

Module 5
Preparing Agricultural Financial Statements:
The Income Statement and Cash Flow

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**Module 5: Preparing Agricultural Financial Statements:
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Learning Objectives

The learning objectives for this module are for participants to:

- Comprehend the linkages between the balance sheet, income statement, and cash flow when developing financial statements
- Understand the complexities of developing a farm or ranch income statement on an accrual-adjusted basis
- Learn the value of cash income statements in short and long run business decision making
- Understand how cash flow planning can be useful in strategic execution of the business plan and determining operating and cash flow needs throughout the year
- Appreciate the value of scenario planning in business decision making.

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Introduction

Now that you have completed your balance sheet, we will move on to understanding and exploring the dynamics of compiling an income statement and cash flow statement. While the balance sheet you developed in the last lesson illustrates your equity or net worth, now we want to look at profits and cash flow because their primary purpose is to pay bills and repay debt. First, we will explore the income statement. Then I will explain the cash flow statement and its importance.

Our discussion will focus on assessing income on a family farm, operating with both farm and non-farm sources of income. In the last module we discussed their balance sheet, examining assets, liabilities, and owner equity, as well as the consequences of deferred taxes. In this module we will examine their evolving business from income and cash flow viewpoints, utilizing the previously developed balance sheets to calculate key income measures.

Income Statement Overview

A business income statement, also called a profit and loss statement, is used to measure revenue and expenses over a specific accounting period. Unlike the balance sheet, which reflects the financial position at any given *point* in time, the income statement shows income and expenses for a *period* of time, usually for the time period of one year. Income statements can be used in several ways, for example: to determine your income tax payments, analyze a business' expansion potential, evaluate the profitability of an enterprise, and/or assist in loan repayment analysis.

Net income, or profit, is one of the most important factors that determine the long run viability of a business. Profits are needed to support a living, build equity, service debt, provide capital for expansion, and prepare for the future and also for possible retirement. As I mentioned, in contrast to a balance sheet, which shows financial position at a given point in time, an income statement measures revenue and expenses over a defined accounting period. This time period is usually January 1 thru December 31; however, some farm businesses use a different fiscal year, such as July 1 thru June 30.

In addition to determining the accounting period, identifying the business entity is also important when preparing an income statement. The income statement should be prepared for the same entity as the balance sheet, either business, personal, or consolidated. Because of the relationship between the balance sheet and income statement, the time period covered by the income statement should be the time between the beginning and ending balance sheets. For example, if the beginning balance sheet is dated January 1 and the ending balance sheet is dated December 31, then the income statement should cover the period from January 1 to December 31. The most common period is annually, although quarterly or monthly income statements are sometimes desired.

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All agricultural income statements include two categories: revenue and expenses. However, income statements can be prepared using two different methods, distinguished by the way revenue and expenses are derived. A *cash* income statement measures revenue only *when it is received* and expenses only *when they are paid*. An *accrual-adjusted* income statement is more complex and measures revenue *when it is generated or earned* and *expenses when they are incurred*, whether or not cash actually changes hands.

Cash Income Statement

The cash income statement (illustrated in Exhibit 1) is the easiest income statement to prepare and is the most common method used by agricultural businesses. You may be familiar with the Schedule F tax form used to file for tax compliance with the IRS, which is in a cash income statement format.

Exhibit 1:

Cash Income Statement	
Period: 1/1/XX-12/31/XX	
<u>REVENUE</u>	
Livestock	\$105,800
Crops	\$83,700
Government Payments	\$3,600
Custom Work	\$6,600
Total Revenue	\$199,700
<u>EXPENSES</u>	
Chemicals	\$1,600
Feed	\$40,000
Fertilizer	\$20,000
Gas, Fuel, Oil	\$5,000
Insurance	\$5,000
Hired Labor	\$14,500
Rent	\$3,000
Repairs and Maintenance	\$5,000
Seeds	\$4,000
Supplies	\$3,000
Property Taxes	\$11,400
Utilities	\$2,000
Vet and Medicine	\$1,000
Machine Hire	\$2,000
Other	\$2,000
Depreciation	\$7,000
Interest	\$24,000
Total Expenses	\$150,500
Net Farm Income (Before Taxes)	\$49,200

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Notice that there are two categories in the cash income statement: revenue and expenses. Both revenue and expenses can come from a variety of sources in an agricultural business.

The basic equation for the cash income statement is:

$$\text{Revenue} - \text{Expenses} = \text{Net Income (Loss)}$$

Total expenses are subtracted from total revenue or income to arrive at net cash farm income or loss, also called profit.

The revenue categories on the income statement can include:

- Cash revenue from the sale of livestock or other items bought for resale (revenue is reported net of the purchase cost or other basis)
- Cash revenue from the sale of livestock, produce, grains, and other products raised
- Distributions from cooperatives and agricultural program payments and other government programs
- Crop insurance proceeds
- Income from custom hire work
- Other sources of farm income

The expense items included on the statement can vary with the type of operation, but should always include all operating expenses, interest, and depreciation.

Depreciation is a special case. While it is not a cash expense, it is included on both the cash and accrual-adjusted income statements. Depreciation serves as the method of expensing the cost of capital purchases, such as equipment, breeding livestock, structures, and improvements. It is a way of spreading the cost of capital purchases over their useful life. The simplest method of calculating depreciation is the straight-line method. The basic equation is:

$$\text{Annual Depreciation Expense} = \frac{\text{Purchase Price} - \text{Salvage Value}}{\text{Years of Useful Life}}$$

Accelerated depreciation is sometimes used for tax purposes to lower taxable net income in a given period. Section 179 of the Internal Revenue Code allows for this in some circumstances. It should be noted if accelerated depreciation is being used because it will distort profitability.

What is not included on an income statement?

Note that family living expenses are not included on the income statement for businesses organized as sole proprietorships or partnerships. If you are completing an income statement for a corporation, owner withdrawals will be included as an expense on the income statement, usually in the form of salaries.

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Likewise, loan principal payments are also not included on the income statement. Repaying the principal on a loan is not an expense; rather, it is repayment of a debt obligation.

ROADSIDE CHAT #1: Is generating a profit important or do I need to minimize taxes and show tax losses?

A veterinarian friend of mine was applying for a home loan. The lender required three years of tax returns and the balance sheet. While the veterinarian had a strong balance sheet, he was denied the loan. Why? His veterinary business had not demonstrated a profit in the last three years. The reason was the use of accelerated depreciation and manipulation of revenue and expenses using cash basis accounting. The credit underwriters basically stated that the business was not profitable and had limited repayment despite his wife's school administrator position. The moral of the story is not to be ashamed of a profit that requires you to pay income taxes.

Limitations and Uses of Cash Income Statements

While the cash income statement is the easier of the two ways to prepare an income statement, it is inadequate for measuring true profitability because it does not account for changes in inventory, receivables, accounts payable, and, in some cases, timing. For example, producers can either delay or accelerate marketing commodities and delay or accelerate the purchase of inputs to reduce their tax liability.

That being said, a cash income statement or Schedule F tax form can be a valuable information source for your lender and other professionals for verification and analysis of credit and financial decisions. Most ag lenders will require three years of past financial statements including an annual Schedule F with appropriate statements, W-2 forms, and other verification of off-farm sources of income if used to repay loans.

Benefits

A major benefit of tax returns or cash income statements is that they show the components and generators of income. These statements assist the borrower and ag lender in identifying the primary repayment source and possibly a secondary source of repayment.

Lenders use tax returns to cross-check with both the business and personal balance sheets to verify information and develop questions to ask the borrower. For example, interest received and paid, income taxes paid, and level of depreciation reported can be valuable clues to credit risk and future direction of the business. Tax returns can alert lenders to potential changes in a borrower's financial situation; for example, sale of assets, filing status, start-ups, depreciation methods, business entity, divorce, medical problems, etc.

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A tax return can provide insight into assorted personal expenses that are often commingled with business expenses. For example, expensive vacations and other perks listed as business entertainment are clues. The number of dependents, earned interest, medical expenses, and retirement strategies can quickly provide clues to financial rigor and discipline also. Identifying these items is very important not only to lenders but also in family business arrangements and communications between family members.

Abuse of Cash Income Statements and Tax Returns

While tax returns have a great deal of benefit to borrowers and lending professionals, they definitely possess some limitations when used for analysis and decision-making.

Tax filers, particularly those who file cash basis returns, generally attempt to minimize taxable income. They accomplish this by deferring revenue, accelerating expenses or depreciation, or a combination of both. This can be detrimental to sound business and personal financial management decisions, particularly in the long run.

ROADSIDE CHAT #2: I've heard the statement, "Farmers go broke minimizing taxes." Is that a true statement?

Yes, in this life we cannot escape death and taxes. A classic example is when a producer has a good year, generates significant profit, purchases a tractor or building and accelerates depreciation, a non-cash expense, using Section 179, against income. While this reduces taxes in the given year or accounting period, the financial obligation is frequently three to ten years concerning the repayment of borrowing or replenishing cash. One needs to evaluate the long run as well as the short run consequences of tax decisions.

Tax returns contain many "non-cash" items and activities that can distort analysis. For example, accelerated depreciation rules that allow a business to write-off large sums of this non-cash cost can make a profitable business appear to be unprofitable. Some businesses will repay expenses or carry over operating losses, which will impact the bottom line. Others will pass income and losses from associated business interests through another entity, distorting the financial picture. Others use the business to disguise personal withdrawals and perks, which influence the returns.

Whether it is a cash or accrual-adjusted income statement, it is critical to determine if cash income items are recurring and sustainable. A one-time sale of a capital asset such as machinery or livestock can generate cash, but might also erode the productive asset base if used too often or liberally.

Both borrower and lender can determine the primary and secondary repayment sources from a tax return. For example, is income coming from off-farm

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employment, another business or partnership, or rental income from a beach house? Each has to be isolated by amount and stability.

Is the information from the returns realistic and verifiable given the income projection for repayment of the loan? Be aware that some ag lenders require original tax returns to reduce the chance of customer fraud or receiving false information. It is important to maintain tax records on file up to seven years for IRS compliance and possible background information for agreements and legal issues.

Using the Schedule F Tax Form

The Schedule F tax form is often used as an income statement. Although the Schedule F can offer some valuable insight, it is not an income statement and should not be used as such. However, in some cases it can be used effectively if three to five years of information is provided and the business is in a stable operating mode with no major adjustments. Using a series of Schedule F's as an income statement rests on the assumption that shifting income and expenses will even out over the years.

Preparing an Accrual-Adjusted Income Statement

Now let's travel "further down the road" and journey thru the process of preparing an accrual-adjusted income statement, which builds upon the cash income statement or Schedule F that was just discussed.

The Farm Financial Standards Council recommends the use of accrual-adjusted income statements. A University of Illinois and Purdue University study found that the difference between cash and accrual-adjusted income averaged 55 percent over five years, and was even higher (70 percent) in another study conducted in the early 1990s at the University of Illinois. This research emphasizes the importance of using an accrual-adjusted income statement when analyzing the viability of a farm business. Ideally, a business' accounting records prepared by a CPA will produce an accrual statement; however, in practice, adjustments are made to the cash income statement (or Schedule F) to prepare an accrual-adjusted income statement.

Exhibit 4 illustrates how accrual adjustments are prepared. To convert cash income to accrual-adjusted income, we must look at changes between the beginning-of-year and end-of-year balance sheets. Adjustments to revenue include changes in inventories and accounts receivable. In the expense section, adjustments are made for changes in assets like cash investment in growing crops and unused assets such as supplies, prepaid expenses, accrued expenses, and accounts payable. Gains or losses on the sale of capital assets are also added or subtracted. We will explain these changes in more depth later.

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You, Inc. – Complete the Value Differences

Now let's stop for a moment and analyze the differences between your beginning and end-of-year balance sheets. Using the sample balance sheets as a guide (Exhibits 2 and 3), list the value differences in payables, receivables, prepaid expenses, accrued expenses, supplies, and accrued interest from the beginning to the end of the year for your business.

Now let's walk through the process of converting the cash income statement or Schedule F into an accrual-adjusted statement to accurately assess the profitability of the example business. To complete this task you will need to reference the cash income statement or Schedule F (Exhibit 1) and the sample beginning and ending balance sheets (Exhibit 2 and 3). Now, I will walk you through the accrual-adjustment illustrations shown in Exhibit 4.

Exhibit 2:

Balance Sheet - Beginning of Year

ASSETS			LIABILITIES		
	Cost	Market Value		Cost	Market Value
CURRENT ASSETS			CURRENT LIABILITIES		
Cash	\$ 6,750	6,750	Accounts payable	\$ 3,500	3,500
Marketable securities	\$ 2,500	5,500	Operating loans due within 1 year	\$ 45,000	45,000
Accounts receivable	\$ 600	600	Principal portion of long-term		
Livestock held for sale	\$ 48,500	48,500	debt due within 1 year	\$ 34,000	34,000
Crops and feed	\$ 61,500	61,500	Accrued interest & expenses	\$ 10,500	10,500
Cash investment in crops	\$ 1,200	1,200	Estimated accrued taxes	\$ 8,600	8,600
Supplies	\$ 1,300	1,300	Accrued rents payable	\$ 1,300	1,300
Prepaid expenses	\$ 500	500	Deferred Tax liability on current assets		
	\$		including marketable securities		32,445
Total Current Assets	\$ 122,850	125,850	Total Current Liabilities	\$ 102,900	135,345
NON-CURRENT ASSETS			NON-CURRENT LIABILITIES		
Machinery and equipment		85,500	Machinery & equipment loans		
Cost	110,500	0	(principal due beyond 12 months)	\$ 46,000	46,000
Acc. Dep.	40,000	0	Real estate and building loans		
Breeding livestock	\$ 22,500	22,500	(principal due beyond 12 months)	\$ 175,000	175,000
Retirement accounts	6,500	6,500	Deferred tax liabilities on non-current assets		69,650
Cash value of life insurance	\$ 8,100	8,100			
Securities not readily marketable	\$ 4,600	4,600			
Personal and recreational vehicles	13,100	13,100			
Household goods and personal items	8,000	8,000			
Farm real estate and buildings	0	495,000			
Cost	380,000				
Acc. Dep.	40,000	0			
Total Non-Current Assets	\$ 473,300	643,300	Total Non-Current Liabilities	\$ 221,000	290,650
			Total Liabilities	\$ 323,900	425,995
Total Assets	\$ 596,150	769,150	Owner's Equity	\$ 272,250	343,155
			Total Liabilities + Owner's Equity	\$ 596,150	769,150

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Exhibit 3:

Balance Sheet - End of Year

ASSETS			LIABILITIES		
	Cost	Market Value		Cost	Market Value
CURRENT ASSETS			CURRENT LIABILITIES		
Cash	\$ 1,800	1,800	Accounts payable	\$ 5,300	5,300
Marketable securities	\$ 2,500	5,800	Operating loans due within 1 year	\$ 41,000	41,000
Accounts receivable	\$ 900	900	Principal portion of long-term debt due within 1 year	\$ 35,500	35,500
Livestock held for sale	\$ 54,100	54,100	Accrued interest & expenses	\$ 9,400	9,400
Crops and feed	\$ 68,300	68,300	Estimated accrued taxes	\$ 8,800	8,800
Cash investment in crops	\$ 1,450	1,450	Accrued rents payable	\$ 1,300	1,300
Supplies	\$ 600	600	Deferred Tax liability on current assets including marketable securities		36,155
Prepaid expenses	\$ 350	350			
	\$				
Total Current Assets	\$ 130,000	133,300	Total Current Liabilities	\$ 101,300	137,455
NON-CURRENT ASSETS			NON-CURRENT LIABILITIES		
Machinery and equipment		87,500	Machinery & equipment loans (principal due beyond 12 months)	\$ 37,450	37,450
Cost 116,500		0			
Acc. Dep. 43,000	\$ 73,500	0	Real estate and building loans (principal due beyond 12 months)	\$ 149,400	149,400
Breeding livestock	\$ 20,500	20,500			
Retirement accounts	8,600	8,600	Deferred tax liability on non-current assets		75,635
Cash value of life insurance	\$ 8,650	8,650			
Securities not readily marketable	\$ 4,600	4,600			
Personal and recreational vehicles	11,900	11,900			
Household goods and personal items	8,000	8,000			
Farm real estate and buildings	0	509,000			
Cost 380,000					
Acc. Dep. 44,000	\$ 336,000	0			
Total Non-Current Assets	\$ 471,750	658,750	Total Non-Current Liabilities	\$ 186,850	262,485
			Total Liabilities	\$ 288,150	399,940
Total Assets	\$ 601,750	792,050	Owner's Equity	\$ 313,600	392,110
			Total Liabilities + Owner's Equity	\$ 601,750	792,050

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Exhibit 4:

Accrual-Adjusted Income Worksheet		
<i>"+" increases accrual-adjusted net income; "-" reduces accrual-adjusted net income. Parentheses (x) indicate items that reduce net farm income and should be subtracted when calculating accrual-adjusted income.</i>		
		Year ending 12/31/YY
1	Schedule F Net Cash Farm Income (Profit or Loss)	+ \$49,200
2	Gain/loss from the sale of culled breeding livestock (purchased & raised)*	+/- (\$1,400)
3	Change in value due to change in quantity of raised breeding livestock**	+/-
4	Inventory (livestock & crop), Increase	+ \$12,400
5	Inventory (livestock & crop), Decrease	-
6	Accounts receivable, Increase	+ \$300
7	Accounts receivable, Decrease	-
8	Investment in crops, Increase	+ \$250
9	Investment in crops, Decrease	-
10	Supplies, Increase	+
11	Supplies, Decrease	- (\$700)
12	Prepaid expenses, Increase	+
13	Prepaid expenses, Decrease	- (\$150)
14	Accounts/rent payable, Increase	- (\$1,800)
15	Accounts/rent payable, Decrease	+
16	Accrued expenses (taxes, interest, etc.), Increase	-
17	Accrued expenses (taxes, interest, etc.), Decrease	+ \$900
18	Accrual-adjusted Net Farm Income from Operations (sum of lines 1-17 above)	\$59,000
19	Gain/loss from sale of farm capital assets excluding culled breeding livestock***	+/- \$4,500
20	Gain/loss due to change in general base values of breeding livestock	+/-
21	Accrual-adjusted Net Farm Income (sum of lines 18, 19 & 20)	\$63,500
*Found on tax form 4797 of income tax return "normal culling practices"		
**Value above normal replacement numbers		
*** Normal capital transactions (i.e. machinery, equipment, real estate)		

In the cash income statement (Exhibit 1), notice net cash farm income was \$49,200. This is the starting point for accrual adjustments, and this amount goes on Line 1 of the accrual-adjusted income worksheet (Exhibit 4). The producer had losses of \$1,400 from the sale of culled breeding livestock (Line 2). There is no change in value due to change in quantity of raised breeding livestock.

Adjustments to Current Assets

See in the Beginning Balance Sheet (Exhibit 2) under current assets, that livestock and crops held for sale were \$48,500 and \$61,500, respectively. Now, see in the Ending Balance Sheet (Exhibit 3) under current assets that end-of-year inventories

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of livestock and crops were \$54,100 and \$68,300, respectively. First, we calculate the difference in livestock of \$5,600. Next we calculate the difference in crops of \$6,800. Adding the two differences together gives us \$12,400, which is an increase or positive change in accrual revenue of \$12,400 (Line 4) which had not been sold as cash on the tax records of the example farm.

Another adjustment when comparing beginning and end-of-year balance sheets is in accounts receivable. This amount is for hay sold where cash had not exchanged hands. See the beginning-year accounts receivable value of \$600 and the end-of-year value of \$900. This would be recorded as a \$300 increase in accounts receivable (Line 6).

Another line item to adjust is the producer's value of investment in crops, i.e. winter cover crop. This value increased by \$250 (Line 8) from the beginning to the end of the year balance sheets.

On the negative side, supplies (in this case bull semen) and prepaid expenses (liability insurance), had declined by \$700 and \$150, respectively, when comparing beginning and ending balance sheets (Lines 11 & 13).

Adjustments to Current Liabilities

Shifting to the liabilities section on the right hand side of the balance sheets, let's explore the positive and negative changes. Accounts payable at the feed store increased from \$3,500 to \$5,300, a change of \$1,800, which would negatively impact net cash farm income. (Line 14)

Accrued interest on loans outstanding that had accrued or accumulated, but had not been paid is reduced by \$900 from the beginning to the end of the year which is a positive addition to net cash farm income.(Line 17) However, please note that accrued rent payable did not change, so no adjustment is needed.

One may also ask why the changes in cash and marketable securities on the asset side and operating loan and principal due within the year on the liability side were not included. These assets either do not impact revenue (cash) or have not been converted into a gain or loss as a result of their sale (marketable securities). The operating loan represents a financial obligation that does not impact expenses when paid, because the operating loan was used to pay the operating expenses that are already recorded on the income statement as expenses.

Calculating Accrual-adjusted Income

Finally, sum all the positive items and deduct the negative items on the Accrual-adjusted Income Worksheet. In this case, net income reported on the cash income statement was \$49,200; however, accrual-adjusted net farm income from operations was approximately \$10,000 more, at \$59,000, demonstrating even more favorable results. However, we have one more step. The producer sold a piece of used farm equipment and realized a gain of \$4,500. When this is included, the actual accrual-

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adjusted net farm income was \$63,500. One would have to determine if this was a one-time sale or if this was recurring revenue because it could distort true profitability.

ROADSIDE CHAT #3: Could you give an example of “Change in value due to change in quantity of raised breeding livestock,” on line #3 of the accrual-adjusted income worksheet?

An example would be a dairyman or beef cattle rancher who does a superior job raising replacement heifers or who uses sexed semen which results in extra heifers. The value of the extra heifers above normal replacement numbers would be listed here. This is because extra feed, labor and other costs could have been incurred resulting in a distortion of expenses. However, one would have to determine if this is an annual occurrence or a one-time event.

You, Inc. – Complete Accrual-adjustment Worksheet

Now transfer the value differences from the previous You, Inc. exercise to the accrual-adjusted worksheet utilizing your cash income statement or Schedule F and balance sheet differences.

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Cash Flow Projection

The balance sheet and income statement provide present and historical financial information that reflect the past financial performance of a business. However producers and lenders are often equally, if not more, interested in a business' future performance. For this reason, a cash flow projection is a valuable financial tool in the development, conceptualization, and execution of your business plan.

A cash flow projection summarizes cash inflows and outflows over a given period. A projection can be prepared for the business, individual or a consolidation of both, similar to the balance sheet and income statement. The cash flow projection can be useful for preparing projected income statements and balance sheets, and for determining:

- The need for operating lines of credit to cover cash flow deficits.
- Periods of excess cash when funds could be placed in income-earning assets such as money markets or a future payment fund like that offered by Farm Credit.
- The need for changes in marketing or expenditure plans.
- The cash flow feasibility of a new investment
- The cash flow in a transition year of expansion or change before the operation is fully engaged.
- Funds available for long term retirement or prepayment of loans and building working capital.

ROADSIDE CHAT #4: Where should I get my assumptions and estimates for prices, costs, and yield expectations to develop an accurate projection?

A good place to start is your past income statements, preferably a three-year trend/average. If you are building off these results or developing a business from scratch, be sure to list key assumptions on prices, costs, and yields utilizing computer spreadsheets. Include the average, worst, and best case scenarios for sensitivity testing with a short summary of results. Your loan officer, advisory team, or an industry peer can be valuable in testing assumptions and reviewing results.

You, Inc. – Develop Key Assumptions

Develop key assumptions (i.e. input costs, revenue, production, and price) that would go into the cash flow projections for your business.

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Exhibit 5:

Cash Flow Statement - Projected Year

CASH INFLOWS	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Cash Receipts					
Livestock	\$29,000	\$25,000	\$26,000	\$29,000	\$109,000
Crops	\$25,000	\$8,000	\$0	\$51,000	\$84,000
Government Payments	\$0	\$4,200	\$0	\$0	\$4,200
Custom Work	\$2,400	\$1,400	\$1,300	\$2,000	\$7,100
Non-Farm Revenue	\$5,200	\$5,200	\$5,200	\$5,200	\$20,800
Capital Sales	\$0	\$0	\$0	\$0	\$0
New Term Borrowing	\$0	\$0	\$0	\$0	\$0
Total Cash Inflows	\$61,600	\$43,800	\$32,500	\$87,200	\$225,100
CASH OUTFLOWS					
Cash Expenses					
Chemicals	\$600	\$600	\$400	\$300	\$1,900
Feed	\$13,000	\$8,000	\$8,000	\$13,000	\$42,000
Fertilizer	\$17,500	\$2,100	\$400	\$1,100	\$21,100
Gas, Fuel, Oil	\$600	\$2,100	\$600	\$2,100	\$5,400
Insurance	\$0	\$2,500	\$0	\$2,500	\$5,000
Hired Labor	\$3,000	\$4,000	\$2,500	\$5,000	\$14,500
Rent	\$3,000	\$0	\$0	\$0	\$3,000
Repairs and Maintenance	\$500	\$2,000	\$1,000	\$1,500	\$5,000
Seeds	\$4,200	\$0	\$0	\$0	\$4,200
Supplies	\$850	\$850	\$850	\$850	\$3,400
Property Taxes	\$5,700	\$0	\$5,700	\$0	\$11,400
Utilities	\$500	\$500	\$500	\$500	\$2,000
Vet and Medicine	\$250	\$250	\$250	\$250	\$1,000
Machine Hire	\$0	\$1,250	\$0	\$1,400	\$2,650
Other	\$500	\$500	\$500	\$500	\$2,000
Family Living and Income Taxes	\$8,000	\$12,000	\$8,000	\$9,000	\$37,000
Capital Purchases	\$0	\$0	\$0	\$0	\$0
Term Debt Interest Payments	\$0	\$11,700	\$0	\$10,600	\$22,300
Term Debt Principal Payments	\$0	\$17,700	\$0	\$17,900	\$35,600
Total Cash Outflows	\$58,200	\$66,050	\$28,700	\$66,500	\$219,450
Net Cash Flow-Surplus/(Deficit)	\$3,400	(\$22,250)	\$3,800	\$20,700	\$5,650
Beginning Cash Balance	\$1,800	\$5,200	\$1,000	\$1,000	\$1,800
Unadjusted Cash Balance	\$5,200	(\$17,050)	\$4,800	\$21,700	\$7,450
Minimum Balance Desired	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Operating Loan Needed	\$0	\$18,050	\$0	\$0	\$18,050
Cumulative Operating Loan	\$0	\$18,050	\$18,050	\$14,250	\$0
Repayment of Operating Loan	\$0	\$0	\$3,800	\$14,250	\$18,050
Accrued Interest on Operating Loan*	\$0	\$451	\$808	\$808	\$0
Interest Paid on Operating Loan	\$0	\$0	\$0	\$808	\$808
Ending Cash Balance	\$5,200	\$1,000	\$1,000	\$6,642	\$6,642

*assumes 10% annual interest rate on operating loan

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Components

While cash flow statement formats can vary, there are three basic components: Cash inflows, cash outflows, and operating finance activities.

The preparation of a cash flow statement follows the following equation:

$$\text{Beginning Cash Balance} + \text{Cash Inflows} - \text{Cash Outflows} = \text{Ending Cash Balance}$$

Exhibit 5 illustrates a cash flow projection. Cash inflows include receipts from farm and non-farm activities that are divided into relevant categories for the type of business being examined. Cash outflows include a detailed listing of cash expenses as well as principal and interest payments on term debt.

Note that depreciation does not appear on the cash flow projection because it is not a cash expense and will not impact cash flow. Off-farm revenue should be included if it is agreed upon by your spouse and partners. The operating finance activities section outlines the net cash flows for each quarter along with the short-term borrowing needs, interest accrued, accounts payable, and repayment of the line of credit.

Example

Let's take time to examine the Cash Flow Statement (Exhibit 5) for the case producer. See under cash Inflows that cash receipts from livestock are very important and projected to be stable throughout the year. Crop sales, on the other hand, are only projected to occur in the first, second, and fourth quarters, linking with the producer's marketing program. Government payments and side custom work, while small, would supplement revenue. Non-farm revenue should provide additional cash inflows throughout the year.

Examining the cash outflows, or expenses, note that expenses are projected to be highest in the first, second, and fourth quarters. Note that this is influenced by fertilizer, feed, property taxes, and, of course, term debt payments in the second and fourth quarters.

This demonstrates that a cash flow projection is not just an academic exercise. It can be very helpful in structuring debt payments. Anticipating the timing of major expenses is imperative in management planning, execution of strategies, and review of outcomes.

In the bottom section of the cash flow projection our producer can ascertain the timing of operating loan needs and peak dollar amounts needed. Notice that an operating loan of \$18,050 is needed in the second quarter due to a cash flow deficit, and the operating loan is repaid with interest in the third and fourth quarters, while holding a minimum of \$1,000 cash balance.

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In analyzing this projected performance, one may be disappointed with only a slight increase in cash balance from the beginning to the end of the year. However, it is important to realize that the producer (and his or her family) will pay down principal obligations of \$35,600, increasing their overall net worth, while having projected living expenses and income taxes of only \$37,000. Also note that the business is quite dependent on non-farm income to supplement either business or family withdrawals.

Cash Flow Scenario Testing

A one-year cash flow projection can be completed for different scenarios to examine price, cost and any related impacts. Cash flow projections for multiple years may also be useful when a business is being developed, in order to project cash needs prior to full production, or adequate production to break even.

Different cash flow scenarios may include: “How would cash flow be affected if commodity prices were 50 cents lower than expected?” or “What is the impact of a 10, 20 or 30 percent increase in fertilizer costs?” Plugging these changes into a spreadsheet and testing these options helps identify how sensitive an operation or projected scenario can be to changes in the market environment. Remember that a cash flow projection is only as good as the assumptions and information used to prepare it.

ROADSIDE CHAT #5: Dr. Kohl, you have utilized cash flows and variance analysis in your farm business. Have they been useful tools?

Absolutely! For a number of years, Alicia and I have developed business plans for our dairy creamery business which include cash flows and budgets with best, average and worst case scenarios with different assumptions. What is so useful is to track monthly, quarterly, semi-annually and annually projected to actual with noted difference. We then analyze the deviations and determine whether it was the result of macro events, i.e. price and input cost, or management internally, i.e. better labor utilization or purchasing. These are used to tweak our management from an objective manner and enhance communication. The lender and owners really like it when we exceed projections as we track business performance throughout the year.

You, Inc. – Determine Scenarios to Test

Identify possible scenarios you would want to test like price, input costs, production, etc. with specific numbers, i.e. increase or decline of production by 20 percent, or similar price scenarios.

There you have it, the income statement and cash flow projection. Whether you are preparing your own statements or analyzing those prepared by an accountant, hopefully this discussion provides a good basic understanding of how to prepare financial statements. This knowledge can be valuable both internally as a

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management tool, and externally for use with professionals. Now, it is your turn to complete the income statement and projected cash flow for your own business plan.