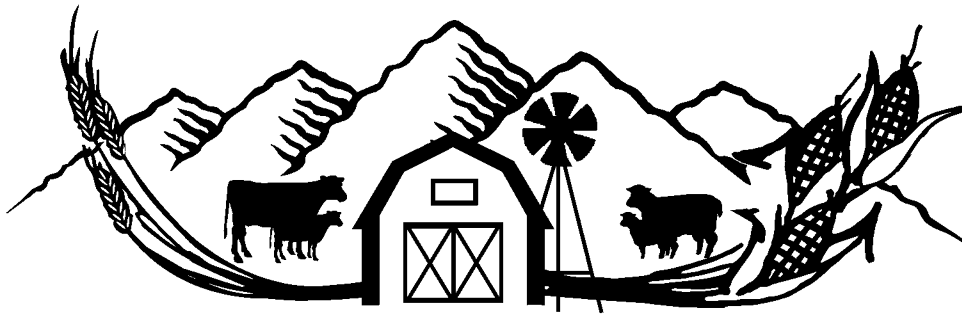

Risk and Resilience in Agriculture

An Introduction to Risk in Agriculture

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The business environment agricultural producers operate in today is vastly different from the environment that existed prior to the Federal Agricultural Improvement and Reform Act of 1996 (FAIR Act). Much has been said and written about a farmer's freedom to succeed and freedom to fail since the FAIR Act of 1996 was enacted. The responsibility to manage risk has been placed with the agricultural producer and it truly is that producer's freedom to farm or fail.

One method a producer could use to visualize this responsibility is to think of a scale with risk at one end and resilience at the other. An operation close to the risk end of the scale could be characterized as close to going out of business. One small mishap would put this operation out of business. It could be a hailstorm without crop insurance in place or the cash market drops a few cents the week this producer decides to haul grain to town. Essentially, there is no stated family goals or business plan in place to achieve those goals

On the resilience end of the scale is a sound business operation. A written business plan is followed and continually monitored and adjusted. This business plan was developed with input from all the family members and represents their strengths and desires for the future. Crop insurance is in place to guard against losses from adverse weather. A marketing plan dictates when crops are sold. Financial records are kept current and needed information can be obtained quickly at any time. Yes, the FAIR Act of 1996 has created the freedom to farm or the freedom to fail. The choice is up to today's agricultural producer.

The United States Department of Agriculture's Risk Management Agency has defined five primary categories of risk; production, marketing, finance, legal and human risk in a publication entitled "An Introduction to Risk Management."[1] The remainder of this article describes in general terms each of those categories and insights as to benefits of improved risk management in these areas.

Understanding Production Risk

Agricultural production implies an expected outcome or yield. Variability in outcomes from those, which are expected poses risks to your ability to achieve financial goals.

The major sources of production risks are weather, pests, diseases, and the interaction of technology with other farm and management characteristics, genetics, machinery efficiency, and the quality of inputs. Following are some risk management strategies you can consider to lower production risks.

Enterprise Diversification

Diversification is an effective way of reducing income variability. It is the combining of different production processes. For instance, diversification can include different crops, combinations of crops and livestock, different end points in the same production process (such as different selling weights), or different types of the same crop (such as yellow, white, waxy or high-protein corns). Diversification can also be achieved through different income sources, such as off-farm employment for smaller farms.

Crop Insurance

Management of yield or price risk through the purchase of crop insurance transfers risk from you to others for a price which is stated as an insurance premium. Crop insurance is an example of a risk management tool that not only protects against losses but also offers the opportunity for more consistent gains. When used with a sound marketing program, crop insurance can stabilize revenues and potentially increase average annual profits.

Crop insurance provides two important benefits. It ensures a reliable level of cash flow and allows more flexibility in your marketing plans. If you can insure some part of your expected production, that level of production can be forward-priced with greater certainty, creating a more predictable level of revenue. With the elimination of ad hoc disaster payments and deficiency payments, crop producers will no longer receive government aid during years of crop disasters or price support payments during low price years. Crop insurance provides partial replacement for the Federal safety net.

Contract Production

Contract production is normally associated with vertical integration, where an agribusiness firm coordinates all aspects of a product from production to the consumer's table. Contract production is common in poultry and livestock production. The agribusiness firm provides feed and other inputs to the producer, who manages the grow-out process.

Through production contracts, the agribusiness firm commits the producer to deliver a specific quality and quantity of final product. The producer must comply with the firm's quality specifications and must manage yield risk with insurance and sound management practices.

Before you agree to a production contract you need to consider the tradeoffs. A major advantage for the producer is that a market for the output and, very often, a favorable price are guaranteed. A disadvantage is that the producer loses the opportunity of benefiting from upside price potential, since the sale of the product is fixed by conditions of the contract. The loss of flexibility and profit opportunities is the cost of receiving a predictable cash flow. The challenge associated with contract production is to find contracts that are consistent with the producer's goals and risk tolerance.

Evaluating New Technologies

The challenge of evaluating new technologies is best illustrated by the two newest crop technologies; genetically altered seeds and precision farming. For instance, some seeds are being genetically altered to provide resistance to specific herbicides; thereby permitting improved weed control. Other seeds are being engineered to provide resistance to diseases or insects.

Precision farming controls the rate of application of crop inputs such as seed, fertilizer and pesticides on each acre of a field. By contrast, the conventional approach applies the same rate across an entire field. Precision farming allows yields to be measured for each acre so that output can be strictly measured against crop inputs.

As with all new technologies, farmers who adopt these new innovations try to capture a range of potential benefits, including lower input costs and environmental quality. Benefits can include higher crop yields due to improved pest control and more cost-effective use of crop inputs.

Understanding Marketing Risk

Marketing is that part of your business that transforms production activities into financial success. Unanticipated forces, such as weather or government action, can lead to dramatic changes in crop or livestock prices. As agriculture moves towards a more global market, these forces stem increasingly from world factors. When these forces are understood, they can become important considerations for the skilled marketer.

To be successful, you should take an informed and balanced approach to making marketing decisions. Focus on long-term profitability, not short-term windfalls. Academic studies indicate that marketing strategies, which depend on price chasing or speculation, have not been shown to be consistently profitable. Also, those strategies that do not consider financial and production risks will likely prove to be poor.

Personal Considerations in Marketing

Marketing agricultural products involves information, objectivity, attitude and skill. You should develop marketing plans and strategies that work for you. Here are three important considerations in developing a marketing plan:

1. Know what level of risk you are comfortable with. An inability to control market forces and difficulty in predicting those forces make marketing an inexact science. A better under-standing of your financial situation and the possible consequences of your decisions will remove some of the uncertainty from marketing decisions. Obviously, marketing involves understanding your level of risk tolerance. It also involves a good understanding of your current financial position.

2. Be willing to increase the number of skills in your marketing toolbox. You may need to pay for professional help in developing your marketing plan. Successful marketers are continually updating their abilities by learning new skills. Such efforts should be undertaken without the expectation of an immediate payoff. There are many professionals who can help you. These include futures brokers, elevator operators, financial planners and farm consultants.

3. Develop an integrated management approach to your business. Marketing decisions should not be made independent of other farm business decisions. They should be planned according to the impact they will have on the production, financial, legal and human resource aspects of your

business. Marketing decisions often involve contractual agreements that have important legal consequences. These contracts can significantly affect financial plans.

Developing a Marketing Plan

Managing market risk begins with a marketing plan. The goals and objectives of your business should drive the marketing plan. An accurate understanding of production costs is a critical part of a sound marketing plan for you and for professionals you work with. There may be times when the market price fails to cover all of the costs associated with production. A break-even price should serve as an important reference, even though it is usually not your desired price.

An analysis of supply and demand is important in developing targets for your marketing plan. Supply and demand projections are published by the U.S. Department of Agriculture and by private firms. Early in the growing season, expectations are highly uncertain. However, commodity markets respond decisively to these projections, so you should be aware of them.

You should also be aware of prices received in your area and know the average prices received in previous years. Again, you have a choice of learning these skills and monitoring this information yourself, or hiring a professional to help you.

Financial considerations such as cash flow requirements, including family living needs, should be incorporated in your marketing plan. Financial circumstances and other personal factors help determine your ability and willingness to tolerate market risks. Marketing plans should be as unique as the financial, production, and management characteristics of each individual producer. What works well for a neighbor may not be appropriate for you and your family.

Marketing Plan Discipline

Marketing involves emotion, science, discipline, and analysis. The best marketing plan will fail without the self-discipline to stay on track. Unfortunately, letting emotions rule is easy when prices are moving. When prices rise, it is hard to resist trying to squeeze an extra few cents from the market. And, it is easy to panic when prices fall. In marketing, NOT making a decision IS a decision. A marketing plan is of little value if actual decisions deviate from the plan. Having a written marketing plan will help ensure discipline. Contingency plans, as part of the basic marketing plan, will also help. What to do if the price doesn't reach the desired level and what to do if the crop is not as large as expected are important contingency actions when the market does not develop according to your general expectations.

Understanding Financial Risk

Financial risk has three basic components:

1. the cost and availability of debt capital,
2. the ability to meet cash flow needs in a timely manner, and
3. the ability to maintain and grow equity.

Cash flows are especially important because of the variety of ongoing farm obligations, such as cash input costs, cash lease payments, tax payments, debt repayment, and family living expenses. Your objective should be to manage this risk through sound planning and financial control. To do that, you should continually monitor your ability to bear financial risk.

Farm Records and Financial Analysis

A set of well-maintained financial records is an absolute necessity to maintaining financial control of a farm or ranch. The flow of

information is critical in evaluating past performance and in planning for future accomplishments. Financial risk management is not achieved directly by maintaining comprehensive records. However, records do provide much of the information needed to understand critical financial risks.

Essential financial statements include the balance sheet and statement of owner's equity, income statement, and projected and actual cash flows. These records provide a history of your business and the data you need to calculate financial performance measures. Even small farms need a basic level of record keeping.

As the size and complexity of an operation grow, so does the need for financial records. Ratios such as debt-to-asset, debt-to-equity, and asset turnover are important in monitoring overall financial performance. Other measures can be used to monitor the financial status of the business and provide guidelines for future decisions. These examine liquidity, solvency, profitability, financial efficiency, and repayment capacity of the business.

Liquidity and Meeting Cash Flow Requirements

Ensuring liquidity and adequate cash flow is the same as ensuring the farm's ability to survive shortfalls in net income relative to various cash obligations. Assets classified as current on the balance sheet are assets that can be converted into cash within one operating cycle of the farm business, usually 12 months. Liquid assets include instruments that yield cash directly or that can be converted quickly to cash. Liquid assets include cash on hand, supplies, and crops and livestock to be sold within the year.

Adequate liquidity is essential to ensure a sufficient cash flow. Also, adequate liquid reserves can facilitate contingency plans for production disasters or poor market conditions. However, excess liquidity typically generates lower rates of return than fixed assets.

Timing is critical for ensuring adequate cash flows. With proper planning of expenses, cash flow needs can be known with reasonable certainty. This allows you to plan marketing decisions in advance and to take advantage of attractive pricing opportunities. Improving liquidity to ensure adequate cash flows can include reducing family living expenditures, using resources efficiently, leasing assets, and utilizing appropriate insurance programs.

Insurance

There is a lot more to risk management than buying insurance. But, insurance can complement many other risk management tools. Knowing these interactions in risk can help you get more value from your insurance dollar.

An annual insurance review should assure proper coverages and protection. Just because many insurance policies are automatically re-newel is no reason to neglect an annual examination of your insurance needs. A healthy "what if" session with your insurance professionals can help identify both weaknesses and opportunities in your coverage.

Family Living Costs

A significant component of financial risk is controlling and meeting family living costs. Reducing family living costs may not be feasible. But, careful scrutiny of your living costs should be an integral part of annual cash flow planning. In certain instances, off-farm employment can be a risk management strategy. It can ensure that living costs are met and can increase the family's standard of living. It may also reduce the need to liquidate farm assets to meet family living needs.

Understanding Legal Risk

Many of the day-to-day activities of farmers and ranchers involve commitments that have legal implications. Understanding these issues can lead to better risk management decisions.

Legal issues cut across 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 agriculture products involves contract law. Human resource 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 four broad categories: appropriate legal business structure and tax and estate planning, contractual arrangements, tort liability, and statutory compliance, including environmental issues.

Structural Issues

The first legal issue that many family farms encounter is the nature of the entity under which the business is to be operated. Often, through lack of attention, sole proprietorship is automatically chosen. However, alternative entities exist including partnerships, limited partnerships, limited-liability companies, and corporations (both Subchapters C and S) as well as a wide variety of trust arrangements. In addition, many States, and the Federal Government, have special statutory provisions for farms meeting certain criteria, such as a family farm.

Income and property tax consequences at the local, State and Federal level vary significantly, depending upon the legal entity chosen. Some structures lend themselves to the avoidance of estate tax and the ease of administration during probate. Liability to third parties is also a consideration in structural decisions, as is ease of operation within the chosen structure. Estate planning considerations may arise in the course of making structural decisions. Estate planning mechanisms range from simple wills to family farm corporations with complex inheritance provisions. Trusts, both living and testamentary, are often included in estate planning.

Contract 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 con- tracts. Many State and Federal farm programs are contractual in nature, such as the Conservation Reserve Program. Sale of agricultural products is often accomplished by contracts for future performance. Crop insurance coverage is also based on a contractual agreement. Even employment arrangements, although often not written, are treated as contracts. A basic legal issue pertaining to contracts is their enforceability. For instance, many States have what is known as a "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 before they are considered valid, include agreements for the sale of real estate and agreements which cannot be performed within one year.

Assuming a contract is legally enforceable, a concern arises as to nonperformance by a party to the contract. Obviously, nonperformance can come from the farmer or rancher, or from the other party to the

contract. In many instances, contracts specify what constitutes events of default and the remedies of the various parties in the event of default. If the contract is unclear, the courts generally employ two types of relief for breach of contract: specific performance and damages. In 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 party not in breach.

Contractual nonperformance can have ramifications well beyond the scope of the contract itself. For instance, the inability to meet contractual financial obligations to your mortgage lender may result in foreclosure. Alternatively, it may force you to seek other legal recourse, such as debt restructuring or liquidation in bankruptcy.

Statutory Obligations

A huge variety of statutory mandates apply to farmers and ranchers. These include tax reporting and payment obligations, wage and hour and safety requirements, compliance with nondiscrimination statutes, termination of employees, use of pesticides and herbicides, participation in certain farm programs, and many more. Although many in agriculture are not fully aware of their legal obligations, failure to comply may have serious consequences in terms of fines, penalties and abatement.

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. In recent years, tort liability has broadened significantly, to include what may be classed as employment torts, such as wrongful discharge. Another area of expansion has been in the so-called "toxic tort" area in which adjacent landowners, public groups, or others assert liability for damage to air and water quality on account of agricultural activity.

Environmental Liability

Pollution laws are a major concern for farmers. The courts are erasing the line between point and non-point pollution. Many of the newer liability policies exclude coverage for pollution claims entirely, forcing farmers to purchase special pollution policies. The pollution policies that are available contain unique characteristics that are unfamiliar to farmers. Managing liability risk begins with understanding liability insurance coverage.

Beyond having the proper liability coverage as protection, farmers must be prepared to deal with possible criminal prosecutions by State and Federal agencies for environmental events. Liability insurance affords no protection from criminal penalties assessed against a farmer by a regulatory agency. Farmers can greatly reduce their criminal liability exposure by formulating and following environmental audit procedures. Many good farmers fail to keep records necessary to prove compliance. Accurate records should be kept on the applications of herbicides, pesticides, and fertilizers.

Estate Planning

Estate planning is the process of planning for the final disposition of your life's work. Will the distribution be fair, and according to your desires? Life will be tough enough for your family and business partners after your death without leaving tough decisions for them to make. Estate planning is as much for them as it is for your peace of mind. Who should have an estate plan? Anyone with business or personal assets and with responsibility for children or parents should have an estate plan.

A few of the benefits of estate planning include;

1. A reduction in estate tax liability, where there is sufficient wealth to exceed the legal life time limit, thereby preserving more assets for your family.
2. Peace of mind for you and your family.
3. A distribution of assets which is according to your wishes.
4. An assurance that your business will continue with the least amount of disruption.

Understanding Human Risk

Most families that successfully work together have evolved a good management system, although they usually don=t think about it as a management system. Their system flows from the interdynamics of lifetimes spent together, of giving and taking, of listening to and respecting one another. But, even small family farms can benefit as much as large operations from clearly defining how plans and decisions are to be made for the business. Involving everyone, family and outside employees, in the planning process can create a sense of group ownership of the goals of the organization. Workers who understand why and how decisions are made, and exactly what their responsibilities are, will see opportunities for the organization and for themselves inside the organization. Formalizing planning and management can improve safety performance and reduce legal risks arising from employee relationships.

Human resource management is best viewed as a process. Seven functions describe that process:

1. Job analysis and job descriptions,
2. Hiring
3. Orientation and training,
4. Employer/employee interaction,
5. Performance appraisal,
6. Compensation, and
7. Discipline.

Remember that hired labor is not the only component of your human resource team. Family, managers from outside the business, consultants, and external advisory committees can also be a part of your team. It is important that everyone on your management team understands your risk management tools.

Human resource calamities can hamper even the most carefully made and appropriate risk management decisions. Those calamities include divorce, chronic illness, and accidental death. Your risk management plans should anticipate the likelihood of human resource calamities. Remember that risk management strategies are implemented through people. Every manager's job description should have explicit risk management duties and delegations of power and authority to manage risk.

Identifying risks and strategies for managing those risks is an important part of business planning and can give employees confidence in their own long-term future with the organization. That is especially true of family members. For family members, business planning should inevitably lead to estate planning.

Where Do You Stand?

Have you taken the time to evaluate risk in your operation? What is your risk tolerance? Do the people you communicate with in your operation know your risk tolerance? These are a few of the many questions that need answered in today's agricultural risk environment.

An agricultural manager must spend time answering questions like these. But it does not stop there. This is not a one-time process; it is an ever changing and evolving process.

As we are all well aware of, the world around us changes by the minute and we must be flexible and change with it to take advantage of opportunities when they present themselves.

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[1] Harwood, J., R. Heifner, K. Coble, J. Perry and A. Somwaru. 1999. Managing Risk in Farming: Concepts, Research and Analysis. Agicultural Economic Report No. 774. Market and Trade Economics Division and Resource Economics Division, Economic Research Service, U. S. Deparment of Agriculture. March: 1-125.