Managing your production risk

by Chris Bastian

New farm legislation and freer global trade will lead to changes that will increase risks to producers in the years to come. Agricultural producers experience risks unknown to those involved with other types of production. Weather, diseases, pests and infertility are all factors that give rise to yield variability. Studies show many managers rate business survival as their most important goal. Managers often are willing to accept a lower expected income if it reduces income variability and the risk of business failure.

Several approaches address income variability associated with production risk. Product diversification is a method through which producers can avoid having their income totally dependent on one enterprise. If profit from one product is poor, the returns from other enterprises may prevent total profit from falling below acceptable levels. This approach may reduce income variability if all product prices and yields are not low or high at the same time.

The extent to which diversification can reduce income variability for a farm or ranch depends on the price and yield correlations for the selected enterprises. If prices or yields for products tend to move up and down together, little is gained by diversifying. When yields and/or prices for selected enterprises move in opposite directions, income variability will be reduced. Additionally, the extent to which income will be smoothed out depends on the corresponding proportion of income derived from each product. If only a small proportion of income comes from one product or the other during good years, then it has little affect on total income if a disaster happens to the product from which most of the income is normally derived.

Weather is the primary factor influencing crop yields. Crops with the same growing season experience the same weather, and their yields tend to have a strong positive correlation (i.e., yields move up and down together). The yield relationship between crops that have different growing seasons and are susceptible to different insects and diseases will be less. Production rates among different types of livestock correspond less closely, and there is little correlation between crop yields and livestock performance.

Most studies on price correlations for major agricultural commodities show that pairs of commodities with a strong yield correlation often have a positive price correlation as well since year-to-year production changes have a major impact on prices. Some specialty crops such as fruits and vegetables, however, may show a weak or even negative correlation with some of the major field crops.

Diversification plans can include non-farm or ranch activities as well. Investing in stocks or bonds, carrying out a part-time business unrelated to agriculture, or holding an off farm or ranch job can improve the stability of family income. Diversification may mean giving up the benefits of specializing in one enterprise in order to gain the benefits from less variability in income. Information is available from your state statistics service or Cooperative Extension office to help discover price and yield correlations for the enterprises you are considering. This information will be helpful in determining if the enterprises of interest could reduce your income variability.

When adding a new enterprise to your operation, you might want to consider several factors. You may have to learn new practices and requirements for producing a new commodity. Realize that as you learn what works and what does not, the quality and quantity of the output may be below average the first few years. The amount of learning required for these endeavors will probably be related to how new and different the operation is for you. Market considerations also are important when adopting a new enterprise. Find out the specifics of who, what, when, and how you can market the new product. Other considerations like cash flow requirements, availability and timing of machinery, labor, management, and other resources also should be considered during your planning process.

Another strategy that can reduce income variability associated with production risk is crop insurance. The first decision you must make concerning crop insurance is whether you have enough financial reserves to cover a disastrous crop year. If the answer is no, then crop insurance may be an option to consider in your management plan. Crop insurance can ensure a reliable level of cash flow, and insured production can be forward-priced and reduce the chance of not being able to meet contractual obligations.

Insurance companies offer a wide variety of crop insurance packages and protection levels. Probably the most familiar packages are crop hail and multiple peril crop insurance. Crop hail insurance provides protection against hail damage, while multiple peril insurance provides coverage against most natural disasters. Yield protection in multiple peril crop insurance is based on your own production history. Group risk protection (GRP) is similar to the protection you receive with the basic multiple peril insurance except yield guarantees and indemnity payments are based on county yields rather than individual farm yields. This type of coverage is attractive to producers whose farm yields follow closely with county yields and are wide geographical areas often affected by natural disasters. Crop insurance is available on more than 60 crops at this time. Producers can apply for the Noninsured Assistance Program (NAP) for those crops that are not insured in their area or not insured at all. You must apply for NAP prior to planting through your local USDA Farm Service Agency office.

Questions you should ask yourself when looking at crop insurance are what is the minimum cash flow I need to meet my debt obligations and stay in business, and what are the major sources of crop risk in my area? Once you have answered these two questions, you then can decide on a crop insurance package that will meet your minimum cash flow needs and cover the type of production risks in your area. Just like car insurance, the more extensive the coverage, the higher the premium. Thus, it is usually better to set some minimum level of coverage rather than over-insure.

When considering crop insurance to reduce income risks, you should call your insurance agent early in the planning process and get information about the types of available insurance, levels of coverage, premium costs, and closing dates after which those products will no longer be available. This information coupled with an estimate of your minimum cash flow requirements and major sources of production risk gives you an excellent starting place to develop a plan for using crop insurance to your advantage. This information also can help you decide on product diversification strategies. Using only crop insurance or product diversification may not meet all of your cash flow goals. You may need to look at several enterprise mixes along with crop insurance to develop a management plan that will ensure the survival of your business in today's riskier market environment.

Chris Bastian is the Extension Marketing Specialist in the Department of Agricultural and Applied Economics at the University of Wyoming. He also serves as the Chairman of the Western Extension Marketing Committee.