"Nothing is more uncertain that uncertainty" — Anonymous

Confront risk dead on

choose the right crop mix

by Doug Wilcox, MCIC

Many producers, when they try to identify their risks, get confused between risk and uncertainty. There are an infinite number of uncertainties in farming, but only a limited amount of risk.

Risk can be defined as "uncertainties that matter." Risks can either help producers achieve their objectives (positive risks – opportunities) or hinder them in achieving objectives (negative risks – threats). When identifying risks, producers need to look for uncertainties with an upside as well as those with a downside.

By identifying real risks producers can focus on the uncertainties that matter, rather than be distracted and diverted by irrelevant uncertainties. Real risks should be managed through a proactive risk management process.

For an individual producer, the risk management process involves finding a combination of activities that reduce the effects of negative risk, maximizes the benefits of positive risk, and in so doing, improves the farm's position.

Remember you can't avoid risk; all a producer can do is make sure the balance leans towards positive risk.

Risk management is not free. At the very least it will likely require extra research time. None-the-less it is essential. A deliberate and knowledgeable approach to risk management needs to be a vital part of every successful producer's business plan.

Having a good risk management strategy means not only can you operate your farm from a strong position today, but that you have greater flexibility to deal with future events as well. Good risk management leads to a more stable income. A more stable income can make the difference between having a resilient farm that can survive and adapt and one that experiences business failure.

There are three main risk management strategies available to producers to increase income stability.

The first is to reduce risk within one's farm operation (e.g. diversification), the second is to transfer risk off the farm (e.g. crop insurance) and the third is to build up the farm's capacity to bear risk (e.g. integration).

Your Crop Insurance agent can discuss with you the advantages of transferring risk off the farm and every producer differs in their ability to bear risk and in their attitude towards accepting risk – so I won't discuss these strategies.

The strategy I would like to discuss is how one can reduce risk within one's farm operation through diversification.

Just like an RRSP where sufficient diversification in the portfolio is necessary to reduce the risk, sufficient diversification of your crops is necessary to level out the lows and highs.

Certainly your crop and acreage options will be limited by market availability, agronomic considerations, and equipment requirements. But once you've narrowed your crops down to a handful of realistic options how do you decide what you are going to grow, and how much?

In weighing their options most producers focus on potential annual profitability. Annual profitability is not the only criterion that should be used. Risk management is also important. However not having a quantitative measure of the relative risks associated with different crop mixtures has meant that producers have had to rely on gut feel.

A quantitative measure of the risk changes associated with various crop mixtures could take the decision beyond potential annual profitability and gut feel and should lead through improved decision-making to a more resilient and profitable operation.

A new tool to sharpen your decision making

As you are aware crops vary in their responses to weath= er events. This difference in crop response can be capitalized on to reduce the overall risk of your operation. If something happens to reduce the yield of one crop, there can be offsetting by the other crop, meaning that income is not as likely t be adversely affected as when the total farm was planted to one crop.

The difficulty in the past was to know the relative risk reduction resulting from choosing a particular crop mixture. With Manitoba Crop Insurance (MCIC) having developed the "Crop Coverage Plus" (CCP) basket crop insurance program, this is no longer the case.

This program looks at yield correlation, or how crops move together in terms of yield ups or downs, and identifies the crop

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mixes which historically have reduced overall farm yield variability in a particular risk area, and by how much.

MCIC then uses this information to allow producers to have higher coverage under the CCP Program — but you can use it to determine which crop combinations are optimum from a risk standpoint.

This spring there will be an on-line CCP Inquiry tool available to registered MCIC clients through the "MyMCIC" account on the www.MCIC-Online.com web site.

The CCP scenario calculator can be used as a computer assisted decision-modeling tool to help analyze different crop mixes on your own farm — even if you do not want CCP basket insurance.

Does diversification reduce risk?

The CCP scenario calculator can be used to help assess the lowest yield risk combination for your farm operation.

As an example look at Table 1.

I took a Risk Area 12 farm of 2000 acres and divided into 4 equal sized units (500 acres each). I then analyzed how various combinations of crops on these 500 acre blocks changed the yield risk represented by the percentage coverage available through CCP – the higher the coverage value the lower the crop mix risk.

The results support common sense. Growing four different crops was less risky than growing three different crops and this was less risky than growing two different crops and growing two different crops was better than growing a monoculture.

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Table 1. Crop mix combinations (e.g. CFWB) and coverage level equivalent (e.g. 89) for a Risk Area 12 farm in Manitoba divided into four units. The crop mix combinations are coded as follows: C= Canola on _ of farm, F = Flax on _ of farm, W = RS Wheat on _ of farm, B = Barley on _ of farm. The higher the value of the coverage level equivalent for the mixture, the lower is the yield variability risk of that mixture.

ONE CROP	
BBBB	80
CCCC	80
FFFF	80
WWWW	80
TWO CROP	
CBBB	86
CCBB	86
CCFF	86
CCWW	86
CWWW	86
FFBB	86
FWWB	86
CFFF	85
FBBB	85
FFWW	85
CCCB	84
CCCF	84
CCCW	84
FFFB	84
FFFW	84
FWWW	84
WWBB	84
WBBB	83
WWWB	83
THREE CROP	
CFBB	88
CFFB	88
CFFW	88
CFWW	88
CCFB	87
CCFW	87
CCWB	87
CWBB	87
CWWB	87
FFWB	87
FWBB	87
FOUR CROP	
CFWB	89

Table 2. The coverage level equivalent associated with various crop acreage combinations for a 2000 acre Risk Area 12 farm in Manitoba. The higher the value of the coverage level equivalent for the mixture, the lower is the yield variability risk of that mixture.

Wheat Acres	Canola Acres	Corn Acres	% Coverage
1000	1000		86
750	1000	250	86
500	1000	500	85
250	1000	750	83
100	1000	900	81

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It gets more interesting when you look at the results from within a particular crop grouping. In this example, looking at the Two Crop grouping, mixtures involving canola on half or less of the acres would be less risky than mixtures without canola, or with canola on more than half the acres.

Looking at the Three Crop grouping, only mixtures with canola and flax with canola on one quarter of the acres were lower risk than other combinations.

These results were for this example farm in the example area; your operation may differ. Using the CCP scenario calculator you can quantify the relative risks associated with various crop combinations on your own farm.

Thinking about trying something new in your operation? Experts suggest devoting only a portion of your operation to a new crop that you have never grown before. Typically they suggest devoting no more than 20 to 40 per cent of your farm acreage to this new crop.

Part of the rationale for this limited acreage may be due to the associated changes in risk. Table 2 illustrates what happens on this Risk Area 12 example farm as we start with a farm growing wheat and canola on equal acreage and gradually replace wheat in the operation with grain corn.

Switching to 250 acres of corn doesn't change the risk but as the acreage of corn continues to increase so does the relative all farm yield risk (the coverage potential gets smaller). It is also interesting that adding the third crop (grain corn) did not reduce risk — unlike the crops used in Table 1 example.

Using the CCP scenario calculator you can quantify the relative risks associated with introduction of new crops to the crop mix for your own farm.

Wrong tool, right job?

Contrary to my father's preaching I've often used the wrong tool for a job because it was better than no tool at all. I've driven nails for hanging pictures with the handle of a screwdriver.

I've also used pliers when I should have used a pipe wrench. Out of necessity I'll bet that you've used the wrong tool at times as well.

The CCP inquiry tool has limits — it was designed by MCIC to determine how much additional coverage MCIC could offer through basket insurance, not to determine relative agronomic risk of various mixtures.

Among it's other limitations, it does not take into account price differentials between the crops. None-the-less, the CCP Inquiry is the first tool available to quantify the risk of various crop mixtures and it is uniquely available to Manitoba producers through MCIC. Until something better comes along it is the only tool for the job.

In 2005 MCIC is offering a basket insurance program called Crop Coverage Plus (CCP). Under this program all included crops have their yields pooled in one "basket" so that production loss in one crop may be offset by above average yields in another crop.

This offsetting enables MCIC to offer a higher coverage level. However, this higher coverage is only triggered in years were there are significant losses (ie. where most crops in the basket have reduced yields). Over the long term the CCP program will pay out the same indemnities as the traditional crop-by-crop insurance program — payments under this program will be less often, but larger.