# <u>Case Study #5</u>: The Cash Farm, Bob and Ellen Cash

***Following is the fifth in a series of fictional Case Studies prepared to illustrate the process involved, and benefits of completing a financial review to analyze options that might be available for a farm operation. Everything about this Case Study is made up, although the situation presented is common in the industry across the province. This Case Study illustrates how a review such as this could be conducted, the type of analysis that would result, and how the work done can assist participating farmers in making decisions about their business. The purpose of this Case Study is not to recommend a particular course of action. Individual results may vary.***

**<u>The Cash Crop Farm</u>**

Bob and Ellen Cash run a cereals and oilseeds farm in the Prosperity area in south central Alberta. Their land base presently consists of 8 quarters with 1,180 acres owned and 1,500 cultivated acres rented. They have good soil, and while they are able to successfully grow most crops typical for their area, they have found most success in raising CPS wheat, barley and canola. They are sometimes able to get some malt for their barley, so raise mostly feed varieties, but do plant some malt most years. Bob and Ellen are both 46 years old, and both are involved in operating and managing the farm on a full time basis. In addition to their own labour, they normally employ 1 full time hired man year round to help them out. Their children Robby Jr. and Amy are both in College full time, and help when able, but with their own commitments are not able to assist to any significant degree. They have a good, mostly up to date line of equipment, and do most of the farm operations needed themselves. They practice minimum and zero till. Their buildings are adequate, but not excessive for their operation. They added a shop and some new grain bins 3 years ago so Bob and his hired man can spend the off season repairing and servicing equipment. They focus on attaining the highest crop yields possible, and try to use new technologies and efficiencies to keep production costs as low as possible.

Financially, the last few years, with the exception of 2015, have been good for the Cash farm operation. Commodity prices up to and including 2013 were generally good, and, although costs were slowly creeping up, margins were reasonable, in fact with good prices and an excellent crop in 2013, their net income was the best it has ever been since they started farming. The financial progress they made that year allowed them to update their seeding and harvesting equipment, and build a modern farm shop to allow them to do more work on their machinery.

In 2007, Bob and Ellen purchased the neighboring farm to expand their land base, and then with the added production these changes brought about, needed to purchase more storage capacity. Looking back, they are happy they made that expansion at that time, as since then land prices have gone up about 60%. As well, with the expansion, they became more efficient, spreading their equipment investment and labour over more acres. The expanded operation positioned them very well for the next several good years that were to follow.

Recently though, things have tightened up a bit again financially. Prices have been softer for the last couple years, while expenses have kept rising. The drought in 2015 reduced yields significantly, and while they will be able to pay all their bills and make their loan payments, they will be going into the 2016 production year with the weakest current position they have been in for several years.

One warm spring day in March, 2016, a neighbor stopped by to tell Bob and Ellen that he was retiring, and wondered if they would be interested in buying his land and taking over his rented land. He owns 4 quarters of land with 600 acres cultivated 1 mile away from their home place and rents a further 620 cultivated acres nearby. The price for the owned land is $1,800,000, and the lease on the additional 600 acres is $49,600 per year. They thought back to the expansion they made in 2007 that turned out to be a good move and wonder if now would be a good time to expand again? They talked it over with their banker. While he was generally positive about the change, he pointed out to them that it would be a significant expansion carrying a lot of extra risk for them. Before recommending the additional credit required to purchase the land, additional equipment and bin space, and the extra operating loan required to fund operations, he wanted to see them work through some detailed budgets and projections. He told them about the Agricultural Business Analyzer financial analysis tool and user tools that were available on the Alberta Agriculture and Forestry website, and suggested they use it to do statements and projections to help them come to a decision about this change. He mentioned too, that some of his farm clients facing similar decisions had engaged the services of a Consultant to help them work through the numbers and referred them to a listing on the Alberta Agriculture and Forestry website. As Bob and Ellen were really uncertain about whether or not they should go ahead with this expansion, they decided to engage one of the consultants to help them with the financial analysis and come to a decision. They contacted Joe Analyst, and made an appointment to meet.

**Personal Goals**

Prior to their first meeting, the Consultant, Joe Analyst, asked Bob and Ellen to provide information about their operation, their goals, financial challenges and other basic financial information including their assets and debts. Bob and Ellen are still relatively young, and are in the prime of their farming career. The opportunities they see excite them, especially after the good years they have had recently. They are willing to work hard now, hoping there will be a financial payoff for them in later years as they near retirement. Also, maybe if the farm can show some good financial returns there will be opportunity to bring one or both of their children into the business some time down the road.

Specific personal goals they identify are as follows:

- Both Bob and Ellen enjoy farming and the farm life. They would like to continue on with the business into the indefinite future. Retirement is still a distant thought for them.
- Net incomes from operations, have been quite good recently with the exception of a few years when prices and/or yields were poorer than expected. As a result, they have been able to strengthen their overall financial situation recently, spend some money on themselves on personal items, and take holidays. They have come to realize how important quality of life is, and want to be able to continue this higher standard of living
- Robby Jr. and Amy are both in college, and Bob and Ellen have been able to help them a bit with their education costs. They look forward to being able to do more for them in this regard in the future and when the time comes to be able to help them purchase their first homes
- Although they have no retirement plans at present, they know they need to prepare for it.. They have accumulated about $70,000 in RRSPs to this point, and intend to put $10,000 per year into their accounts each year going forward

**Goals for their business**

As noted, the Cashes are optimistic about their industry, and feel that now might be the time for them to expand and take their business to the next level. Specific business goals within the next five years are:

- Within the next year:
  - to maximize production as much as possible
  - to secure the best prices possible through contracting, hedging and forward pricing
  - to look for ways to keep costs down, especially in light of present high input costs
  - use Risk Management tools available to management the many risks they face as best is possible
  - over time, further strengthen the farm's financial position
- Within the next 3 years – to expand operations through the addition of owned and/or rented land as they are able to. Depending on the amount of the increase, some equipment and grain storage might need to be added
- Within 5 years – to further expand. Hopefully by this time, the land base will be in place to justify the purchase of some larger equipment resulting in a reduction in per unit costs and incorporation of other technology that will help reduce production costs

**The Status Quo assessment (statement and projections assuming no changes)**

Working from the information the Cashes provided, Joe Analyst completed a Status Quo assessment for them. The purpose of this part of the review is to gain information about their current operation and financial situation, and what they can expect financially if no changes are made. The results are summarized below.

***Before Change Statement of Assets and Debts:***

**Cash Crop Farm Asset/ Debt Summary**

| Assets (April 1, 2016) | | Liabilities (April 1, 2016) | |
|---|---|---|---|
| **Current Assets** | | **Current Liabilities** | |
| Cash in bank | 0 | Operating loan | 141,720 |
| Cash saved | 0 | Accounts payable | 108,000 |
| Crops for sale | 286,300 | Acc. interest | 12,584 |
| Feed & sup. | 102,500 | Cur. port. term debt* | 120,023 |
| Total | 388,800 | Total | 382,326 |
| **Intermediate Assets** | | **Intermediate Debt** | |
| Mach & equip | 850,000 | Tractor loan | 160,892 |
| RRSPs | 70,600 | Combine loan | 50,710 |
| | | Air seeder loan | 51,687 |
| Total | 920,600 | Total | 263,288 |
| **Long Term Assets** | | **Long Term Debt** | |
| Land | 3,540,000 | Land loan | 492,612 |
| Buildings | 550,000 | Shop & bins loan | 202,353 |
| Total | 4,090,000 | Total | 694,965 |
| **Total Assets** | 5,399,400 | **Total Debt** | 1,340,579 |
| | | **Net Worth** | 4,058,821 |

| This Farm's Ratios: | Definition | At start of the Year | Projected at end of Year | Industry Standards Good | Caution | Weak |
|---|---|---|---|---|---|---|
| Current Ratio: | *Current Assets/Current Debt* | 1.02 | 1.04 | >1.50 | 1.00-1.50 | <1.00 |
| Leverage Ratio: | *Total Debt/Net Worth* | 0.32 | 0.29 | <0.42 | 0.42-0.818 | >0.818 |
| Net Worth Ratio: | *Net Worth/Total Assets* | 0.76 | 0.78 | >0.70 | 0.55-0.70 | <.55 |

Joe explained that the ratios and financial indicators generated from their Asset/Debt Summary, while not really strong, are not really weak either. The Current Ratio is in the low Caution range, but from other records provided he observed that it is weaker than it was last year due to poor year they had in 2015. They have significant equity ($4,058,821), but at the same time carry a high debt load with significant payments. If they have good year in 2016, their financial ratios and indicators could improve further, but presently they appear vulnerable to a financial setback.

***Before Change Income and Expense Summary:***

## *Cash Crop Farm Income/Expense Summary*

**Income April 1, 2016 - March 31, 2017)**

| | | | | | |
|---|---|---|---|---|---|
| **Income** | | | | | |
| Crop sales | | | | | |
| wheat | 60,000 | x | 5.50 | | 330,000 |
| canola | 38,250 | x | 10.00 | | 382,500 |
| barley | 92,700 | x | 4.10 | | 380,070 |
| | | | | Total | 1,092,570 |
| Other income | | | | | |
| Gov't programs | | | | | 0 |
| Custom work | | | | | 10,000 |
| Other | | | | | 6,500 |
| | | | | Total | 16,500 |
| **Total Cash Income** | | | | | 1,109,070 |
| **Inc. side accrual adjustments** | | | | | 0 |
| **Total Accrued Income** | | | | | 1,109,070 |

**Expenses (April 1, 2016 - March 31, 2017)**

| | |
|---|---|
| **Expense** | |
| Cropping expense | 787,920 |
| Overhead expense | 40,220 |
| Operating interest | 10,207 |
| Term interest | 41,180 |
| **Total Cash Expense** | 879,527 |
| **Non Cash Expense** | |
| Depreciation | 79,000 |
| Exp. side acc. adj. | -1,565 |
| **Total Non Cash Expense** | 77,435 |
| **Total Accrued Expense** | 956,962 |
| **Net Accrued Farm Inc.** | 152,108 |
| Non farm income | 0 |
| Living costs | 66,000 |
| Income tax | 22,000 |
| **Debt Service Capacity** | 184,288 |
| (Net acc. farm inc. + depreciation + term interest + non farm income - living costs - income tax) | |

| Payments: | |
|---|---|
| Principal | 120,023 |
| Interest | 41,180 |
| Total | 161,203 |

| This Farm's Ratios: | | | | | |
|---|---|---|---|---|---|
| | | Projected for | Industry Standards | | |
| | Definition | the full Year | Good | Caution | Weak |
| Debt Servicing Ratio: | *Debt Service Capacity/Payments* | 1.14 | >1.50 | 1.10-1.50 | <1.10 |
| Return on Assets: | *(Net Farm Inc. + Int. - Living Costs)/Total Assets* | 2.51% | >5% | 1%-5% | <1% |
| Return on Equity: | *(Net Farm Inc - Living Costs)/Net Worth* | 2.05% | >7% | 4%-7% | <4% |
| Turnover Ratio: | *Gross Income/Total Assets* | 0.20 | >0.40 | 0.30-0.40 | <0.30 |
| Efficiency Ratio: | *(Exp. - Deprec. - Term Int.)/Gross Farm Inc.* | 0.75 | <0.65 | 0.65-0.80 | >0.80 |
| ABA Rating: | *Combined weighted rating of Current Ratio, Leverage ratio and Debt ServicingRatio* | 5 | <11.5 | 11.5-17.0 | >17.0 |
| Maximum Operating Loan Required = | 375,070 | | | | |

**The Income/Expense Summary provided further insight about what Bob and Ellen could expect financially if they were to continue on as at present without the expansion:**

1. With the expected crop prices and yields, farm operations are projected to be profitable in the upcoming year
2. Income from all sources should be sufficient to meet all financial demands, but only marginally so. Projected debt service ability is $184,288, while annual payments are $161,203.
3. Financial returns on assets and equity are projected to be modest as evidenced by the returns on assets and equity as shown.

If the 2016/2017 year turns out as projected, Bob and Ellen's overall financial situation should be slightly improved by the end of the year, as illustrated in the Farm Ratios provided. The Current Ratio will marginally improve but will still be at the low end of the Caution range. Overall Net Worth should improve by about $64,000 (not shown in the tables above, but the ratios are). It should be noted that these results are based on the prices, yields and expenses projected. Should they realize lower prices or yields, the final performance numbers could be much less. Bob and Ellen have their Consultant, Joe Analyst run some different pricing scenarios so they have a better idea of what they need to maintain. From that exercise they see that a price drop of only 2% would remove most of their surplus of debt service capacity over payment requirements.

**The Action Plan:**

Even though some of the financial numbers are marginal for present operations, Bob and Ellen wonder if expansion, and capitalizing on economies of scale might improve if they go ahead with the expansion, so ask Joe to run some projections based on these changes. The features of the plan they suggest he work into the scenario are as follows:

- purchase the 4 quarters of land with 600 acres cultivated for $1,800,000. There are no buildings – the building site was subdivided out and the former owners will retain that parcel. The purchase would take place about April 1, 2016
- take over the lease of 4 quarters with 620 acres cultivated. The annual cost for the lease is $80/acre or $49,600/year payable ½ in May and ½ in November
- some additional equipment would be needed to farm the extra acreage. Cost to upgrade and add the extra pieces would be about $300,000. Most of the equipment would be added in April, but some could be deferred until mid summer
- additional grain storage would be needed at a cost of about $100,000. The bins would be erected in mid summer
- Bob and Ellen would need extra help to farm the additional land, and to do more of the actual farm work, as they would now need to spend more time dealing with management issues. The additional help would cost about another $20,000 per year

**Operations were projected for 2 years based on this change. The results follow:**

### After Change Statement and Projection (Year 1)

**Income (April 1, 2016 - March 31, 2017)**

| Income | | | | | |
|---|---|---|---|---|---|
| Crop sales | | | | | |
| wheat | 90,000 | x | 5.50 | 495,000 | |
| canola | 50,000 | x | 10.00 | 500,000 | |
| barley | 125,000 | x | 4.10 | 512,500 | |
| Total | | | | 1,507,500 | |
| Other income | | | | | |
| Gov't programs | | | | 0 | |
| Custom work | | | | 10,000 | |
| Other | | | | 11,500 | |
| Total | | | | 21,500 | |
| **Total Cash Income** | | | | | 1,529,000 |
| **Inc. side accrual adjustments** | | | | | 81,000 |
| **Total Accrued Income** | | | | | 1,610,000 |

**Expenses (April 1, 2016 - March 31, 2017)**

| Expense | |
|---|---|
| Cropping expense | 1,142,800 |
| Overhead expense | 53,800 |
| Operating interest | 16,138 |
| Term interest | 119,445 |
| **Total Cash Expense** | 1,332,183 |
| **Non Cash Expense** | |
| Depreciation | 105,000 |
| Exp. side acc. adj. | -1,009 |
| **Total Non Cash Expense** | 103,991 |
| **Total Accrued Expense** | 1,436,175 |
| **Net Accrued Farm Inc.** | 173,825 |
| Non farm income | 0 |
| Living costs | 66,000 |
| Income tax | 26,000 |
| **Debt Service Capacity** | 306,271 |
| (Net acc. farm inc. + depreciation + term interest + non farm income - living costs - income tax) | |

| Payments: | |
|---|---|
| Principal | 228,579 |
| Interest | 119,445 |
| Total | 348,024 |

### After Change Statement and Projection (Year 2)

**Income (April 1, 2017 - March 31, 2018)**

| Income | | | | | |
|---|---|---|---|---|---|
| Crop sales | | | | | |
| wheat | 90,000 | x | 5.50 | 495,000 | |
| canola | 54,000 | x | 10.00 | 540,000 | |
| barley | 135,000 | x | 4.10 | 553,500 | |
| Total | | | | 1,588,500 | |
| Other income | | | | | |
| Gov't programs | | | | 0 | |
| Custom work | | | | 10,000 | |
| Other | | | | 11,500 | |
| Total | | | | 21,500 | |
| **Total Cash Income** | | | | 1,610,000 | |
| **Inc. side accrual adjustments** | | | | 0 | |
| **Total Accrued Income** | | | | 1,610,000 | |

**Expenses (April 1, 2017 - March 31, 2018)**

| Expense | |
|---|---|
| Cropping expense | 1,142,800 |
| Overhead expense | 53,800 |
| Operating interest | 18,929 |
| Term interest | 113,840 |
| **Total Cash Expense** | 1,329,369 |
| **Non Cash Expense** | |
| Depreciation | 97,380 |
| Exp. side acc. adj. | -1,025 |
| **Total Non Cash Expense** | 96,355 |
| **Total Accrued Expense** | 1,425,724 |
| **Net Accrued Farm Inc.** | 184,276 |
| Non farm income | 0 |
| Living costs | 66,000 |
| Income tax | 27,000 |
| **Debt Service Capacity** | 302,495 |
| (Net acc. farm inc. + depreciation + term interest + non farm income - living costs - income tax) | |

| Payments: | |
|---|---|
| Principal | 251,588 |
| Interest | 113,840 |
| Total | 365,428 |

| This Farm's Ratios: | Definition | Before Changes | After Changes: After Proposed Changes | After Changes: Projected at end of Year 1 | After Changes: Projected at end of Year 2 | Industry Standards: Good | Industry Standards: Caution | Industry Standards: Weak |
|---|---|---|---|---|---|---|---|---|
| Current Ratio: | *Current Assets/Current Debt* | 1.02 | 0.83 | 0.76 | 0.66 | >1.50 | 1.00-1.50 | <1.00 |
| Leverage Ratio: | *Total Debt/Net Worth* | 0.33 | 0.88 | 0.82 | 0.78 | <0.42 | 0.42-0.818 | >0.818 |
| Net Worth Ratio: | *Net Worth/Total Assets* | 0.75 | 0.53 | 0.55 | 0.56 | >0.70 | 0.55-0.70 | <.55 |
| Net Worth | *Total Assets - Total Debt* | 4,058,821 | 4,058,821 | 4,221,162 | 4,312,437 | | | |

| | Definition | Projected for Status Quo | Projected for Year 1 | Projected for Year 2 | Industry Standards: Good | Industry Standards: Caution | Industry Standards: Weak |
|---|---|---|---|---|---|---|---|
| Debt Servicing Ratio: | *Debt Service Capacity/Payments* | 1.14 | 0.88 | 0.83 | >1.50 | 1.10-1.50 | <1.10 |
| Return on Assets: | *(Net Farm Inc. + Int. - Living Costs)/Total Assets* | 2.51% | 3.06% | 3.15% | >5% | 1%-5% | <1% |
| Return on Equity: | *(Net Farm Inc - Living Costs)/Net Worth* | 2.05% | 2.55% | 2.74% | >7% | 4%-7% | <4% |
| Turnover Ratio: | *Gross Income/Total Assets* | 0.20 | 0.21 | 0.21 | >0.40 | 0.30-0.40 | <0.30 |
| Efficiency Ratio: | *(Exp. - Deprec. - Term Int.)/Gross Farm Inc.* | 0.75 | 0.74 | 0.63 | <0.65 | 0.65-0.80 | >0.80 |
| ABA Rating: | *Combined weighted rating of Current Ratio, Leverage ratio and Debt ServicingRatio* | 11.55 | 21.5 | 21.5 | <11.5 | 11.5-17.0 | >17.0 |
| Maximum Operating Loan Required = | | 375,070 | 690,663 | 745,245 | | | |
| Gross Farm Income | | 1,109,070 | 1,610,000 | 1,610,000 | | | |
| Net Farm Income | | 152,108 | 173,825 | 184,276 | | | |

Some comments about these results are as follows:

1. the proposed changes add significantly to overall risk as evidenced by the "After Changes" deterioration in the Current Ratio, Leverage Ratio and Debt Service Ratio. The weakening of these ratios suggests that with these changes, the farm business would become much more vulnerable to financial setbacks
2. the analysis done suggests that with the revenues and expenses projected, the farm should realize marginally higher levels of gross income, net income and return on assets and equity. The overall results are such that at the end of the second year, there should be an increase in net worth of approximately $250,000. It can be assumed that if these results continue for several years, the increase in net worth would increase further
3. the change would however, result in a significant increase in debt, and debt service (payment) requirements. With the proposed structure of this debt, and because ability to service debt is marginal even before the change, the projections indicate income

from all sources would not be sufficient to fully service the debt from income as it becomes due

4. the projected shortfall in ability to fully service debt in the first year is about $40,000, and about $60,000 in the second year. If this cannot be made up by either increased income, reduced expenses, or reduced payments, this change could end up being financially disastrous for this business.
5. the proposed changes would likely result in a significant increase in operating loan requirements in the first year, then increasing over time if the shortfall in ability to service debt relative to payment requirements continues as projected.

**Summary**

The projections done suggest that the expansion being considered has significant risks that Bob and Ellen just do not feel they can accept at this time. If yield and/or prices improve, it may be feasible for them, but even with that, the additional financial exposure would put what they have at risk, and if financial performance is even poorer than projected, the impact on them could be disastrous. Based on the results of this financial review, they decided not to proceed with the expansion at this time.

In his discussions with them, their Consultant Joe Analyst asked them if they have considered other options that would allow for expansion, but not have the same impact on them financially. Those they identify as possibilities are:

a. just add the 4 quarters (620 acres cultivated) of rented land. Adding this acreage would just require updating the harvesting equipment at a cost of $100,000, and purchase of $50,000 worth of bins. By working a few more hours, and possibly have a bit of the work custom done, they feel they could handle the extra acreage with their existing labour
b. just purchase the 4 quarters (600 acres cultivated) and not add the rented land. This change would require the same additional equipment, bins and labour as in a.) above
c. rent all the additional land instead of purchasing 4 of the quarters. This change would require the same changes to equipment, bins and labour as in the original scenario. Annual rent for the 8 quarters of land would be $97,600
d. setting aside the expansion option for 3 or 4 years, and during this time focus on reducing debt and building up their financial reserves and equity. At the end of this time period then, they could reassess their options, and expand then at that time with either a smaller additional land package, or something larger again if it appears feasible then.

The Cashes asked Joe Analyst to run the alternative scenarios a. through c. above, which was a simple exercise working from the full analysis completed. In the end, they decided against any expansion at this time because the potential for additional return did not justify the extra risk and work involved. They will follow option d. for the present, then perhaps do an expansion in some form at a point in the future when it appears there is adequate potential for it. They will stay in contact with their Consultant Joe, and engage him again if an opportunity arises that they would like to evaluate.