quality of the commodity delivered, or changes in other factors such as transportation costs, dockage, or delivery charges associated with marketing the commodity. Changes in the prices paid for production inputs will also result in variability in net income for the enterprise.

Controls for market risk include: forward pricing or contracting, diversified market timing, diversified production, selecting low price risk enterprises, obtaining market outlook, reports (information), negotiated lease agreements, and crop insurance.

Enterprise Institutional Risks - rules, regulations and policies which effect profitability through increased costs, reduced returns, or both. Certain enterprises are more vulnerable to institutional risk than others. Commodities produced for direct-sale or direct-delivery to consumers face a much higher standard for quality and visual appeal than those that do not. On the other hand, commodities produced, even by traditional methods, face increasing regulation and changes in local policies across much of agriculture. Whether these changes come about due to shifting tastes and preferences on the part of consumers, increased accountability demanded by local policy boards, or through changes in national regulations, the outcome is the same – increased management required for the commodity under production. This often results in increased production costs and reduced enterprise net income.

Controls for institutional risk include: maintaining a liability insurance program, or keeping informed of new regulations and interpretations of the law.

Enterprise Human Risk – variability in enterprise production due to inconsistencies in character, health or behavior of the people involved. Most obviously, this points first to any labor resources that are involved in the production of the commodity. Irregular performance or following an approach that produces inconsistent results creates enterprise human risk.

Inconsistencies can also originate with middle managers or management at other levels as well. Decision makers who do not follow a consistent approach with workers or are not diligent in their own efforts, can also produce variable enterprise production.

Controls for human risk include: a backup management plan, a plan to deal with the possible loss of a key employee, maintaining a health and life insurance program, establishing and maintaining an estate plan, or a good employee benefit package.

Enterprise Financial Risk - risk associated with borrowing outside capital to make the enterprise function. Not all enterprises require outside capital. Those that do have higher levels of this type of risk. In addition, enterprises that require higher levels of operating inputs result in products that sell more directly to consumers, or have higher prices, and generally have higher enterprise financial risk. This type of risk also arises from management choices about the timing of operating inputs used, the timing of product marketing, as well as the overall cash flow needs of the enterprise through the production cycle.

Controls for financial risk might include: maintaining a financial cushion, practicing solid land leasing strategies, incorporating all or part of your operation, or maintaining up-to-date financial information.

Describe level of control

The focus of risk identification is to generate a list of risks based on those events that might enhance, prevent, degrade or delay the success of the enterprise. It is also important to identify the risks associated with not pursuing an opportunity within the enterprise. Comprehensive identification is critical, because a risk that is not identified at this stage will not be included in further analysis. Identification should include risks whether or not their source is under control of the organization.

The business may have direct control over a given source of risk or a specific aspect of a risk but may have no effective controls available for other risks it faces. Management should carefully evaluate the level of control it has available before engaging in extensive risk analysis.

Another dimension is whether the level of control is sufficient to reduce or mitigate the risk to the desired level. In many cases, higher levels of risk reduction are available, but the cost of the control does not outweigh the expected benefits. Management should determine, where possible, if the controls available can be reasonably expected to reduce the risk from current levels to those outlined by the risk criteria at a reasonable cost before completing further risk analysis.

Risk Analysis

Risk analysis is about developing an understanding of the risk. Risk analysis can be undertaken with varying degrees of detail, depending on the risk, the purpose of the analysis, and the information, data and resources available. Management decisions about the quantity, quality, and timing of resource use and management action are enterprise risk management decisions. The methods used for selecting the actions are the techniques for enterprise risk management. In general, the manager will consider several aspects of the decision before making the choice to complete further analysis:

Identify threats, describe consequences

The manager will first carefully consider the source of risk that is the greatest threat to the success of the enterprise. Threats, in this case, represent potential consequences if a bad event were to occur. The greatest threat may be the one with the greatest consequence. It may also be the threat with the consequences that are expected to happen first in time; the most immediate consequence. One source of risk may represent several different consequences.

Evaluate likelihood of occurrence

Enterprise managers must also consider the likelihood of a consequence occurring. For example, the possibility that irrigation water supplies could fail may represent a very significant consequence for the success of a growing crop, perhaps complete crop failure. However, if irrigation water supplies have never, or only rarely, failed, then the likelihood is not very great. As a result, the magnitude of the threat is not large either.

Evaluate likelihood of occurrence (cont.)
Management should also consider the effectiveness of existing risk management strategies. This would include risk controls already in place by the business, but might also include strategies that are known to mitigate or reduce the risk of concern when applied by other operators. Where existing strategies have not reduced the risk to the level set-out by the risk criterion, is it because it is not possible to manage the risk at that level using that specific control, is the risk criterion reasonable for the source of risk, or has the strategy been properly implemented to achieve the level of control desired? Alternatively, management may decide that the current level of enterprise risk control is adequate, given the cost and expected benefits of the alternatives available.

Risk Evaluation

The purpose of risk evaluation is to assist in making decisions, based on the outcomes of risk analysis, about which risks need treatment and to prioritize treatment implementation. This step involves comparing the risk criteria with the current level of enterprise risk. In general, if the level of risk does match up with the risk criteria, then the risk should be treated.

Identify threats that warrant treatment

Clearly a detailed enterprise risk assessment would be completed only where the threatened consequences are significant, where they are judged likely to occur, or both. How does a manager decide if this approach is worth the time and effort? There are certain circumstances where the case is clear:

Repeated decisions

When a particular decision is repeated over time – in such cases, a refined response, based on careful analysis can leave the enterprise and the entire business in a better position. Examples here could include strategies for commodity marketing, choices about crop amendments or pest control, or criterion for the timing of pasture rotation. Careful consideration of the alternative strategies and the tradeoffs of associated benefits and costs can pay big dividends where the management decisions are repeated over time.

Large consequence

When a decision includes large financial consequences – investing the time and effort to minimize those financial consequences should be carefully pursued. However, the likelihood of those consequences should also be taken into account. Preparing for a terrible disaster

that is unlikely to occur could be a waste of management time. On the other hand, failing to prepare a management strategy to address drought conditions and their significant financial consequences when they are a regularly recurring event does not represent proactive risk management.

Consider threats and opportunities

Enterprise risk management is intended to assist management implement concrete actions and strategies to maximize opportunities and to control threats. For this reason, the operator should carefully consider the threats to the enterprise by source of risk. Not all threats are equal. The mismatch between the risk criteria and current level of risk may provide a clue to risks of greatest threat. In addition, a thorough evaluation of management's risk perspective (tolerance) and current levels of risk may provide further insights.

Opportunities may arise where an enterprise is managed to a new level of performance. In some cases, opportunities are not recognized for what they are when concerns about risk are the manager's primary concern. Understanding the strategies available for managing risk within an enterprise, the level of control possible, as well as how the enterprise might perform where existing barriers are removed, may offer additional opportunities not previously considered.

Describe management strategies – where the threat is judged to be great enough to justify the effort, the manager should spend time developing and evaluating alternative risk management strategies.

Where alternative strategies are available, these should be compared across several levels, including:

The **resource costs and returns**, including financial, for implementing the strategy and what the outcomes would look like should the bad event occur.

The **management effort and attention** required to keep the strategy viable in the face of changing conditions.

How quickly the strategy could be implemented following a bad event.

How effectively the strategy would address all or most of the consequences that result from a threatened bad event.

3. Treatment Implementation

Describe treatment options

Risk treatment options are not necessarily mutually exclusive or appropriate in all circumstances. The options can include the following:

- Avoiding the risk by not starting or choosing not to continue an enterprise activity that leads to the risk;
- Seeking to create or enhance a risk by starting or deciding to continue an enterprise activity;
- Removing the source of the risk;
- Changing the nature or magnitude of the likelihood;
- Changing the consequences;
- Sharing the risk with another party; and
- Choosing to bear the risk.

Selecting a level of risk treatment or a combination of more than one treatment alternative includes consideration of the risk criteria, the cost of treatment, the expected benefits of the control, and the risk perception of the individuals involved. These details should be described for any risk strategy under consideration. Management should keep in mind that adopting a strategy can itself introduce risks. In addition, some attempt should be made to monitor the treatment plan as it is implemented and, where the threat level warrants, assess the level of residual risk -- level of risk remaining after treatment has been applied.

Evaluate treatment effectiveness

Many tools exist to help managers compare management strategies. These comparisons can be made on estimated net income, measures of income variability (risk), value at risk, likelihood measures, and many others. However, few options exist to help managers evaluate alternative treatments where no records are kept, nor data collected, on the effects of the treatment. Ideally, management will develop a set of treatment goals in advance. These may include both qualitative and quantitative measures.

Qualitative

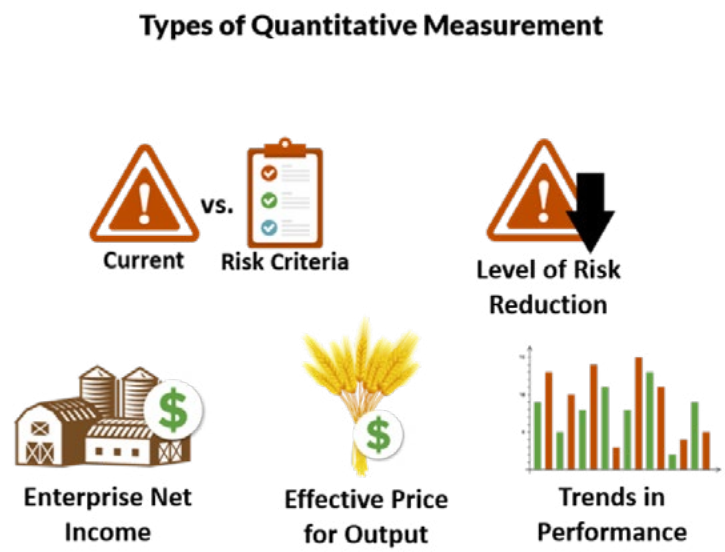
Qualitative measures of the success of a risk management strategy are less precise, by definition, than quantitative measures. However, risk has many human dimensions, not the least of which is an individual's risk tolerance. Periodically assessing the level of comfort with current risk management strategies for a specific enterprise represents one method for evaluating the effectiveness of those strategies as reported by the persons involved.

Another important consideration might be to gauge how effective those individuals feel the risk management strategies have been in mitigating the enterprise risk to the desired level. Even a bad strategy might be evaluated as having been quite effective, were no significant risk encountered while it was in force.

Evaluate treatment effectiveness (cont.)

Quantitative

Quantitative measures of the effectiveness of a risk management strategy range from measuring the current level of risk contrasted with the corresponding risk criteria to assessing the level of risk reduction after implementing a risk management strategy. Other measures, less directly related to the risk strategy itself and subject to the influence of outside factors, might include enterprise net income, effective price received for enterprise output, or trends in a particular enterprise performance measure over time.



Finally, managers should wisely consider that, with no plan in place to measure the effectiveness of the risk treatment or with no data to measure the success, the default is to look back with perfect hindsight and judge the strategy. Obviously, this is a dangerous approach. Where forces and factors move in a direction to make the production cycle for a specific enterprise end on a high note, management may well look back and decide that they should have saved the dollars invested in managing risk. This could easily spell disaster when the next production cycle plays out with those same forces and factors, causing circumstances to move in exactly the opposite direction.

Select treatment(s)

After comparing the alternatives available, management should select a treatment (management response) to address the identified threat. Where appropriate, this will also include a detailed description of the treatment, complete with action steps and assignment of individuals tasked with carrying out those actions.

The plan for responding must also be communicated to others on the management team, as well as to employees and any others who are expected to assist in implementing the treatment. Communication should be clear regarding the individual's role, the timing of any action that is expected, as well as who they should turn to if questions arise.

Implement treatment(s)

Lastly the treatment plan must be implemented. A plan for implementation should include details describing:

- The expected benefit(s) to be gained;
- The performance measures to be considered;
- A list of the persons who are responsible for implementing the plan and the various actions required;
- A list of the specific action steps that are required and the timing and schedule of their execution;
- Any resource requirements that must be taken into account, and
- The reporting and monitoring requirements, as well as who will be responsible for tracking and any strategy adjustment as the plan is carried out.

Conclusion

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The purpose of enterprise risk management is to ensure that the farm/ranch has an appropriate response to the risks facing the enterprise. Any risk management strategies adopted should help avoid ineffective and inefficient responses to risk that can prevent reasonable activities or distort resource allocation.

When properly implemented and managed, a proactive approach to enterprise risk management enables the active farm or ranch management team to:

- Encourage proactive rather than reactive management;
- Be aware of the need to identify and treat risk across the enterprise;
- Improve the timely identification of opportunities and threats;
- Comply with relevant legal and regulatory requirements;
- Improve financial reporting;
- Improve stakeholder confidence and trust;
- Establish a reliable basis for decision making and planning across the enterprise;
- Effectively allocate and use resources for risk treatment as needed;
- Improve operational effectiveness and efficiency;
- Minimize enterprise losses; and
- Improve farm/ranch resilience in the face of uncertainty.