U.S. agriculture producers have always dealt with risks, from weather to unpredictable supply and demand changes to volatile costs and market prices. Today’s producers must navigate through an even greater number of unknowns, as agriculture has become a capital-intensive, high input-cost business in an increasingly global marketplace.

Sound risk management in the 21st century requires producers to manage risks to profits in terms of both production costs and commodity prices. While they can choose any of a variety of approaches in developing a formal risk management plan, to be successful, producers must understand the current business climate, develop a written marketing plan to help manage risks, and periodically review and update the plan so that it continues to achieve operation and profitability goals.

CURRENT RISK CLIMATE

According to Laurence Crane, vice president of education and communication with the not-for-profit National Crop Insurance Services (NCIS), agricultural risk previously was synonymous with production risk. “Although weather poses the greatest risk, any event or action that causes variability in production is considered a production risk,” said Crane.

Over the past several decades, however, improvements in technology and production practices have modified the negative effects of weather and production risk. Biotechnology, improved pest and disease control, and better management strategies have helped producers curb economic losses and even maintain crop yields in the face of adversity.

But Crane believes that agricultural industrialization – including vertical integration, contractual arrangements and value-added or identity-preserved production – generate new areas of production risk. Vertical integration, for example, requires producers to raise a specific product to meet a predetermined demand. Crane asserts that meeting processor requirements for quantity, quality and timing can pose significant production risks. Agricultural producers have also seen a rise in non-production risks, including those in marketing, financial, environmental and legal realms.
Risk Management for Modern Agricultural Operations

Risks are associated with the introduction of non-agriculture investors/speculators in commodity futures, greater demand for debt capital as a means of leveraging growth, pressure from “green” groups to increase regulations on environmental protection and food quality, and litigation. Profit margins narrow as a result.

As agricultural production becomes more specialized and industrialized, Crane anticipates that associated risks, along with opportunities for profits and losses, will increase. Producers should take time to understand risks and account for them in their plans.

Marketing Risks

A study released in the fall of 2009 by the U.S. Department of Agriculture Economic Research Service (USDA-ERS) found that, although the traditional roles of commodity markets remain risk management and price discovery, futures are increasingly used in various forms of investment vehicles. The number of hedge funds and other new monies in the commodity markets has grown dramatically with the opportunity for non-production risk for producers to monitor.

Prior to the crisis, the accepted lender minimum for working capital was 15-20%. Once commodity prices and input costs began to rise, the acceptable range became 20-25%. In 2009, minimum working capital rose to a record high: 25-30%

The American Bankers Association relayed in its 2012 Farm Bank Performance Report that banks increased farm and ranch lending by 13.9% – $10 billion – in 2012, holding $81.8 billion in farm loans at year-end, which represents more than half of all farm loans ($141 billion). Small loans made up almost half of year-end, which represents more than half of all farm loans ($141 billion). Small loans made up almost half of loans ($141 billion). Small loans made up almost half of bank farm and ranch lending (nearly $74 billion). Nonperforming loans declined to 1.4% of total loans, which rose to a record high: 25-30%

Environmental Risks

Agriculture has wide-ranging impacts on the environment. USDA-ERS officials single out the potential impact on wildlife habitats, soil erosion, nutrient and pesticide runoff, air, water and soil quality.

The risks associated with these issues vary by operation. As the population continues to grow and consumers continue to push their boundaries into traditionally rural areas, producers must be aware of possible risks to production agriculture. The end result could be growing pressure on local, state and federal regulators and lawmakers to address issues.

Liquidity Risks

Agricultural producers today face domestic and international pressures, in addition to environmental and technological stressors, that can be a hotbed for a litigious society. Producers may have to address, personally or as an industry, such legal issues as environmental regulations, immigration laws, business restructuring, food safety concerns, eminent domain, water and property rights, business liability and more. Such issues must be factored into risk management plans.

RISK MANAGEMENT AND MARKETING

Changes in production and non-production risk factors underline the importance for producers to create and implement a risk management plan for today’s agricultural and food environment. Profit should be defined as the cost of staying in business while still being able to capitalize on growth. Producers must evaluate potential environmental and risk management tools.

Risk management should revolve around a business-oriented marketing plan. John Berry, with the Penn State Cooperative Extension in Lehigh County, says such a plan should have three steps:

1. Estimate cost of production and expected break-even prices.
2. Create a marketing plan.
3. Develop a follow-through plan.

1. Estimate Cost of Production

Berry asserts that producers who market without cost of production information can only enhance the price they get for their product. Setbacks must be handled without full knowledge. But producers who market with an understanding of cost of production are equipped to make decisions about acceptable prices, prices that cover critical costs and risks of not taking certain prices. Knowledge of costs enables producers to estimate prices to cover various enterprises and the operation as a whole.
Risk Management for Modern Agricultural Operations

Berry recommends that producers use a record-keeping program that tracks cost of production so that historical perspective is available. When coupled with estimates of input costs and prices for the following season, producers can estimate cost of production and break-even.

Berry says a good production worksheet should contain sections detailing operating and ownership costs, including cash and non-cash costs. Berry defines cash costs as expenses that require cash to be paid to the supplier. Non-cash costs include depreciation in equipment and land interest.

A related approach recommended by the University of Maryland Extension Service is to track the value of the total crop. A crop pricing summary (CPS) provides a useful method of following the value of total or expected production as it changes weekly. The CPS incorporates all revenue associated with a crop — sales, hedges and payments, for example. The goal is to encourage producers to focus their attention on changes in the entire value of the crop, which decreases the likelihood of marketing only a portion of the crop.

The CPS promotes objectivity in decision-making, improves communication with lenders and family members, and provides information for evaluating past decisions. When used in conjunction with a marketing plan, decision-making improves.

2. Create a Marketing Plan

Marketing plans are “road maps” used to identify goals, objectives and tactical steps involving the use of marketing tools. They should be written down, to serve as a benchmark from year to year, and shared with others for feedback. Marketing plans enable producers to track activities and identify issues early, thus preventing costly mistakes.

One way to set up a marketing plan is to use a computer-based program like AgRisk, which was designed to help producers manage harvest-time revenue risk. AgRisk, like other formal and informal marketing plan tools, helps keep plans dynamic. As production and non-production risk factors change, plans should be adjusted.

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AgRisk predicts distribution of gross revenue at harvest time under different pre-harvest risk management strategies that may involve multiple peril crop insurance, crop revenue protection insurance, group risk plan insurance, price options and futures, and various pricing contracts offered by elevators and processors. By comparing how gross revenue distributions vary across different strategies, producers are better informed about risk management options.

A closer look at the key steps used to develop a marketing plan can help set the right course:

Financial Goals. Financial goals are an important factor to consider when creating a marketing plan. Producers should begin with a review of their individual financial situations. A review will provide initial ideas about the amount of risk operations can bear. Goals and objectives, personal risk preferences, age and other factors may influence decisions about what to produce, how to produce it and how to market it. Lender requirements also may come into play, as profitable risk protection may be required prior to loan approval. Always consult with a loan specialist.

Price Goals. Once cost of production is estimated, production decisions are made and financial goals are reviewed, producers can establish price goals that should return a profit to the operation. Texas A&M specialists say price goals should include obtaining enough income to pay production expenses and debt obligations and provide ample income for cash flow, as well as possibly contribute capital to operator equity or additional operation or family goals.

Market Outlook and Expectations. Financial and price goals are paramount for setting producers up for success, but that’s not the end to the marketing plan process. Producers must monitor markets and try to determine where prices may or may not trade during the marketing year to determine when to sell production.

Texas A&M economists advise that knowing how markets typically act, especially seasonally, can help in developing a marketing strategy. For example, seldom will the highest price

For a seasonally produced commodity occur when harvest is under way. Global supply and demand factors may influence price direction in both the short and long run. Consider what some of those factors might be in any given marketing year, and watch those factors regularly.

Production Risk Tools. Mother Nature cannot be controlled. Some production risk that cannot be managed through agronomic strategies may be managed through pricing tools like crop yield futures and options, and insurance.

Texas A&M specialists note that while crop yield futures and options have not been popular, crop insurance has. Insurance providers now offer products to cover yield and revenue risk. Such tools allow more flexibility for pre-harvest pricing.

To understand all of the crop insurance options available, producers should sit down with a licensed agent and outline business needs and goals. Agents can help identify which crop insurance products will most effectively meet producer management needs.

Price Risk Tools. Producers have a wide array of pricing tools at their disposal and should choose those that feel comfortable, whether cash forward contracts, hedging with futures and options, minimum price or basis contracts, cooperative sales, harvest cash sales and/or storage. Each has advantages and disadvantages in any given year within any given operation.

From the USDA-ERS report “Issues and Prospects in Corn, Soybeans and Wheat Futures Markets,” authors advise producers to regularly re-evaluate pricing and risk management strategies given ongoing changes in the marketplace. For example, price volatility could result in discounted contracts from a widening basis and lower-than-normal cash prices relative to futures prices.

Producers who traditionally rely on cash forward contracts may want to explore hedging in the futures markets. The downside is the potential for margin costs and basis risk. Another option might be using basis contracts to eliminate basis risk, although those contracts can be as limiting as forward contracts. Options offer another solution, although the possibility of adverse basis moves and the need to pay premiums can be disadvantages for some producers.

Producers with less capital should not count exclusively on cash sales or forward contracts. Options can be good tools for producers with fewer assets and capital. For example, young producers may need to

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build up equity and cash liquidity to protect what they have without limiting upside potential.

Some hybrid grain contracts offer a floor and some range to the upside. Buying put and selling options against them requires less money but still offers the opportunity to take advantage of a major price move in either direction.

Producers should explore these and other pricing options through their own research and in conjunction with analysts and merchandisers to determine what is best.

Assume you buy a $7 strike price November soybean call option for a premium of 30 cents and subsequently the November futures price rises to $8.

The buyer will make money by exercising the option (which places him/her in the futures market buying futures at $7) and then offsetting the futures position by selling futures. A gain of $1 is received when the buyer offsets the futures position at a price of $8. After deducting the 30 cent premium, the net return is 70 cents ($1.00 - .30 = .70), assuming no trading cost.

When the buyer exercises the option, the option seller must sell futures at $7. A loss of $1 is incurred when the option seller buys futures at $8 to offset the futures position. After accounting for the 30 cent premium, the net loss is 70 cents ($1.00 - .30 = .70), assuming no trading cost.

Penn State's Berry recommends that plans contain both offensive and defensive marketing strategies. Offensive sales occur when producers sell at predetermined prices that cover costs. Defensive sales take place when producers sell some production to lock in income that might otherwise be lost. Quantity sold in either situation depends on how much of expected production may be marketed at different times throughout the year while minimizing downside price risk.

Berry also recommends not marketing all production at one time. Since grain in the field is not necessarily grain in the elevator, forward price should be less than 75% of expected production.

Other factors that may influence sales include cash flow, storage costs and the need to empty bins. Marketing plans should take into consideration dates for major expenses, and allow for shrinkage, spoilage or interest that could be earned on cash rather than crops in the bin.

Finally, if a marketing plan is going to work, producers must hold accountable for making sales at predetermined levels. Berry suggests spouses are often in a good position for this role. Marketing clubs, brokers and business partners can also help. In addition, marketing plans demonstrate consistency and reflect overall marketing attitudes. With a consistent plan, producers are more likely to follow daily markets and make marketing decisions.

“If you keep your marketing plan simple, the emotion and stress associated with it will also be kept to a minimum. The emotions of greed, hope or fear should not control market actions,” said Suzanne Karberg of Purdue University. “The prospect of an extra half-cent shouldn’t lure you away from a planned, consistent approach to marketing. Financial experts cannot outguess the market; farmers should not try.”

University of Maryland educators urge producers to review marketing plans at least once a month and no more than once each week, unless market conditions or a change in situation dictates a different schedule. Such condition changes might be right before harvest, due to uncertainty associated with predicted production; during times of market volatility; and at times when individual situations warrant.

Texas A&M specialists tell producers that they should review plans not only regularly during the marketing year but also at the end of each season. Determine what worked and what didn’t – and why. Then adjust the plan for the following year. Profit is a return to risk, and producers cannot reduce all risk every year and still expect to profit.

Develop a Follow-through Plan

Once cost of production is estimated and the marketing plan is written down, the best way to determine whether it’s working is through periodic reviews of the plan. Make sure plans demonstrate consistency and reflect overall marketing attitudes. With a consistent plan, producers are more likely to follow daily markets and make marketing decisions.

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Fig 5: Call Options Example

Source: Ag Decision Maker, Iowa State University

Become a Better Marketer

Putting together a marketing plan can be tough. The University of Maryland Extension offers these helpful hints for producers to become better marketers:

> Become familiar with market terminology. Failure to understand market terms puts up unnecessary barriers to effective marketing.

> Seek out market information. The former Chicago Board of Trade website at cmegroup.com may be a good place to start for prices, charts and information.

> Become familiar with the types of marketing alternatives offered, and understand both the futures and options markets. Evaluate all tools.

> Understand and follow the markets closely. Study domestic and world supply and demand balance sheets, local market conditions and basis. Obtain market outlooks from at least two or three different sources.

> Understand the limitations of price forecasting. No one can predict price accurately and consistently. Just seek to sell in the top third of the annual price range.
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