Risk can be defined as the chance of loss or an unfavorable outcome associated with an action. Uncertainty is not knowing what will happen in the future. The greater the uncertainty, the greater the risk. For an individual farm manager, risk management involves optimizing expected returns subject to the risks involved and risk tolerance.

Agricultural producers make decisions in a risky environment every day. The consequences of their decisions are generally not known when the decisions are made. Furthermore, the outcome may be better or worse than expected. The two situations that most concern agriculture producers are: 1) is there a high probability of adverse consequences, and 2) would those adverse consequences significantly disrupt the business?

Risk is what makes it possible to make a profit. If there was no risk, there would be no return to the ability to successfully manage it. For each decision there is a risk-return trade-off. Anytime there is a possibility of loss (risk), there should also be an opportunity for profit. Growers must decide between different alternatives with various levels of risk. Those alternatives with minimum risk may generate little profit. Those alternatives with high risk may generate the greatest possible return but may carry more risk than the producer will wish to bear. The preferred and optimal choice must balance potential for profit and the risk of loss. It all comes down to management, and there are no easy answers.

This handbook is designed to improve the risk management skills of American farmers and ranchers. There is a broad array of established risk management tools ready to be used and new tools are always being developed. By learning about and using these tools, crop and livestock producers can build the confidence needed to deal with risk and exciting opportunities of the future.
Steps in Risk Management Planning

IDENTIFY RISKS

The first step in the process of managing risk is identifying and classifying the prospective risks. The five primary sources of risk are: Production, Marketing, Financial, Legal and Human.

PRODUCTION RISK
Agricultural production implies an expected outcome or yield. Variability in those outcomes poses risks to your ability to achieve financial goals. Any production related activity or event that has a range of possible outcomes is a production risk. The major sources of production risks are weather, climate changes, pests, diseases, technology, genetics, machinery efficiency, and the quality of inputs. Fire, wind, theft, and other casualties are also sources of production risk.

MARKETING RISK
Marketing is that part of a farm business that transforms production activities into financial success. Agriculture operates in a global market. Unanticipated forces anywhere in the world, such as weather or government action, can lead to dramatic changes in output and input prices. When these forces are understood, they can become important considerations for the skilled marketer. Marketing risk is any market related activity or event that leads to the variability of prices farmers receive for their products or pay for production inputs. Access to markets is also a marketing risk.

FINANCIAL RISK
Financial risk encompasses those risks that threaten the financial health of the business and has four basic components:

1) The cost and availability of capital;
2) The ability to meet cash flow needs in a timely manner;
3) The ability to maintain and grow equity;
4) The ability to absorb short-term financial shocks.
Cash flows are especially important because of the variety of on-going obligations such as cash input costs, cash lease payments, tax payments, debt repayment, and family living expenses.

**LEGAL RISK**

Many of the day-to-day activities of all farmers involve commitments that have legal implications. Understanding these issues can lead to better risk management decisions. Legal issues intersect with other risk areas. For example, acquiring an operating loan has legal implications if not repaid in the specified manner. Production activities involving the use of pesticides have legal implications if appropriate safety precautions are not taken. Marketing of agricultural products can involve contract law. Human issues associated with agriculture also have legal implications, ranging from employer/employee rules and regulations, to inheritance laws. The legal issues most commonly associated with agriculture fall into five broad categories:

1) *Contractual arrangements;*
2) *Business organization;*
3) *Laws and regulations;*
4) *Tort liability; and,*
5) *Public policy and attitudes.*

**HUMAN RISK**

People are both a source of business risk and an important part of the strategy for dealing with risk. At its core, human risk management is the ability to keep all people who are involved in the business safe, satisfied and productive. Human risk can be summarized into four main categories:

1) *Human health and well-being;*
2) *Family and business relationships;*
3) *Employee management; and,*
4) *Transition planning.*

**MEASURE RISKS**

Probabilities are simply a way of expressing the chance of various outcomes occurring. Weather forecasts use probabilities. For example, they may indicate a 20 percent chance of rain or a 40 percent chance of snow. Some probabilities are known objectively by observation or measurement. Some probabilities must be subjectively estimated by the decision maker.
Variability of outcomes is generally associated with risk, and riskier situations typically have greater variability of outcomes. The average outcome is the most frequent or most likely if outcomes are normally distributed, but the average does not provide information about variability. The range, the highest and lowest possible values, combined with the average does provide some information about variability. However, it is difficult to make comparisons of variability between agricultural enterprises or prices.

The probabilities of outcomes translate into the financial impact of those various possible outcomes. For example, the probability of a specific crop yield will result in a specific net income. Measuring risks includes an assessment of the probabilities of the possible outcomes and the impact of each outcome.

### ASSESS RISK BEARING CAPACITY

Risk management strategies are also affected by an individual's capacity or ability to bear (or to take) risk. Financially, risk bearing capacity is directly related to the solvency and liquidity of one's financial position.

Risk bearing ability is also affected by cash flow requirements. This includes the obligations for cash costs, taxes, loan repayment, and family living expenses that must be met each year. The higher these obligations are as a percentage of total cash flow, the less able the business is to assume risk. The best source of historical production and marketing information is the records maintained for the business. The records may be supplemented and complemented by information from outside sources. But there is no substitute for actual historical data.

### EVALUATE RISK TOLERANCE OR PREFERENCES

People may be categorized into one of three broad types of risk tolerance. Risk averse producers are the most cautious risk takers. They are willing to give up some income to some level of avoid risk. They may value safety, stability, or financial survival more than an opportunity for higher profits.

Risk neutral producers understand they must take some chances to get ahead, but recognize that there are degrees of risk in every situation. Before making a decision or taking action they gather information and analyze the odds and seek to maximize income. Risk preferring individuals enjoy risk as challenging and exciting and look for the chance to take risks. Some producers may be in this category with respect to their marketing plans, even though they may not consciously plan to take on market risk. They may enjoy the
adventure of playing the market. Pure speculators are typically in this category.

5 SET RISK MANAGEMENT GOALS
A meaningful goal is specific, measurable, attainable, challenging but realistic, time specific, written, and performance based. If one achieves all conditions of a specific measurable goal, confidence increases and satisfaction results. If a measurable goal is not attained, objective analysis can occur and adjustments can be made to improve the likelihood of success.

Care should be taken to set goals over areas where one has as much control as possible. Nothing is as discouraging and counterproductive to goal setting as failing to achieve a goal for reasons beyond your control. If goals are set on performance or skills to be acquired, then control over achievement is maintained.

There are beneficial reasons to set goals:

1) To reflect the values, interests, resources and capabilities of everyone involved in the business;
2) To provide a basis for all business and family decisions;
3) To set priorities for the allocation of scarce resources; and,
4) To measure progress.
IDENTIFY EFFECTIVE RISK MANAGEMENT TOOLS
Because of the multiple sources of risk, comprehensive strategies that integrate several responses to variability are often necessary for effective risk management. The particular combination used by an individual farmer will depend on the individual’s situation, the types of risk faced, and the risk attitudes or preferences. Some risk responses such as vaccinations, preventative maintenance, feed inventories, and irrigation act primarily to reduce the chance that an adverse event such as disease, breakdown, and drought will occur. Other responses have the effect of providing protection against adverse consequences by transferring some of the risk to someone else such as insurance and forward pricing. Producers find many different ways to implement these principal risk responses. Tools are discussed for each of the five areas of risk later in this manual.

SELECT PROFESSIONAL ASSISTANCE
Even though risk management is challenging, there are many professional resources available and farmers should not feel isolated. Extension educators and university extension specialists are trained to provide educational programs and leadership to help implement the planning process. Insurance agents, crop and livestock consultants, livestock nutritionists, marketing specialists, lenders, attorneys and others are available and well qualified to help with risk management planning, depending upon the specific need.

Many of these professionals have a stake in the farm business and have an incentive to provide objective information and feedback on alternative strategies. The regular use of a business advisory team keeps the business fine-tuned and on the cutting edge. Be judicious in selecting professional help. Ask for references and credentials as appropriate. Rely on the experience of other growers, input suppliers, implement dealers, peer groups, allied professionals, trade association recommendations, and trusted friends and mentors.

MAKE A DECISION AND IMPLEMENT THE PLAN
Possibly the most difficult aspect of any decision process is implementing the plan. Following through the steps provides the confidence and numerical measurements to implement a plan that best fits the situation.
EVALUATE THE RESULTS
Include a mechanism to collect the results of the plan, compare with the expected outcomes and make plans for adjustments, if necessary, for future decision cycles.

OVERALL RISK MANAGEMENT PLAN CHECKLIST:

☑ Have the primary sources of risk been identified and classified?

☑ Have the risk outcomes and their likelihood or probability of occurring been estimated?

☑ Has the financial capacity of the business or ability to bear risk been evaluated?

☑ Have the risk tolerances of the business operators been considered?

☑ Are risk goals written and are they specific, measurable, attainable, relevant, and timed?

☑ Have the goals been shared with everyone involved in the business?

☑ Have risk tools and strategies been identified to help manage risks which could prevent achieving established goals?

☑ Has a confident relationship been established with a team of risk management advisors, so they can help assess and manage business and personal risk exposure?
Managing Production Risk

Any production related activity or event that is uncertain is a production risk. Agricultural production implies an expected outcome or yield. Variability in outcomes from those expected creates risks to your ability to achieve financial goals.

Growers have three choices in dealing successfully with production risks.

1) *They can control or minimize risk through management practices by doing a better job of what they currently do.*

2) *They can reduce production variability by making changes such as diversifying, integrating, applying new technology, etc.*

3) *They can transfer production risk to someone else through contracting, purchasing insurance, etc.*

For decades agricultural risk was synonymous with crop production risk. Reducing variability in expected yields has been a major focus of risk management. Over time, improvements in technology and crop production practices have helped decrease agronomic risks and increase yields. For example, genetic engineering has produced new plant varieties that are disease and drought resistant; commercial fertilizers have increased yields; effective herbicides and insecticides were developed controlling weeds and insects; and, a whole host of improved production and management practices have been disseminated. Not only is yield variability still a formidable production risk, but the consolidation of agriculture is also impacting the entire agricultural production sector. These structural shifts mean that farmers are vulnerable not only to the vagaries of weather, but are also vulnerable to external economic forces that exacerbate traditional production risks.

**STRATEGIES FOR MANAGEMENT**

Farmers have three choices in dealing with production risks.
The first is to continue farming or ranching as before, but try to control or minimize risk through management practices. This includes such things as timeliness in performing operations, practicing preventative maintenance, and monitoring production activities more closely to ensure problems are detected early enough to take corrective measures.

The second choice is to reduce production variability. Generally, this means reconfiguring the operation by adding or changing enterprises through diversification or integration, and applying improved technology as appropriate. Remaining flexible is essential to being able to respond to changing economic conditions more easily. A big part of reducing production variability is to actively plan for the future and prepare a contingency plan for undesirable events.

The third alternative in managing production risk is to transfer some or all of the risk to someone else. Contracting and insurance are two effective tools to transfer risk.

CONTROL OR MINIMIZE RISK
There are numerous examples of how risk can be minimized or controlled through improved management practices. Chemical and fertilizer use can help to control or reduce the variability in production. Irrigation is very effective in minimizing the effects of low rainfall or drought. Health and nutrition programs can reduce variability in livestock production.

Timeliness of operations has a large impact on most production activities. It is often the key to success.
Practicing preventative maintenance is also a method of managing production risks by minimizing the likelihood of negative events taking place. Many risks are difficult to anticipate. The use of basic control and feedback strategies is important.

**REDUCE VARIABILITY**

**DIVERSIFICATION**

Diversification is an effective way of reducing income variability. Effective diversification occurs when low income from one enterprise is offset by satisfactory or high incomes from other enterprises. It typically reduces large year-to-year variations in income and may ensure adequate cash flow for meeting production costs, debt obligations, and family living needs. However, acquiring knowledge about an alternative business, expertise on new crop production practices, or information on equipment for a new crop may be costly. Expanding into new areas or experimenting with new enterprises will increase capital investment requirements. For instance, diversification can include different plant types, different combinations of crops and services, different end points in the same production process such as different selling sizes, or different varieties of the same plant.

Through crop diversification, growers may initiate another marketing
method, providing a way to enhance profitability. For example, direct marketing of the diversified crop to consumers is becoming more common, including farmers’ markets, roadside stands, and community-supported agriculture arrangements.

The benefits of diversifying income sources depend on the variability of returns faced by a producer. Diversification to help counter negative fluctuations in farm income can also be achieved by having several income sources, such as additional on-farm businesses, custom hire services, off-farm employment, investments or savings.

**FLEXIBILITY**

Farmers commonly attempt to maintain flexibility in the use of farm assets and operating procedures as a production response to the variability. Increasing specialization of production facilities and equipment limits flexibility among enterprises. Growers are more likely to maintain flexibility in their marketing and financial decisions than in the type and size of production activities. The costs associated with flexibility in production need to be compared with the potential benefits.

**INTEGRATION**

Vertical integration includes all of the ways that output from one stage of production is transferred to another. For example, a nursery that provides landscaping services using their own nursery stock is vertically integrated.

To a certain degree, vertical integration runs counter to the concept of specialization. The early farms of pioneer settlers were in essence totally vertically integrated. Every aspect of the production process was connected and performed on the single farm. Contemporary farms are a blend of integration and specialization. For example, a dairy farm may integrate feed production, milk production, and replacement heifer production. It may also integrate into the production and sale of finished products through direct or traditional retail markets. However, some dairy farmers may specialize to greater degree on milk production and elect to purchase all of their feed and replacement heifers. Integration depends on market opportunities, assets available, and the skills and knowledge of the managers.

**APPLY TECHNOLOGY**

There are countless opportunities to apply new technology in managing production risk on the farm. This includes the physical technology often referred to as precision agriculture. Precision agriculture takes advantage of advances in computers and mechanical engineering to make better, more efficient, machines and equipment.
Biotechnology research continues to advance on many fronts with the goal of making crop production more efficient. Scientists are developing plant varieties that can withstand environmental stresses such as drought, flood, frost, or extreme temperatures. A related area of research is adapting crops to regions where they are not normally grown because of climate, altitude, or rainfall. Biotechnology is also being used against plant pests such as weeds, insects, and diseases. Biotechnology is being used to develop diagnostic tests for a wide range of diseases and viruses.

The key to applying technology in managing risk is to do so in a way that lowers total farm risk. Sometimes new technology may increase risk, or the increased cost for the corresponding reduction in risk is prohibitive.

**TRANSFER RISK TO SOMEONE ELSE**

**CONTRACTING**

A contract is usually defined as a written or oral agreement between two or more parties involving an enforceable commitment to do or refrain from doing something. In agriculture, contracts between farmers and agribusinesses specify certain conditions associated with producing and/or marketing an agricultural product. By combining various market functions, contracting generally reduces participants’ exposure to risk. In addition to specifying certain quality requirements, contracts also can specify price, quantities to be produced, and services to be provided.

Growers enter into contracts for various reasons, including income stability, improved efficiency, market security, and access to capital. Retailers enter into contracts to control input supplies, improve responses to consumer demand, and expand and diversify operations. All of these reasons reflect efforts to bring a more uniform product to market.

Production contracts can take many forms, depending upon the commodities being contracted and the economic needs of the parties entering into the contract. Generally, producers give up some management independence and decision making for a more stable income and less variability.
Insurance can be an effective mechanism of transferring large risks to someone else. To be insurable, an adverse event must be important enough to cause economic hardship to the insured if it occurs. Further, there must be a sufficient number of adverse events or potential quality loss to allow a reasonably close calculation of the probable loss. Also, the potential loss must be accidental and unintentional and when an adverse event occurs, the amount of loss must be observable and measurable.

By definition, insurance is the means of protecting against unexpected loss. The risk can be passed off by purchasing insurance from an insurance company, or it can be self-insured. With self-insurance there are no premiums to pay, but in the event of a loss, the operator bears the full amount of the loss.

The three types of insurance that all operators should carry are:

1) Property and casualty insurance;

2) Health, life, and disability insurance; and,

3) Liability insurance.

Crop insurance is a very important type of property insurance that can be used very effectively in conjunction with marketing plans to also reduce marketing risk. Crop insurance can guarantee a level of production, thus removing the risk associated with forward pricing or selling products that are yet to be produced. Crop insurance will provide the money to deliver on a commitment should the insured crop suffer a loss prior to harvest. Through the effective use of crop insurance, producers can enhance their financial management and secure operating loans.

Medical expenses due to an illness or injury can wreak economic havoc on a family. Farmers are more likely to be disabled than killed in accidents. A good disability policy is as important as life insurance and is a good risk management tool.

A liability policy protects a farmer against claims or lawsuits brought by persons whose property or person has allegedly been injured by the farmer’s negligence.
PRODUCTION RISK MANAGEMENT CHECKLIST:

- ✔ What are your major sources of crop and livestock production risk?
- ✔ Are the knowledge and management capabilities available to diversify or add another enterprise? Is there a strong level of commitment to diversify?
- ✔ What are the income and risk relationships between a prospective new enterprise and existing enterprises? Will the new enterprise provide effective diversification?
- ✔ What are the implications of a crop loss on the ability to meet debt obligations and cash flow needs?
- ✔ Which crop insurance product(s) and coverage offer the best protection for the coverage needed? Which coverage will best complement the marketing plan?
- ✔ Are there no cost or low cost practices that can be implemented to control or minimize risk?
- ✔ Is contracting a viable method of transferring risk? What are the legal conditions and implications of contracting?
- ✔ What are the economic benefits and risks of adopting new technologies?
Managing Marketing Risk

Marketing is the activity that transforms production in a farm or ranch operation into financial success. To deal with marketing risk, it is essential to understand how markets function, how prices are determined and the tools that are available to take advantage of opportunities.

Uncontrollable events including consumer preferences, weather, government actions, the factors affecting the price of other commodities and currency values all have a dramatic impact on the crop and livestock markets. These factors apply both to our domestic situation and the global circumstances. Agriculture markets are increasingly global markets, necessitating an understanding of global economic conditions to make prudent marketing decisions.

**MARKETING PLANS**

Given the volatility of the markets, preparing and following a marketing plan can be an elusive task. However, a marketing plan is an integral component of the goals of the business, the management philosophy, and the overall business plan for the operation. That business plan should also include production, financial, and personnel management plans.

A marketing plan sets specific actions to be taken and the steps needed to accomplish the business goals. It requires:

1) *an understanding of the alternatives and the tools the business wishes to use*;
2) *analysis of the alternatives; and*
3) *the discipline to follow through.*
MARKETING PRINCIPLES
The Marketing Chain for agricultural products includes production of the raw good, assembly, processing, wholesaling, retailing, and consumption. Each step enhances the desirability of the good to the consumer by producing value in form, place, time and possession. The form value results from having the product in the form for the consumer to gain maximum value from its consumption. The place value depends on having the product where the consumer wants it. The time value comes from having the product available to consumers when they want it. The possession value comes from transferring physical possession and ownership in the manner the consumer desires. In our economic system, prices are set in the marketplace. Understanding how the market values form, place, time and possession enhances the seller’s ability to take advantage of the market opportunities. Delivering the product with the characteristics that have the greatest value in the marketplace is a key marketing principle.

Price Elasticity of a product is the sensitivity of the demand for the product to changes in price. Traditionally, the demand for agricultural products has been relatively inelastic. That is, there is little change in the quantity demanded with changes in price.

THE COMPONENTS OF MARKETING DECISIONS
There are six basic decisions with each marketing action. These are:

1) **When to price or sell.**
   This decision requires determining the time when the price will be established. This could be at delivery or at another time.

2) **Where to price or sell.**
   Typically there are a number of alternatives, some through direct selling and some through contracting.

3) **What form, grade or quality to sell.**
   Some commodities are more sensitive to quality factors than others while other commodities may not have established quality standards.

4) **How to price.**
   This involves choosing among various alternative tools or mechanisms to set the price.

5) **What services to use.**
   There may be specific services offered by agribusiness associates.
6) When and how to deliver.
   This often is directly linked to how the price is set. Transportation and storage costs need to be considered in the marketing decision.

MARKETING DISCIPLINE
Marketing Discipline is often the most difficult aspect of marketing. Establishing goals and putting them in writing is an immense help in maintaining the discipline needed in marketing decisions. Other techniques to maintain discipline include discussing the marketing plan with business partners, open and frequent communication with market advisors, and a long-run view of marketing. These actions could also create more confusion and reduce confidence but by conducting the discussions with the original goals in mind, it can reinforce the discipline needed.

Contingency plans, as part of the basic marketing plan, will also help. This provides a pre-determined plan if the market situation changes. What to do if the price does not meet expectations and what to do if the crop is not as large as expected are important contingency actions.

The bottom line in marketing plans is that not making a decision is, in fact, making a decision.
ADDITIONAL PERSONAL FACTORS

There are two other personal factors which will assist in establishing and following through with the marketing plan:

1) **Assess your risk tolerance.**
The inability to control and predict market forces creates anxiety. Being open about your comfort level with risk helps establish the marketing plan that fits your situation and hence, reinforces the discipline to carry it out. A good understanding of the financial position of the business also removes some of the uncertainty of the possible impacts of marketing decisions.

2) **Upgrade your marketing skills.**
This should be an ongoing process. The structure of markets and the factors affecting them is constantly changing. There are also new skills to learn and update. There are a variety of sources to help with these efforts including direct interaction with educators, commodity brokers, grain dealers and consultants. Online and print resources are also available.

AN INTEGRATED MANAGEMENT APPROACH

As mentioned above, a marketing plan is much more feasible if it is part of a total business management plan. It should be coordinated with the production, financial, legal and human risk management plans for the business. For example, marketing decisions often involve contractual arrangements which have legal implications.

What could be called the classical example of integrated risk management in the current operating environment is the coordination of crop insurance and crop marketing decisions. Crop insurance revenue policies were developed specifically with the objective of providing a foundation to make pre-harvest marketing decisions. Crop insurance yield coverage provides protection to help protect cash flow if there is a low yield or crop disaster. Revenue protection goes a step further. A double jeopardy situation occurs if grain is forward priced and then both a low yield and price increase occur. In this situation, there possibly would not be enough production to meet the contract obligations and the production that is short would have to be replaced at a higher price than the contract price. With revenue insurance, protection for this situation is provided.

The marketing plan is directly tied to the financial needs and plans of the business. The integrated approach is a big boost for the confidence in each component and, in this case, the discipline to follow the marketing plan.
MARKETING TOOLS
Learning about the full range of price risk management tools will allow you to become a better marketer and risk manager. Selecting the right tool to use at the right time will not only reduce risk, it could increase your profit. Following is a basic overview of more commonly used pricing strategies and guidelines for determining when to use each.

1 STORAGE (WITH NO PROTECTION)
Storage is a way of avoiding seasonally low prices. When prices are below the level anticipated in the marketing plan, storage may be justified, assuming that you have adequate financial resources. Storage may be warranted when there is a realistic expectation of a market price increase. Historical data indicate that the market is often willing to pay your storage costs. However, stored grain can go out of condition and is subject to theft.

2 CASH SALE
When prices are favorable and at levels anticipated in the marketing plan, a direct cash sale is warranted. Some producers also prefer the simplicity of cash sales.

3 DEFERRED PAYMENT CONTRACTS
Deferred payment contracts allow for the current pricing and delivery of the crop, but can delay the receipt of payment. They are often used as an income management tool for tax planning purposes. A deferred payment contract makes the seller an unsecured creditor of the elevator. This has implications both for legal and for financial risk exposure.

4 FIXED PRICE CONTRACT FOR DEFERRED DELIVERY
This contract allows producers to establish a price for later delivery. A fixed price contract, also known as a cash forward contract, may allow you to schedule deliveries at times of the year that better fit with labor, grain quality, and logistics. Having an adequate amount of crop insurance allows you to comfortably contract the insured portion of your crop. These contracts often work well when crops are large, when storage is tight, or when the market price reaches the objective in your marketing plan.

5 BASIS CONTRACT
Basis is the difference between the local cash price and a futures contract price. Basis is typically more stable and predictable than either the underlying futures contract or the local cash price. However, basis does change in response to local supply and demand factors. A basis contract allows you to fix the basis, but allows the final cash selling price to be determined at a later date by subtracting the fixed basis from the futures price. This strategy works well when the basis is strong (cash prices are high relative to futures) and there is some potential for an increase in futures
prices. Yield or revenue insurance can give you the confidence to enter into basis contracts without the concern of not having a crop to deliver.

6 **DEFERRED OR DELAYED PRICE CONTRACT**
A deferred or delayed price contract transfers title of a crop to the buyer at delivery, but allows the seller to set the price later. It is commonly used when storage is tight. At these times, the local elevator wants to move more grain into the marketing channel, but the seller may not be satisfied with current prices. When producers have crop insurance, they have a guaranteed, minimum production level. They can, therefore, safely use deferred price contracts early in the growing season.

7 **MINIMUM PRICE CONTRACT**
A minimum price contract establishes a floor price for the duration of the contract. The floor price is typically several cents below the cash price at the beginning of the contract. A producer could net less with a minimum price contract than with a fixed price contract if prices fall, but will benefit from a rise in market prices. This contract eliminates much downside price risk.

8 **HEDGE-TO-ARRIVE (HTA) CONTRACT**
This contract has risk management properties similar to a short futures market position. It is the opposite of a basis contract. It permits the seller to set the futures price level by the delivery date, but the basis is determined later. The seller is responsible for delivering the contracted amount on the delivery date.
9 **SHORT FUTURES HEDGE**
Selling futures contracts to protect the value of grain or livestock in inventory or the value of expected production is a short futures hedge. A short futures hedge reduces downside price risk. On the other hand, it also reduces the ability to capture upside price movements.

10 **PUT OPTION PURCHASE**
This tool is similar to a minimum price contract. It sets a floor on the crop or livestock price throughout the life of the contract. If prices rise during the period, the seller can capture upside price gains.

11 **CONTRACTED PRODUCTION**
Many variations of this type of contractual arrangement exist. Historically, production contracts have been used for specialty crops, poultry and livestock. Purchasers have been willing to offer such contracts to fulfill the need for highly specific agricultural products. Recently, contracted production has been offered on an increasingly broader range of crops and livestock. Contract production reduces flexibility and the opportunity to capture upside price potential, but it assures a relatively reliable cash flow.

12 **MARKETING COOPERATIVES**
Forming and participating in marketing cooperatives provides members the opportunity to benefit from volume sales or purchases. Benefits may be in the form of enhanced prices received or reduced costs. There has been an increased interest in marketing cooperatives for both crops and livestock.

13 **DIRECT SALES**
For some producers, selling directly to consumers is a way to enhance profitability. Smaller farms near population centers may especially
benefit from direct sales. Some risks such as timely payment, some price control, dealing with brokers, shippers and processors may be reduced but other risks, such as having a supply when needed and food safety liabilities, will be increased. There is a tradeoff between profit potential and risk. Example methods of direct sales include direct sales at retail outlets including roadside and farmers markets, and “pick your own” arrangements. The popularity of Community Supported Agriculture (CSA) enterprises where consumers support local producers in a cooperative type arrangement is increasing. Some of these same methods are being used for fiber products, livestock products including dairy products, and specialty meats.

**MARKETING RISK MANAGEMENT CHECKLIST:**

- ✔ Is the marketing plan feasible and does it fit the producers’ risk preferences?
- ✔ Is the marketing plan coordinated with the financial plan to ensure farm income meets cash flow needs?
- ✔ Is the marketing plan coordinated with the crop insurance plan?
- ✔ Based on historical yield records, what are the expected yields and what are the production costs and breakeven prices for those yields?
- ✔ Does the producer’s lender understand the marketing plan and will the lender provide the needed financial support to carry it out?
- ✔ What are the costs, returns and associated risks alternative strategies?
- ✔ Where can the producers get the professional help that they are most comfortable with and will provide assistance that is consistent with the situation, goals and risk management philosophy?
- ✔ How can producers best upgrade their marketing knowledge and skills?
Financial risks include those risks that threaten the financial health and stability of a farm business. The basic components of financial risk are:

1) The cost and availability of debt capital;
2) The ability to meet cash flow needs and commitments in a timely manner;
3) The ability to absorb short term financial shocks; and,
4) The ability to maintain and grow the equity in the business.

Volatile in the agricultural economy requires close monitoring and planning of all financial transactions as well as regular scrutiny of the net worth or equity position. The capital structure of any business includes both debt or borrowed capital and equity or owned capital. The risks of debt capital are the ability to meet the contractual obligations made to others and the possibility of increasing interest rates. The generation of equity capital increases the owners’ net worth or wealth. Eroding net worth can result from the risks of lower asset values including land and non-farm investments. The possibility of negative net farm incomes also poses a risk to net worth. Increasing equity provides resources for the expansion of the business to include additional family members and for retirement.

**FINANCIAL STATEMENTS**

To address the major elements of financial risk itemized at the beginning of this section, a good set of financial records is mandatory. These records provide the flow of information needed to evaluate past performance and plan future strategies through a set of specific financial statements. Financial statements provide the basis to monitor the financial position, control expenditures, and measure various aspects of the financial performance of the business. The essential financial statements are the balance sheet, statement of owner’s equity, income statement and cash flow statement.
**1 BALANCE SHEET**

The balance sheet or net worth statement is a snapshot of the financial position of a business on a specific date. It shows the value of all assets which is “balanced” between the value of all liabilities or the claims of others against the business and the net worth or the owner’s claims against the business. In agriculture both assets and liabilities are separated into current, intermediate and long term or fixed. Some analysts use only current and noncurrent categories for describing assets and liabilities. Current assets are cash or any asset such as grain or marketing livestock which will be converted into cash within a year. Current liabilities are any debts or payments that are due within a year. Intermediate assets typically include breeding livestock and machinery. Land is the major component in the long term category. Intermediate and long term liabilities are debts against the corresponding assets. Payments on any class of liabilities due within the year are part of current liabilities.

Often two sets of balance sheets are maintained, one using market value of assets and the other with cost values. The cost value approach measures the contribution of management to the growth of equity over time because it removes the impacts of inflation and deflation.

**2 INCOME STATEMENT**

The income statement, or profit and loss statement, shows the net income for the farm business during the accounting period. It includes income generated by the farm, the operating and overhead costs, depreciation on assets, gains or losses on disposal of capital assets and non-farm income and expenses. It can be prepared on a cash or accrual basis. The accrual approach provides a true picture of the profitability of the business for that period by accounting for changes in the value of inventories, payables and receivables.

**3 STATEMENT OF OWNER’S EQUITY**

The equity position over time measures the financial growth and progress of the business. Changes can occur due to retained earnings, withdrawals and contributions, changes in the market value of assets or changes in personal net worth from nonfarm sources. It formally links together the beginning and ending balance sheets for the year and the corresponding income statement. This process reconciles the two statements and shows the impact of the withdrawals for family living costs.

**4 CASH FLOW STATEMENT**

Effective financial control of the farm business requires thorough knowledge of the sources and uses of cash in the business. A business may have both a strong balance sheet and income statement but
the cash needs and commitments may not match the cash inflows. The cash flow statement can be a statement of past activities or a budget of expected cash inflows and outflows. As a statement of past performance, a cash flow statement shows how and when cash was generated and used to pay for inputs, loan payments, family living and any capital purchases. A projected cash flow is essential for evaluating the borrowing needs of a business and the feasibility of repayment plans.

A cash flow statement shows a complete accounting of debt transactions including principal and interest payments as well as the proceeds from new loans. An income statement only shows interest payments. Other items included in a complete cash flow but not in an income statement include family living costs, non-farm income and expenses, and income taxes.

**ASSESSING AND MANAGING FINANCIAL RISKS USING FINANCIAL PERFORMANCE MEASURES**

The main financial risk factors are related to liquidity, solvency, profitability and repayment capacity of the farm business. The first two are based on data from the balance sheet, profitability measures come from the income statement and repayment capacity comes from cash flow information.
A set of 21 financial ratios have been identified by the Farm Financial Standards Council to help farmers and ranchers capture the key information from their accounting system to prepare reports and conduct financial analyses in a uniform manner (http://www.ffsc.org/2012/06/01/farm-financial-guidelines-and-ratios/). This discussion will focus on five of these ratios that provide direct measures of the financial risks of a farm business. The guidelines are based on past experiences and analysis of farm business. They may vary based on individual enterprises and geographic locations. Different lenders and analysts may also have their own benchmarks.

1 LIQUIDITY

Liquidity is the ability of a business to meet financial obligations as they come due without disrupting the normal operations of the business including paying farm living expenses, taxes and debt payments. Financial risk measurements are:

1) Current Ratio; and
2) Working Capital to Gross Income.

Current Ratio measures the extent to which current farm assets, if sold now, would pay off current farm liabilities. It is calculated by dividing total current farm assets by total current farm liabilities. The guideline or goal is a ratio of greater than 1.7.

Working Capital to Gross Income measures the amount of operating capital compared to the size of the business. Working capital is the total current farm assets minus the total current farm liabilities. As farm sizes have increased and the volatility of both input and output prices has increased this has become a more important measure to assess financial operating risk. The guideline is a ratio of more than 25%.

2 SOLVENCY

Solvency is the ability of the business to pay all its debts if all assets were liquidated. The key financial risk measurement is Farm Debt to Asset Ratio. It compares total debt to total farm assets and measures the share of the business owned by others. A higher ratio indicates greater financial risk and lower borrowing capacity. The guideline or goal is a ratio of less than 30%.

3 PROFITABILITY

Profitability measures the amount of profit generated by the farm or ranch business from the use of land, labor and capital. There are a number of measures used including net farm income and rate of return.
in assets. The ratio that identifies the risk involved in the ability of the business to generate a profit is:

*Operating Profit Margin.* It shows the operating efficiency of the business. It is calculated by dividing the value of farm production by the profit or return on farm assets. The *guideline is greater than* 25%. A low profit margin can be caused by low product prices, high operating costs of inefficient production.

### REPAYMENT CAPACITY

Repayment capacity measures the ability of the business to repay term debts on time. There are four measurements that address repayment capacity. The one highlighted here for risk management purposes is:

*Term Debt Coverage Ratio.* It measures the ability of a business to produce enough income to cover all intermediate and long-term debt payments. The numerator of the ratio is net farm income + depreciation + net non-farm income + interest on term loans – family living – income taxes. The divisor of the ratio is principal + interest on term loans. The *guideline is greater than* 1.5. A ratio of less than 1.0 indicates that the business must liquidate inventories, increase open loan accounts, borrow additional money or sell assets to make scheduled payments.

### SYNOPSIS OF THE FOUR BASIC COMPONENTS OF FINANCIAL RISK

The financial statements and the ratios that can be generated from them provide most of the information needed to address the essential elements of financial risk listed at the beginning of this section.

### THE COST AND AVAILABILITY OF DEBT CAPITAL

The financial analyses and ratios discussed above provide the tools to maintaining a sound financial foundation to ensure debt capital is available from lenders. The cost poses another risk – *interest rate risk*. Interest rates are largely beyond the control of the manager. However, favorable interest rates compared to market rates at any point in time, often can be achieved based on excellent financial ratios and the use of other risk management tools such as crop insurance and a sound marketing plan. These situations decrease the lender’s exposure and risk which often can be passed on through reduced interest rates. The other aspect on interest rate risk is the possibility of a general increase in interest rates. This should be considered by calculating a number of “what if” scenarios when planning capital expenditures. One way to reduce interest rate risk is to use fixed rather than
variable rate loans. The cost of reducing that risk is the higher interest rate on the fixed loan.

2. **THE ABILITY TO MEET CASH FLOW NEEDS AND COMMITMENTS IN A TIMELY MANNER**
The current ratio and the working capital to gross income ratio are the key tools to assess the risks of cash flow commitments along with the cash flow budget.

3. **THE ABILITY TO ABSORB SHORT TERM FINANCIAL SHOCKS**
The working capital provides the emergency fund to absorb short term shocks.

4. **THE ABILITY TO MAINTAIN AND GROW THE EQUITY IN THE BUSINESS**
A number of the tools contribute to keeping the long term performance of the business on track. A key ratio to monitor is the Operating Profit Margin. One of the factors embedded in some of the ratios is Family Living. Controlling and meeting family living costs can be a significant component of financial risk. Family living expenses come out of net income. Using the operating profit margin goal of 25% means that $100 of gross income is needed to generate $25 of net income. If family living costs are increased by $50,000 for example to bring an additional family member back into the business, means gross farm income must increase by $200,000 to generate that additional profit to use for family living items. Off-farm income is another risk management tool to address the family’s needs.
FINANCIAL RISK MANAGEMENT CHECKLIST:

✓ Are the financial records in place that are needed to monitor the financial position of the business and the financial risks it faces?

✓ What have been the financial trends of the business?

✓ How do the key financial ratios compare to the guidelines and to those of similar operations?

✓ What is the relationship with lenders and how can that be enhanced to lower the interest rate charged?

✓ What are the cash flow needs of the business for operating inputs, machinery, personnel, land costs, debt payments, taxes, living costs and farm overhead?

✓ How can profit margins be protected?

✓ Have family living expenses followed projections?

✓ Have “what if” scenarios been conducted to evaluate the financial impacts of uncontrollable events?
Managing Legal Risk

Disclaimer: Guidelines suggested here are offered as general recommendations for educational purposes and do not constitute specific legal advice. Consult a qualified attorney for legal advice for specific cases.

Legal risks to the farm business arise from disputes or disagreements between individuals, between individuals and groups, or between groups. These risks occur when there is an imbalance in power or information between parties. The adverse effects of legal risk result when one party exercises inappropriate action that results in damage to the other party. The aggrieved party has suffered as a result of actions which they were not expecting. That is, they have been affected by the uncertain responses of others.

Legal risks to the farm business arise from disputes or disagreements between individuals, between individuals and groups, or between groups.

Our legal system of laws, courts, and contracts is designed to address these risks. Actions of the individuals or groups can serve to alleviate or aggravate these risks. Subcategories of legal risk addressed here include: contractual arrangements, business organization, statutory obligations, tort liability, and public policies and attitudes.

CONTRACTUAL ARRANGEMENTS

Contractual arrangements in agriculture take many forms. A contract is any agreement (written or verbal) where the parties exchange mutual promises in return for some sort of consideration or benefit.

Contracts include financial arrangements, such as promissory notes and mortgages. Leases and crop share arrangements are contracts. Seed purchases with restrictions concerning saving seed or obligations to include refuge plantings are contracts. Many state and federal farm programs are contractual in nature. The production and sale of agricultural products is often accomplished and compensated for by contract for future performance and delivery. Crop and livestock
insurance coverage is also based on a contractual agreement. Even employment arrangements, although often not written, are treated as contracts.

Many states have what is known as “statutes of frauds,” which require that certain types of agreements be in writing before they can be enforced. Examples of contracts which often must be in writing to be considered valid are agreements for the sale of real estate and agreements which cannot be performed within one year.

The performance of parties in a contractual arrangement is the source of risk. This performance risk may be a result of an imbalance in the information or the power held by one party over the other.

The basic legal issue in contracts is their enforceability if one party fails to perform, or defaults, on their promise. Often, contracts specify what constitutes default and the remedies if default occurs. If the contract is unclear, the courts generally employ two types of relief for breach of contract: specific performance and damages. In the case of specific performance, the breaching party is ordered to remedy the default and fulfill the contract. If specific performance is not possible or reasonable, damages are awarded to compensate the offended party.

Contractual nonperformance can have ramifications well beyond the scope of the contract itself. For instance, the inability to meet contractual financial obligations to a mortgage lender may result in debt restructuring, foreclosure, or bankruptcy. Failure to comply with the terms of a seed sales contract may result in criminal charges. Deviation from the specification of a production contract may result in the refusal of a contractor to take delivery of the product. Contracts are designed to protect the interests of all parties. Performance failure can be a major source of risk and result in severe financial consequences.

**BUSINESS ORGANIZATION**

The form of business organization is one of the legal issues that affect the risk environment facing the farm business. By default, or perhaps lack of attention, many farms or ranches are operated as sole proprietorships. While this will often suffice, alternative forms include partnerships, limited partnerships, limited liability companies, corporations (Subchapters C and S), and a wide range of trust arrangements. Further, some states may have special provisions for “family farms” or “heritage farms.”

Income and property tax consequences at the local, state, and federal level can vary significantly, depending upon the form of business
organization. Some structures lend themselves to the avoidance of estate tax and can make generational transfer or liquidation easier. Liability to third parties is also a consideration in choice of business form as some structures may shield owners from personal liability. The form of business organization can also facilitate or impede, if done poorly, management organization and communication among multiple owners, partners, or generations.

**LAWS AND REGULATIONS**
A wide range of laws and regulations apply to farmers and ranchers. These may be legislated at the local, state, or federal level or may be instituted by agency or court action. Laws and regulations include tax reporting and payment obligations, environmental regulations, wage and hour and safety requirements, nondiscrimination statues, pesticide use regulations, food safety requirements, traffic and transportation laws, conservation easements, land use restrictions, and covenants.

The legal risk arises when a lack of knowledge of laws and regulations leads to noncompliance. Failure to obey the laws and regulations may have serious consequences in terms of fines, criminal penalties, and/or abatement. Laws and regulations tend to become more numerous and complex over time. Advocacy groups may use legislative bodies, referenda, and the courts to influence the regulatory environment. It is important to stay abreast of, and in compliance with, changes in the laws and regulations.

**TORT LIABILITY**
Tort liability arises from the negligent or intentional infliction of damage to a person or to property. This type of liability is commonly insured under a general liability insurance policy.

The simplest type of tort arises where someone is injured on a farm or ranch property. Tort liability may also include employment torts, such as wrongful discharge, discrimination, or harassment. The effects of agricultural activity on the environment has both statutory and liability components. Adjacent landowners, communities, and public interest groups may use a combination of regulation and tort liability to influence agricultural activities. Traditional liability insurance policies may not cover pollution claims, and noncompliance with environmental regulations could result in severe civil or criminal penalties.

Use of sound and safe production practices; education, certification, and licensing; third party audits; and compliance with statutes and
regulations can mitigate the risk of tort liability. Accurate records of production activities, pesticide and fertilizer application; proper sanitation; and timely and appropriate response to adverse events, like spills or contamination, can provide evidence of reasonable care to protect workers, neighbors, and the environment.

PUBLIC POLICY AND ATTITUDES

A significant source of risk that is external to the farm business is shifting attitudes or preferences of the consuming public. This risk can be quickly internalized if it affects production practices or prices. Public concerns over a wide range of issues from animal welfare to zoning, food safety, agriculture’s role in alternative energy, use of genetically modified products, and organic production are some of the issues that have affected producers.

While the direct connections between producers and consumers of agricultural products have decreased as the population has become more urban, the public interest in how foods are produced has increased and consumers are more willing to express their views in the marketplace. Sometimes these views create a divide that becomes adversarial and may lead to production restrictions or increases in production costs. Consumers and producers alike have an obligation to remain informed on these issues. Similarly, consumers and producers should recognize that changes in production practices will almost always affect cost and returns.

Communication, education, and respectful dialogue can help address the risks associated with shifting attitudes and preferences.

SUMMARY

When entering into any relationship, whether between individuals or groups, either oral or written, the source of risk lies in disagreements between the parties or when one or both parties fail to carry out the agreed terms. Questions that may arise include: If disputes arise will they be handled by compromise, by mediation, or, by legal action? What is the appropriate jurisdiction if the contracting parties do not reside in the same county or state? Is one party liable for court costs and attorney’s fees?

For the formulation of contractual arrangements, changes in business organization, for transition planning, or for legal disputes, the services of an attorney are often required. When selecting an attorney, you should ask for basic information about the attorney’s familiarity with the law for particular situations. Attorneys, like other professionals,
often specialize. For example, a good contract attorney may not have much expertise in estate planning. You should have a good understanding of fee arrangements, billing cycles, and expected costs, for any matters that will involve an attorney. It is best to seek the advice of an attorney before a relationship is formed rather than after it has failed.

Many states, legal and business organizations, and land-grant universities may offer educational programming and publications about legal issues. However, for concerns specific to your operation, contact a qualified attorney.

**LEGAL RISK MANAGEMENT CHECKLIST:**

- ✓ Are property and liability insurance policies adequate?
- ✓ Have all new acquisitions been added to insurance coverage?
- ✓ Are contracts in place to specify the performance and remuneration for all parties?
- ✓ Is care taken to ensure that all parties have sufficient knowledge to make informed decisions?
- ✓ Do contracts include terms and remedies in the event of default?
- ✓ Are farm activities in compliance with local, state, and federal laws and regulations?
- ✓ Do owners and managers stay current on changes in laws and regulations?
- ✓ Do owners and managers stay current on trends in consumer attitudes and preferences?
Managing Human Risk

Human risks are those risks associated with the people involved in the farm and ranch business. This refers to the risks or uncertainty related to the human involvement and interactions that are important for business success. Human risks can be summarized into four main categories:

1) **Human health and well-being**;

2) **Family and business relationships**;

3) **Employee management**; and,

4) **Transition planning**.

Because the character, health, and behavior of people is unpredictable, the human element of the farm business is often the most difficult to manage.

**HUMAN HEALTH AND WELL BEING**

**HEALTH AND SAFETY**

Health and safety is a major source of risk in agriculture. According to the National Safety Council, agriculture is the most hazardous industry in the nation. Every year, farm family members and workers are injured or die in farming accidents. Injury rates are highest among children age 15 and under or among adults over 65. Most farm accidents involve machinery. Farm animals are unpredictable and may become hostile if frightened or threatened. Other common health and safety hazards are: chemicals/pesticides, electricity, dust, tools, temperatures, and heavy lifting. Stress, fatigue, lack of training, and taking short cuts are primary contributors to most agricultural accidents.

**Strategies for Management**

- Structure work assignments and schedules consistent with skill level and physical limitations.
- Include safety precautions in all aspects of training.
- Allow sufficient time for physical and mental rest
- Utilize proper machine guarding and maintain equipment to manufacturers’ recommendations.
• Follow instructions exactly when using chemicals.
• Always use protective equipment (seat belts, safety gear, goggles, gloves, boots, etc.).
• Purchase health, life and disability insurance policies.

## NATURAL LIFE CHANGES

Natural life changes also provide uncertainty and risk to a farm business. Aging, illnesses and death are disruptive and costly, both emotionally and financially. When human resources are not productive, the farm suffers. Especially difficult are those situations where key institutional knowledge and decision making skills are lost.

### Strategies for Management

- Provide training for back-up support within the farm business in areas such as record keeping, financial analysis, market planning, and production management.
- Develop “How To” manuals for every function on the farm.
- Develop formal contingency plans and management systems to:
  - Help everyone focus on the priorities established by the business.
  - Allow the business to function in the event of an unexpected absence of a key person.
  - Give family members and employees a better opportunity to plan their own lives.

## FAMILY AND BUSINESS RELATIONSHIPS

Establishing and maintaining healthy relationships can be challenging and life on a family farm can be hectic and at times seem out of control. Paying attention to both family and business concerns is not easy. Perhaps the most important element in the success or failure of a family business is the relationships among the key members of the business family. The most valuable resources you have are those you live with and work with. These relationship risks include family members, business partners, consultants, and other agribusinesses that support the farm business. Nurturing these resources can pay important dividends, while ignoring or abusing them can cause irreversible harm.

When marriages fail, for whatever reason, all involved pay a heavy price in many respects. Few farm businesses can survive a divorce.
without serious financial consequences. But other estranged relations, retirements, and departures from the business can also expose the farm business to serious risk.

**Strategies for Management**

- Practice open, honest, and effective communication. Utilize communication tools and methods to promote good communication. Understand the barriers to good communication.

- Maintain a balance in life. Take time to relax and relieve pressure for health and well-being.

- Nurture the human resources each business member works with and depends upon.

- Respect others feelings and opinions

- Allow others to make decisions and enjoy the consequences

- Establish family rules and policies to guide family members in their personal business and family relationships.

- Utilize conflict resolution processes to manage conflict. Conflict is a natural part of life, but if not managed carefully can permanently harm relationships.

- Seek legal counsel regarding financial and tax implications before people exit the business due to death, illness, divorce, retirement, alternative employment opportunities, and estranged relationships.

**EMPLOYEE MANAGEMENT**

Farm employee management involves securing and retaining quality farm labor. The goal is to use labor effectively and efficiently so that the cost of labor can be justified and the risks of using labor mitigated. Hiring employees brings a number of additional responsibilities, potential liabilities, and legal requirements.

**Strategies for Management**

- Develop sound employee search and management procedures, offering appropriate fair and equitable compensation, reward systems, benefit packages, living conditions, and other employee considerations.

  - Use job descriptions to describe in detail what is expected of an employee
o Provide orientation and training opportunities
o Establish performance goals and measurements

• Learn, stay current, and comply with farm labor, equal opportunity, migrant worker protections, and immigration laws.

• Utilize available resources to better understand all facets of hiring, managing, and terminating a farm worker.

**TRANSITION PLANNING**

Transitioning a farm business from one generation to the next provides unique issues and risks to consider and potential consequences. It is important to think through the issues and consult with professional advisors before making decisions about when to make the transition and to whom.

Transition and estate planning is the process of anticipating and arranging for the transfer of an estate. Life is difficult enough on family members and business partners after a person’s death without leaving critical decisions for them to make. A well thought out plan has many benefits: a reduction in tax liabilities, a preservation of assets for surviving family members, peace of mind for everyone involved, the distribution of assets according to one’s wishes, and assurance the business will continue with fewer disruptions.

*Strategies for Management*

• Establish transition goals to guide decision making through the process.

• Consider who else should be involved to make decisions about transition planning.

• Consider both the process and outcome when determining what is fair and equitable for the distribution of property.

• Prepare an estate plan.

• Plan for any legal, tax, or other consequences that may arise as a result of the decisions.
HUMAN RISK MANAGEMENT CHECKLIST:

✓ Has an overall farm safety and health plan been prepared and shared with family members, business partners and employees, including: training and guidelines for machinery operation, use of safety equipment, training and procedures for using chemicals, training and methods for taking care of the physical and mental well-being of all people involved in the business?

✓ Is farm safety included in all training opportunities?

✓ Have back-up support training, how-to manuals, and contingency plans been developed to prepare for unexpected absences or when human resources are unable to produce?

✓ Have communication forums (family council meetings, family business meetings, business rules and policies) and conflict resolution processes been established to manage the family component of the farm business?

✓ Have employee management procedures (worker compensation, reward systems, benefits packages, job descriptions, orientation and training opportunities, etc.) been developed and incorporated into the management plan?

✓ Has a transition plan (will, estate plan, etc.) been prepared and is it current?
**THIS HANDBOOK IS A REVISION OF THE FOLLOWING PUBLICATION:**

**THE AUTHORS:**
Laurence Crane is Vice President — Education and Communication, National Crop Insurance Services, Overland Park, KS.

Gene Gantz is Risk Management Specialist with the Raleigh Regional Office, Risk Management Agency, USDA. He works out of Harrisburg, PA.

Steve Isaacs is Extension Professor, Department of Agricultural Economics, University of Kentucky, Lexington, KY.

Doug Jose is Professor and Extension Farm Management Specialist Emeritus, Department of Agricultural Economics, University of Nebraska–Lincoln, Lincoln, NE.

Rod Sharp is Extension Specialist, Agriculture and Business Management Economist, Colorado State University, Grand Junction, CO.

**ACKNOWLEDGEMENTS:**
Extension Risk Management Education (ERME) is delivered through four regional centers that provide grant funding and leadership within their regions along with a fifth center that provides digital support for applications, reporting, and dissemination of results and resources. ERME funds results-based, producer-focused projects through a competitive grants program with funding from the United States Department of Agriculture National Institute of Food and Agriculture (NIFA).

The ERME Program has funded innovative programs generating tangible results for agricultural producers in every state since 2001. Regional centers are located at the University of Arkansas, the University of Delaware, the University of Nebraska, and Washington State University with the Digital Center at the University of Minnesota. More information can be found at www.extensionrme.org.

The United States Department of Agriculture Risk Management Agency (RMA) supports crop insurance education and outreach to ensure that small and underserved producers get the information they need to effectively manage risk and ensure their businesses are productive and competitive. RMA awards partnership agreements to deliver crop insurance education to agricultural producers and to deliver training to U.S. farmers and ranchers in managing production, marketing, and financial risk.