

PLANNING FOR ON-FARM SUCCESS

*A Workbook for Montana's Beginning
Farmers and Ranchers*



Module 5: Financial Planning



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This workbook draws heavily from the following publication, which can be viewed online at misa.umn.edu. In addition to a large amount of the body of the document, all worksheets, unless otherwise noted, come from the following publication:

Minnesota Institute for Sustainable Agriculture. *Building a Sustainable Business: a guide to developing a business plan for farms and rural businesses*. College Park, MD: Sustainable Agriculture Research and Education (SARE), 2003.



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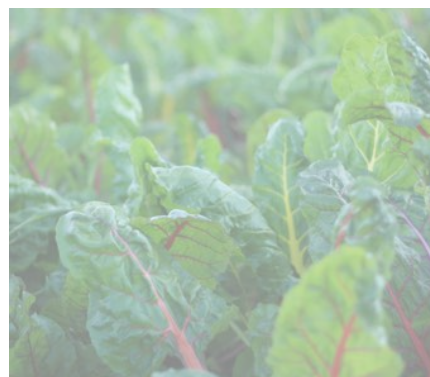


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Editor

Annie Heuscher, Community Food & Agriculture Coalition

Contributors/Reviewers

Seth Swanson, MSU Extension

Tammy Hinman, National Center for Appropriate Technology

Amita Patel Greer, Montana Community Development Corporation

Jan Tusick, Lake County Community Development Corporation

Bonnie Buckingham, Community Food & Agriculture Coalition

Tara Beley, Risk Management Agency

Brianna Ewert, Farmer

David Wise, Community Food & Agriculture Coalition

Autumn Lee, Community Food & Agriculture Coalition

Cedar Brant, Nourish the Flathead

Additional Partners

Montana Farmers' Union

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Module 5: Financial Planning

You have figured out your marketing, who's going to buy your products and why, and how you're going to produce them. You've dug into your costs and identified income goals for each of your marketing channels. The next question is: Will your business make it? Will you be able to accomplish your personal goals while you cover your costs, generate the income you need to cover your expenses, pay your debts, and build equity in the long run?

The evaluation process can be as sophisticated and comprehensive as you like, and there are a wide range of helpful tools available. This module presents the main financial planning tools:

- Ratios to evaluate your financial performance
- Break even tools to identify the balance between your production levels and your prices
- Partial budgeting and return on investment (ROI) tools to make decisions about new business ideas or major purchases

Financial planning is all about using the numbers you've collected to help you run your farm. Whether you're trying to figure out how your business is doing right now or you're trying to evaluate whether you can afford to buy a tractor, financial planning will help you get there.

Ratios

How am I doing now? This is one of the biggest questions we try to answer in financial planning. You can look at a balance sheet and see that you have more assets than liabilities. You can look at an income and expense statement and see that over the course of the year you made a profit. But how can you measure your financial performance overall?

The national Farm Financial Standards Council (FFSC) has identified 16 measures, or "ratios", around the five basic financial performance area measures (liquidity, solvency, profitability, repayment capacity and efficiency). Ratios are a tool that lenders use to judge the absolute and relative strength of a business – meaning that a lender may use a ratio to evaluate your business. Therefore, it can be helpful to evaluate those ratios yourself before you're sitting at their desk. We won't go into all sixteen but we have included the four most common ratios in Worksheet 5A: Financial Ratios. One thing to remember about ratios is that they aren't necessarily a standalone testament to business strength, but they are good for identifying issues with financial performance and getting a quick snapshot of financial health.

The two you're most likely to encounter are the current ratio, which evaluates liquidity, and the debt-to-asset ratio, which evaluates solvency. **Liquidity** refers to the short-term wellbeing of your farm. It tells you whether you have enough money coming in from your business over the next 12 months to pay all your bills that are due in the next 12 months. The **current ratio** is your current assets divided by your current liabilities (find both these numbers on your balance sheet and find more on these terms in the glossary in Module 4). A current ratio of 2:1, with two dollars of assets for every dollar of debts, is usually considered adequate. If your current ratio approaches 1:1, your ability to sustain your business during a financial downturn may be limited.

As a very simple example, let's say that your checking account has \$10,000 in it and you have \$5,000 in cattle that you will sell in the fall. In the spring, you took out a \$5,000 operational loan from the Farm Service Agency that's due in full the fall and you currently have an invoice on your desk for hay you purchased last month for \$2,000.

$$\frac{\text{current assets}}{\text{current debts}} = \frac{\$10,000 + \$5,000}{\$5,000 + \$2,000} = \frac{\$15,000}{\$7,000} = 2.14$$

This means that your current ratio is greater than 2:1 which means your business is “liquid” and could withstand shocks effectively in the short term.

Solvency refers to your ability to pay off all your debt if the farm were sold today. Remember hearing about homeowners who were “under water” during the 2009 mortgage crisis? That means that their liability (what they owed on the house) was higher than their assets (what the house was worth). That would mean they were insolvent. The **debt-to-asset ratio** is simply your total liabilities divided by your total assets (also from your balance sheet and defined in the glossary in Module 4). By “total” we mean both your current and long-term liabilities and assets. When calculated based on the market value of your assets, a debt-to-asset ratio under 40% is usually considered comfortable; over 60% is usually considered vulnerable.

For another simple example, let’s say you owe \$5,000 on your tractor and \$160,000 on your home. In addition, you have \$10,000 in a savings account and \$5,000 in cattle that you will sell in the fall. Your tractor is valued at \$15,000 and your home is valued at \$250,000. Your debt-to-asset ratio would look like this:

$$\frac{\text{debts}}{\text{assets}} = \frac{\$5,000 + \$160,000}{\$10,000 + \$5,000 + \$15,000 + \$250,000} = \frac{\$165,000}{\$280,000} = 0.59 \text{ or } 59\%$$

With your debt-to-asset ratio being so close to 60%, your bank might want to see additional income sources, like new markets, products, or an off-farm job before lending you additional money. Again, ratios won’t be the only thing your lender will look at, but they are intended to give a snapshot of your farm’s overall financial health.

Break-Even Tools

A break-even analysis is probably one of the most useful calculations that you will perform when considering alternative business strategies. It tells you, very simply, the point at which you’ll start making more money than you spend. You can calculate a break-even volume to determine what level of production is necessary to start making profits when your products are at a certain price point.

On the flip side, if your output or production volume is fixed, try calculating a break-even price to determine what product price is necessary to start making a profit based on a set level of production. If neither your price nor output is fixed, these calculations can be used to develop production and price floors for each enterprise—something that will be useful for future monitoring and decision-making.

Remember that in either case, your break-even analysis doesn’t tell you how much profit you will make – it only calculates the point at which you can *start* making profits - the point when you will be just breaking even. To gain a profit, you’ll either have to produce more than your break-even volume or charge more than your break-even price. Use Worksheet 5B: Break-Even Analysis to work through these processes for your farm.

Calculating a break-even volume

When you know your prices and you’re trying to figure out how much you need to produce, try calculating your break-even volume. The break-even volume is calculated by dividing your total overhead costs by the sales price minus your variable costs. Remember from the financial concepts glossary in Module 4 that overhead expenses are the costs that don’t vary based on your production levels, i.e. insurance, rent, taxes, living expenses, etc. These are sometimes also called “fixed” expenses. Substitute the DIRTI costs (depreciation, interest, repairs, taxes, and insurance) for the actual purchase price of machinery and other capital purchases when estimating your overhead costs. Because your overhead costs need to be covered regardless of the amount of product you produce, they are a key number in this calculation. On the bottom half of the equation, variable expenses are subtracted from the price of the product so that all costs are captured in the equation. Remember that variable costs are the ones that do vary

$$\text{Break-Even Volume} = \frac{\text{overhead expenses}}{\left(\text{Price per unit} - \text{Variable expenses per unit} \right)}$$

with production, such as seeds, feed, or shearing. Both of the numbers on the bottom of the equation are expressed per unit because you're ultimately looking for the total number of units you need to produce to break even.

As an example, let's say you're producing whole lambs to sell through a buying club. You've put together your budget and you know that your costs of running the farm (overhead expenses) are \$40,000 per year. That price includes your living expenses, farm maintenance expenses, and costs of the mortgage, machinery, labor, pasture maintenance, marketing, and other overhead costs. You know that for each lamb, your costs for breeding, veterinary bills, feed, transportation, and other variable costs are \$200 per year. Although you know that your final hanging weights will vary, you know that your average hanging weight gave you a per lamb market price of \$500 per lamb. Your break-even volume calculation is as follows:

$$\frac{\text{overhead expenses}}{\text{price per unit} - \text{variable expenses per unit}} = \frac{\$40,000}{\$500/\text{lamb} - \$200/\text{lamb}} = \frac{\$40,000}{\$300/\text{lamb}} = 133.33 \text{ lambs}$$

Remember that doesn't mean you need to sell 134 lambs to have a successful business. That means you need to sell 134 lambs to break even at that price. If you know that you want to make at least \$10,000 in profits to put back into the business each year, add that into your overhead costs. Try experimenting with a range of market prices to see how they affect your break-even production levels. If you don't think you can produce more than 134 lambs, how can you reduce your expenses or increase your prices?

Calculating a break-even price

If your production volume is fixed—either because of production capacity or sales contracts—calculate a break-even price for your product; in other words, determine what market price is needed to cover your variable and overhead costs. Break-even prices are calculated by dividing your total costs for the product or enterprise by the total quantity you expect to produce or sell. Again, your total costs are the sum of your overhead and variable expenses for the enterprise.

$$\text{Break-Even Price} = \frac{\text{overhead expenses} + \text{variable expenses}}{\text{overhead expenses}}$$

Using the lamb example again, let's say that you can only raise 120 lambs and you want to figure out what price you should charge. Your overhead expenses for your farm are \$40,000 per year and your variable expenses at \$200/lamb are \$24,000 with 120 lambs. Your break-even price calculation would look as follows:

$$\frac{\text{overhead expenses} + \text{variable expenses}}{\text{volume of production}} = \frac{\$40,000 + \$24,000}{120 \text{ lambs}} = \frac{\$64,000}{120 \text{ lambs}} = \$533.33/\text{lamb}$$

The next question would be whether or not your market would be willing to pay more than \$534 for a lamb. Can you demonstrate that your lambs have added value? Again, this price will only get you to break-even. Like in the example above, if you want to make \$10,000 in profits this year, you can add that into your overhead costs. If you don't have a set profit goal in mind, you can play with the numbers to identify your profits. For example, if you sold the lambs for \$550 each on average, you would make \$16.67 per lamb in profits and just over \$2,000 total with 120 lambs.

Break-Even Analysis with Multiple Products

As you might imagine after reading through the previous sections, it's easiest to do a break-even analysis for a single enterprise business, such as a CSA or the lamb business outlined in the example on break-even volumes. If you have a farm with multiple enterprises, like having multiple crops for sale or multiple different markets (and prices) for your products, break-even analyses become a bit tougher. You have two options: look at an enterprise individually or include the costs of the farm as a whole. You can use an enterprise budget to identify the overhead

and variable costs associated with one specific product, but the volume or price you cover won't include the amount you need to produce or the price you need to charge in order to pay your farm's overhead expenses overall (rent, taxes, etc.). You'll know, for example, how many carrots you have to produce in order to cover the costs of the carrots, but you won't know how many carrots you have to produce to have the carrots pay their own way on the farm by helping to cover a portion of your farm overhead expenses overall.

Alternately, you can include the costs of the farm as a whole in your overhead costs in your calculations, but you'll need to just include a portion of the farm overhead expenses or your carrot calculation will make it look like carrots have to carry the load of covering *all* of the farm overhead expenses. You can do this by identifying all of the farm overhead expenses and dividing them by the number of enterprises (i.e. the number of different crops or different products you are producing) or you can apportion the farm overhead expenses based on the value of the different products. For example, if you have a diversified vegetable farm with 20 varieties of vegetables you produce, you can divide your total farm overhead expenses by 20 and include that number in your calculations. Or, if you know that you make more profit off basil and asparagus than onions and potatoes, you can include 10-15% of the total farm overhead expenses in your calculations for basil and asparagus and 2-3% of the total farm overhead expenses in your calculations for onions and potatoes. Feel free to use whichever system makes sense on your farm. Just remember to make sure that you include all of your costs in the various calculations so you don't end up under-shooting your break-even points.

There are many tools and calculators online that can help you with figuring out your expenses and setting up a simple enterprise budget if you have multiple products. Iowa State University's Ag Decision Maker has sample enterprise budgets for various crops and calculators for break-even volumes and prices. Note that in Ag Decision Maker, "overhead expenses" are titled "ownership costs." You can find them at www.extension.iastate.edu/agdm/decisionaidsall.html.

Using the Break-Even Analysis

Once you've calculated one or more break-even numbers for each enterprise or product compare these numbers against your sales projections, your production capacity, and your projected market price. Are your sales goals financially feasible? Can you produce the break-even volume? Will the market, based on your research, support your minimum break-even value (price)?

If your enterprise doesn't break even, then you'll need to take another look at the market or your cost structure. Is there a way to boost your projected market price or to cut input costs? If not—if you can't break even on your costs—then your business idea for this enterprise is not financially feasible. Stop here, return to your vision and rethink your plan. Is there another way to reach your goals or are you willing to sacrifice income from this enterprise to achieve your vision? On the other hand, if calculations suggest that your enterprise will more than break even, you're ready to perform a profitability assessment for the whole farm.

Partial Budgeting

This section may not be applicable to you now as you're planning your new business, but partial budgeting is a tool you can use to evaluate changes to your business. For instance, if you want to add a walk-in cooler or evaluate purchasing a tractor, you can do accounting around that specific change rather than the farm as a whole. It's called a "partial budget" analysis because you're only evaluating the part of your budget that would change. This can make decision making much simpler. The partial budget approach uses annual income and expense changes to study the impact of a new business idea or major purchase on your present business' profitability and cash flow.

Effectively, when you do a partial budget analysis, you're researching the balance between the added income you'll have from an investment versus the added costs of that investment. To evaluate that, you will need to collect four sets of numbers, broken into the following two groups:

- The positive effects of changing, which includes the increased revenue (income) you expect from making this change and the decreased expenses you will have by not doing what you would normally do, and

- The negative effects of changing, which includes the decreased revenue you will get by not doing what you would normally do and the increased expenses associated with changing.

You don't always necessarily collect all of the numbers, for example, if you are evaluating a change that will not produce any income, but just increase some expenses and decrease others. *Fearless Farm Finances* includes an example of switching from harvesting potatoes by hand to purchasing a 1-row potato harvester. They don't project any added or decreased income from that purchase, but the purchase would be an increased expense and the reduced labor would be a decreased expense so those sets of numbers are accounted for.

Note that partial budgeting is based largely on estimated income and expenses so the accuracy of your estimates is critical. If you can use current data from your farm for the numbers relating to your existing operations and get as close as possible to your estimates for the proposed change, that will make this tool much more helpful.

The following is a simple example illustrating how partial budgeting can be used to evaluate the financial impact of a diversified vegetable farm putting a high tunnel on roughly $\frac{1}{4}$ acre of farmland. Farmer Jen is farming 5 acres total so this is about $\frac{1}{20}$ th of her overall production. Let's start with the revenue side. The farmer has evaluated the productivity of high tunnel crops and found that she can produce \$72,000 of gross profits (increased revenue) from the high tunnel. Under decreased revenue, Jen needs to capture the revenues that will be lost by not farming the $\frac{1}{4}$ acre as it was farmed previously. Previously, she was gaining \$30,000 in profit off of that $\frac{1}{4}$ acre so she captures that under decreased revenue.

On the expense side, Jen calculates the costs of her previous farming method and the costs of farming with the high tunnel. She knows that as she's currently farming the $\frac{1}{4}$ acre, she spends \$9,000 on labor, \$3,948 on boxes and labels, and \$2,502 on other non-labor production expenses (capturing seeds, marketing, fuel, transportation, and other overhead and variable costs here for simplicity). Because of the increased production inside the high tunnel, Jen estimates that labor costs will increase to \$18,000, and boxes and labels and non-labor production will increase to \$12,000 and \$6,000, respectively.

The cost of the high tunnel is \$10,000 and she can choose to include this in one of two ways. Because she wants to use these numbers to estimate her profits this year and in future years, Jen doesn't want to include the full \$10,000 this year because then her calculations would make it look like she was buying a new high tunnel every year.

1. Most sources recommend that she capture this cost by including her DIRTI costs (depreciation, interest, repairs, taxes, and insurance). As laid out in module 4, depreciation is calculated as follows: (original cost – salvage value) / useful life. Jen plans on using the high tunnel until it is no longer valuable and she expects that will take about five years so her depreciation calculation is $(\$10,000 - 0) / 5 \text{ years} = \$2,000/\text{year}$. Jen has the cash on hand to buy the high tunnel outright so there are no interest fees, but if she were taking out a loan, that cost would be included here. Average repairs on equipment are 3-5% of the purchase cost, and with high winds in her area, she adds in an estimated 3% in repairs $(\$10,000 \times 3\% = \$300/\text{year})$. In Montana, taxes aren't charged on equipment so she can omit that for now. She called her insurance company and with her current policy, her insurance costs won't go up with this purchase so she doesn't need to include an insurance cost either. These costs are represented in the "profit" column of the worksheet.
2. She could alternately choose to look at how it will affect her cash flow (enter all values in the "cash flow" columns). If Jen chose to include the costs that way, she would remove depreciation and interest and add in the \$10,000 in full. Again, this will only let the partial budget analysis apply for this year and to evaluate profits in future years, she would need to remove that \$10,000 cost. This approach can be more useful if you are taking out a loan. For example, if she knew that she would be paying back \$2,120 each year, Jen could include that as an annual cost of debt repayment for the full five years. She would include that cost instead of the depreciation and interest costs in the example above, but it's important to still include the costs of repairs, taxes, and insurance. While it may seem like "cash flow" is the simpler and more straightforward way of evaluating your plan, a cash flow plan only considers cash transactions without representing inventory changes, and it can grossly misrepresent the actual farm financial situation. For example, if you are working with a wholesaler and you pre-sell two years of livestock production, the cash flow will look great because of all the money you're taking in that year, but it won't show that you have to hold the costs associated with that income over for another year. Another example is that if you only use a cash flow, the startup phase when

you're building up your inventory and have a lot of costs, but have no or few cash sales will look particularly bad.

Because Farmer Jen did not take out a loan, we have used option one in this example. Therefore, her total positive effects of changing are \$87,500 and her negative effects of changing are \$65,900, meaning that the total impact of the change (positive effects minus negative effects) would be \$21,600. She may decide that those profits sound great and it fits in with her values and her goals. If she feels confident in her numbers, Jen can stop here and move forward with making the change. If however, the numbers are a little tighter (say the total impact was \$2,160 instead, for example) or if she wants to compare multiple different investments, she can also do a Return on Investments calculation to further evaluate the profitability of her idea. A blank Partial Budgeting worksheet is available in Worksheet 5C: Partial Budget.

Example Partial Budgeting Worksheet for a New High Tunnel					
Positive Effects of Changing			Negative Effects of Changing		
Increased Revenue	Profit	Cash Flow	Decreased Revenue	Profit	Cash Flow
High Tunnel Crops	\$72,000		1/4 Acre Crops	\$30,000	
Subtotal	(a) = \$72,000		Subtotal	(b) = \$30,000	
Decreased Expenses			Increased Expenses		
Labor	\$9,000		Labor	\$18,000	
Boxes and Labels	\$3,948		Boxes and Labels	\$10,565	
Non-Labor Production Costs	\$2,552		Non-Labor Production Costs	\$5,035	
			Depreciation	\$2,000	
			Repairs	\$300	
Subtotal	(c) = \$15,500		Subtotal	(d) = \$35,900	
Total (+) Impact: (a + c) = (e)			Total (-) Impact: (b + d) = (f)		
	\$87,500			\$65,900	
			Net	(e - f) = (g)	\$21,600
			Cost of the investment	(h)	\$10,000
			Return on Investment	(g)/(h)	2.16

Return on Investment (ROI)

Return on Investment is also sometimes referred to as Return on Assets (ROA). Return on investment is a way to evaluate an investment's profitability and can be used to compare different investments. When you calculate ROI, you divide the net profits you expect from an investment by the total cost of the investment. In the example above, the farmer's ROI is calculated at the bottom of the partial budgeting worksheet and found to be 2.16 or 216%. This is a strong ROI.

On a basic level, if an investment has a positive ROI that means you are effectively converting your assets into solid profits. If an investment has a negative ROI, that means the costs are greater than the benefits. That part is fairly obvious because to get a negative ROI, you would need to be including a net loss from the investment in the top half of the equation!

If you have a low ROI, then your calculation is telling you that your investment didn't convert into very much profit. For example, if the example above had found a net profit of \$2,160 rather than \$21,600, the ROI calculation would be $\$2,160 \div \$10,000 = 0.216$ or 21.6%. That may still be a fairly good ROI for you or you may want to consider other options.

So how do you know whether you have a low or high ROI? You can compare the ROI for your investment against your current ROA for your farm (this is more often referred to as an ROA because you're evaluating assets, not a specific investment), or you can compare with other ideas. To compare with the ROA for your farm, you would calculate the net income of the farm (gross revenues – all expenses) and divide it by the total assets. This number should include your current and long-term assets.

For example, Farmer Jen knows that her farm's net income is \$45,000/year. She has \$18,000 in her checking account, a tractor worth \$8,000, and land valued at \$220,000. Her whole farm ROA would be as follows:

$$\frac{\text{Net Income}}{\text{Total Assets}} = \frac{\$45,000}{\$18,000 + \$8,000 + \$220,000} = \frac{\$45,000}{\$246,000} = \text{ROA} = 0.183 \text{ or } 18.3\%$$

Because the ROI for the investment is higher than the ROA for her farm, Jen feels more confident that it's a good investment. If Farmer Jen were considering multiple investments, she could run an ROI calculation on each of them. If there are other opportunities with a higher ROI, then those investments should be chosen (as long as they are also a better fit with her values and goals).

You can also compare the ROI with the interest rate on the investment. The ROI should be higher than your interest rate. However, with interest rates hovering around 3-9%, you can imagine that most ROIs would pass this test. A blank ROI/ROA worksheet is provided in Worksheet 5D: Return on Investment/ Assets.

Avoiding a Potential Wreck

Chris Blanchard of Purple Pitchfork, a consulting firm that works with farmers and ranchers across the country, shares other warning signs that you should watch for when you're doing financial planning. Some of these can be early information that your finances are not doing well and you should take action. Many are easy to recognize and are applicable to personal budgeting as well.

- Checkbook doesn't stretch enough, i.e. your income isn't lasting through the end of the month.
- Carrying open accounts past 60 days. It can sometimes make sense to pay an invoice in the following month, particularly if you only write checks on a monthly basis, but if you find yourself going past 60 days, that can be a sign of a problem.
- Forgoing necessary inputs, or avoiding or putting off buying the things you need for your farm.
- Selling inventories. Obviously we are all selling our inventory during our market season, but if you regularly find yourself, for example, selling calves before they're due because you need the money, that's a sign of a problem.
- Accepting lower than market prices. Sometimes you have extra inventory that you don't need to sell that you're willing to sell for a lower price, but other times you may be selling at rock bottom prices just to get it out the door which may be problematic. Also, in the example of "extra" inventory, remember that you're still paying the same expenses – seeds, labor, etc. – on that inventory so it isn't really extra!

If you see any of these issues emerging, talk to your lender immediately. They want you to pay down your debts and they may be able to change the amortization (interest schedule) or restructure your debt to reduce your expenses. You can also consider getting a line of credit (similar to a loan that is available to you as you need it, rather than as a lump sum) although lines of credit can be expensive and a dangerous trap to get into so try to stay away from using lines of credit or credit cards if you aren't sure you can pay them off quickly. In addition, you can consider selling off unproductive assets and inventory, like implements you've found that you don't use often.

Stories from the Fields

We may not always want to do market. It's a lot of work and a lot of time for what we get out of it, but at least for now it's hard to see us making that up with what we do wholesale, so we choose to continue to do market for that financial boost. I think part of the key to the financial planning stuff is that we're always looking for other options and better options. So if we are able to cut out market at some point maybe we will, maybe we won't, maybe we'll have somebody else do market, but I think it's just reassessing and reworking all the time. - County Rail Farm, Dixon

These signs are also a good reason to re-evaluate your farming operation. As we mentioned, your farm budget that you develop is your best, most well-educated guess at your costs and profits, but sometimes they're wrong. There's a reason that 43% of farms don't make it more than 5 years. Take this opportunity to revisit your financial plans and see where you may have over-estimated income or under-estimated costs. Will increasing production help? Do you need to find a new market? Where can you cut costs? Perhaps doing a few enterprise budgets would help you to identify specific products that aren't working for you. Sometimes you have to spend money to make money. Are you doing enough marketing? Are there capital improvements you could make that would improve your workflow and save money? Asking these questions sooner than later will help you to survive hard times and thrive.

Making Decisions With Your Plans

So you've studied your farm's financial performance. Maybe you are thinking of making a change on the farm, so you've done partial budget analyses and calculated your ROI. In short, you have the numbers. Now you need to decide whether you should bite the bullet and make the change. Economist Kent Olson recommends testing your business strategy or strategies from several perspectives before making the final decision to implement it. Olson outlines a

series of subjective "tests" that can be used to rank each of the major strategy alternatives that you are considering (including your base plan) and help you choose the best strategy for your business. He suggests giving each strategy a subjective score, from one to five (five being the highest) for each test. The strategy with the highest score is the best for the farm and for you and your family. If more than one strategy ranks similarly, then spend more time researching and evaluating before making a final decision about what direction to take your business. You will need to be brutally honest. Take into account the research and evaluation that you have conducted as a team thus far when scoring each whole farm business strategy.¹ Visit Worksheet 5E: Strategy Tests to work through these tests on your own.

Strategy "Best Fit" Tests

Vision Consistency Test. How well does the proposed strategy fit with your whole farm and personal vision? If the strategy does not lead toward your personal and business vision or embrace the core values of your planning team, it should be rejected. Success and enthusiasm will be low and the plan is unlikely to succeed otherwise.

Goodness of Fit Test. How well does the proposed strategy fit with your external analysis of the industry and the internal analysis of your farm? Does the proposed strategy explain how it will build on your business' current strengths and opportunities while managing for weaknesses and threats?

Building for the Future Test. How well does the proposed strategy build for the future? Will your business strategy help get you there? Moreover, will your strategy generate resources, such as soil quality and financial equity, for the next generation? If a strategy uses but does not generate resources, it should receive a low score for this test.

Feasibility and Resource Test. How realistic are the business' start-up and long-term resource needs? In other words, are resources available to implement your whole farm strategy? Is your soil type appropriate for the crops that you want to grow? Can people be hired to do the work needed? Can financing be obtained?

Performance Test. How well does the proposed strategy help accomplish your marketing, operations, human resources and financial goals for the farm business? What are the projections for income, rates of return, and net worth growth? Most importantly, can your business survive the transition period?

Importance Test. How well does the strategy address important planning issues? Does your strategy focus on these issues or on the trivial? If a proposed strategy does not address important issues then it should be rejected as written.

Confidence Test. How high is the confidence of your planning team in the anticipated outcomes of the proposed strategy? How high is the risk that events will occur that will change the expected results—particularly in a negative direction?

¹ Kent Olson, *A Strategic Management Primer*. University of Minnesota, 2001.

Worksheet 5A: Financial Ratios

Once you have a few months or a year's worth of data, use information from your balance sheet and income statement to calculate the following ratios.

Current Ratio:

This is a primary measure of liquidity used by most businesses.

Current Assets (Balance Sheet)	_____
Current Liabilities (Balance Sheet)	÷ _____
Current Ratio	= _____

Debt to Asset Ratio:

This solvency measure is sometimes referred to as your percent in debt.

Total Liabilities (Balance Sheet)	_____
Total Assets (Balance Sheet)	÷ _____
Debt to Asset Ratio	= _____

Term Debt Coverage Ratio:

This measure of repayment capacity indicates whether your business is generating enough income to make principal and interest payments on intermediate and long-term debt.

Gross Farm Income (Income Statement)	_____
Cash Operating Expenses (Income Statement)	- _____
Scheduled Interest Payments on Long-term Debt (Income Statement)	+ _____
Family Living Expenses and Taxes	- _____
Funds Available for Debt Payments	= _____
Intermediate and Long-term Debt Payments	÷ _____
Term Debt Coverage Ratio	_____

A term debt coverage ratio of over 150%, meaning that you are producing \$1.50 of income that is available for debt repayment for each \$1.00 of scheduled debt repayment, is usually considered adequate.

Operating Expense Ratio:

This measure of overall efficiency indicates the percentage of business revenues that are available for family living expenses, debt repayment, and new investments.

Cash Operating Expenses (Income Statement)	_____
Interest Expense (Income Statement)	- _____
Gross Farm Income (Income Statement)	÷ _____
Operating Expense Ratio	= _____

As a general guideline, most farm businesses strive to keep operating expenses under 70% of gross revenues. If you are operating a small farm that employs sustainable practices, your financial success probably depends on operating efficiency. In that case, you should probably strive to keep operating expenses below 60% of revenues. If you are involved in a retail business, sales volume might be more important to your bottom line than operating expense levels if the bulk cost of the goods you sell is included. In that case, a much higher operating expense ratio might be expected. So, this ratio is useful for internal tracking of your business, but not very useful for comparisons with other businesses.

Worksheet 5B: Break-Even Analysis

Calculate your break-even value or volume for each enterprise or product. Try experimenting with a range of market prices to see how they affect your break-even volume. Then, compare your break-even volume to your sales volume projections and output capacity estimates. Likewise, when calculating break-even values, consider: can you break even and still remain competitive? Is your break-even value below the projected market price that you identified in Module 4?

Break-even Volume Enterprise or Product: _____

Annual overhead costs (a) = _____

Price per unit (b) = _____

Variable expenses per unit (c) = _____

Break-even volume (a) / (b - c) = _____

Estimated sales volume = _____

Upper limit or output capacity = _____

How does our break-even volume for this product compare to our projected sales volume and production capacity estimates? Can you break even?

Break-even Price Enterprise or Product: _____

Average overhead expenses (a) = _____

Variable expenses (b) = _____

Overhead expenses (c) = _____

Break-even volume (a + b) / (c) = _____

Estimated market price = _____

Upper limit or market capacity = _____

How does our break-even price for this product compare to our projected sales price and market capacity estimates? Can you break even?

Worksheet 5C: Partial Budget

If appropriate, calculate and record the impact of each whole farm business strategy using the partial budget approach. Begin by estimating additional income (increased revenue) and new expenses (increased expenses). Next, estimate any reduction in your annual expenses (decreased expenses) and income (decreased revenue) that will occur as a result of your proposed strategy or business change. Lastly, total up the positive impact of your business strategy (e) and the negative impact (f). What is the net effect on profit or cash flow? What is your return on investment?

Strategy Being Reviewed: _____

Positive Effects of Changing			Negative Effects of Changing		
Increased Revenue	Profit	Cash Flow	Decreased Revenue	Profit	Cash Flow
Subtotal	(a)		Subtotal	(b)	
Decreased Expenses			Increased Expenses		
Subtotal	(c)		Subtotal	(d)	
Total (+) Impact: (a + c) = (e)			Total (-) Impact: (b + d) = (f)		
			Net (e - f) = (g)		
			Cost of the investment (h)		
			Return on Investment (g)/(h)		

Worksheet 5D: Return on Investment/Assets

Investment 1: _____

Net positive or negative impact of the investment (a) = _____

Cost of the investment (b) = _____

Return on Investment (a) / (b) = _____

Investment 2: _____

Net positive or negative impact of the investment (a) = _____

Cost of the investment (b) = _____

Return on Investment (a) / (b) = _____

Investment 3: _____

Net positive or negative impact of the investment (a) = _____

Cost of the investment (b) = _____

Return on Investment (a) / (b) = _____

Assets: _____

Net profits for the farm (a) = _____

Total farm assets (b) = _____

Return on Assets (a) / (b) = _____

Worksheet 5E: Strategy Tests

Use the strategy tests below to test any changes you’re considering pursuing on your farm. Rate each change from 1 – 5, 1 meaning it does not meet the test and 5 meaning it excels in that area. Then total each change’s ratings and use that information in your decisionmaking. The strategy with the highest score is apparently the best for the farm and for you and your family. If more than one strategy ranks similarly, then spend more time researching and evaluating before making a final decision about what direction to take your business.

Proposed Changes:	1:	2:	3:
Vision Consistency:			
Goodness of Fit:			
Building for the Future:			
Feasibility & Resource:			
Performance:			
Importance:			
Confidence:			
Total:			

Strategy “Best Fit” Tests

Vision Consistency Test. How well does the proposed strategy fit with your whole farm and personal vision? If the strategy does not lead toward your personal and business vision or embrace the core values of your planning team, it should be rejected. Success and enthusiasm will be low and the plan is unlikely to succeed otherwise.

Goodness of Fit Test. How well does the proposed strategy fit with your external analysis of the industry and the internal analysis of your farm? Does the proposed strategy explain how it will build on your business’ current strengths and opportunities while managing for weaknesses and threats?

Building for the Future Test. How well does the proposed strategy build for the future? Will your business strategy help get you there? Moreover, will your strategy generate resources, such as soil quality and financial equity, for the next generation? If a strategy uses but does not generate resources, it should receive a low score for this test.

Feasibility and Resource Test. How realistic are the business’ start-up and long-term resource needs? In other words, are resources available to implement your whole farm strategy? Is your soil type appropriate for the crops that you want to grow? Can people be hired to do the work needed? Can financing be obtained?

Performance Test. How well does the proposed strategy help accomplish your marketing, operations, human resources and financial goals for the farm business? What are the projections for income, rates of return, and net worth growth? Most importantly, can your business survive the transition period?

Importance Test. How well does the strategy address important planning issues? Does your strategy focus on these issues or on the trivial? If a proposed strategy does not address important issues then it should be rejected as written.

Confidence Test. How high is the confidence of your planning team in the anticipated outcomes of the proposed strategy? How high is the risk that events will occur that will change the expected results—particularly in a negative direction?