

# Chapter 1 \*

## OVERVIEW OF FARM MANAGEMENT

### Introduction

*Tax management* is an integral part of *farm management*. For some production decisions, such as whether to plant corn or soybeans this year, tax considerations have little or no impact. But tax considerations may have a major effect on the timing of income and deductions. (See Chapter 5 in this guide for an in-depth discussion of timing.) As a result, tax considerations can be a major factor in determining how some farm transactions are structured, such as depreciating or expensing machinery and equipment, prepaying farm expenses such as feed or fertilizer, or using a deferred payment contract (installment sale method) when selling raised production.

For example, a producer may take advantage of the like-kind exchange tax provisions to avoid recognizing gain when exchanging one parcel of land for another. The adjusted basis of the old parcel is subtracted from the gain to determine the amount of realized gain. The resulting realized gain reduces the basis of the new land parcel, and also the amount of taxable income that would have resulted from the outright sale of the land and purchase of the replacement parcel. The basis of the new land and the tax recognition is postponed until the new land is sold.

Farm managers can make two types of mistakes with respect to taxes:

1. They can ignore the tax consequences of their decisions entirely, so that after-tax income is lost by not taking advantage of tax-reduction opportunities.
2. They can focus so much on reducing taxes that after-tax income is reduced. Producers must be aware of taxes and tax laws, but they should not let tax considerations overly influence their decisions.

This chapter reviews basic farm-management concepts and how they may be affected by tax considerations. It also illustrates how managing taxes can increase a farmer's after-tax net income. Additionally, the purpose of this chapter is to create a baseline for the tax rules and tax management tools that are presented in this guide.

### Budgeting

Budgeting is an analytical technique used to evaluate certain changes in the farm operation or to project farm income and cash flow. Budgeting can be done by hand or by computer. The four main types of

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\* This material is based upon work supported by the U.S. Department of Agriculture, under agreement number FSA21CPT0012032. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture. In addition, any reference to specific brands or types of products or services does not constitute or imply an endorsement by the U.S. Department of Agriculture for those products or services.

budgets are enterprise budgets, partial budgets, total farm budgets, and cash-flow budgets. All of these budgets are based on estimates of future performance. Farmers should draw upon their own experiences and be as realistic as possible in this planning process. Tax considerations can be part of any of these budgets, reflecting changes in the farmer's tax situation that would occur as a result of the alternatives being considered.

(A number of tools are available at <http://www.extension.iastate.edu/agdm/wdfinancial.html#analysis>).

## Enterprise Budgets

The enterprise budget projects the costs and returns of an activity, such as producing grain, raising livestock, or growing vegetables, during a production period. The budget for a specific production system includes the inputs and costs, as well as the production and expected returns. Comparing net returns among enterprises allows the operator to determine the most profitable allocation of the farm's resources over time. Most budgets are based upon a one-year production cycle and use a common measure of profitability, such as net return per acre or per head.

## Partial Budgets

Partial budgets are used to make decisions involving only part of the farm business. Typically, the changes in receipts and costs of Alternative A are compared with the changes in receipts and costs of Alternative B, and the alternative with the higher net income is selected. Partial budgets do not take the time value of money into consideration.

### Example 1.1: Corn vs. Soybeans

A farmer is comparing production of an acre of corn versus an acre of soybeans. The variable input costs (seed, fertilizer, chemicals, fuel, etc.) are about \$680 per acre for corn and \$360 per acre for soybeans. Each acre of corn is expected to produce about \$1,340 of revenue, compared to \$940 for soybeans. The per-acre return to the operator is \$660 ( $\$1,340 - \$680$ ) for corn and \$580 ( $\$940 - \$360$ ) for soybeans. A producer in this situation will tend to increase the acres planted in corn.

The expenses considered in Example 1.1 are ordinary current expenses, and the income for both crops is ordinary income. The tax treatment of expenses or receipts does not vary by crop. Thus, as noted in the introduction to this chapter, taxes have no effect on this decision.

In contrast, Example 1.2 looks at the tax impact of an equipment lease versus a purchase. An analysis tool to help with this comparison is accessible at <http://www.farmdoc.illinois.edu/fasttools>.

**Example 1.2: Lease vs. Purchase of Machinery**

A farmer can lease a \$100,000 tractor for 5 years for a tax-deductible lease payment of \$23,017 per year. Alternatively, the farmer could buy the tractor with a 30% down payment, signing a 5-year loan with a 6% interest rate with two payments due per year totaling \$16,412. The interest and depreciation are tax deductible.

If farmer Anne's marginal income and self-employment tax rate is 42%, the after-tax net present value of the outflows (discussed later in the chapter) is \$1,166 less with the lease than the purchase. In contrast, if farmer Ben's marginal income and self-employment tax is 15%, the after-tax net present value of the purchase is \$1,214 less than the lease. Anne would generally prefer the lease, while Ben would generally prefer the purchase.

**Cross-Reference**

For a discussion of whether a transaction is a lease or a purchase, see Chapter 4 of this guide.

**Total Farm Budget**

Total farm budgets are typically prepared for decisions having a major impact on the farm. A whole farm budget summarizes the information for all the operation's enterprises, providing an estimate of the operation's net returns (profit). It is used for whole-farm planning. Receipts, expenses, returns, and taxes should be budgeted for the current and the alternative situations. If farm income changes substantially, the associated change in taxes may determine which plan is best to maximize after-tax net income. Go to <http://www.extension.iastate.edu/agdm/wdfinancial.html#analysis> for a discussion of budgeting procedures.

**Cash-Flow Budget**

Partial and total farm budgets address the question, "Will it pay?" Without a positive answer to that question, a producer should not proceed. However, the answer to the "Can I pay for it?" question must also be positive. The cash flow associated with an investment is critical when loans are used to implement a decision. A tax-deductible expense does not necessarily generate the funds needed to make scheduled loan payments.

**Example 1.3: Tax Savings and Loan Repayment**

Cecile paid \$100,000 for a piece of farm equipment and will deduct \$10,710, \$19,130, and \$15,030 in depreciation for years 1, 2, and 3, respectively. If Cecile makes a 30% down payment and finances the \$70,000 balance over 5 years at 6%, the loan is amortized with two payments per year totaling \$16,412. If her marginal tax rate (including federal and state income and self-employment taxes) is 35%, the tax savings from the depreciation deductions for the first 3 years will average \$5,235 per year, and therefore will not generate enough tax savings to make the loan payments.

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## Decision-Making Considerations

Farmers must evaluate alternatives to make management decisions. Marginal analysis is commonly used in evaluating alternatives. For example, how many pounds of nitrogen should be applied per acre to a specific field of corn? Do the savings on inputs from variable-rate application cover the added costs of variable-rate application?

Many alternatives considered by farmers involve investments that have costs and returns spread over a number of years. The costs and returns may occur at different points in time, and the lives of the investments are likely to be different. This difference in timing adds complexity to comparing the alternatives, because a dollar to be received 10 years from today is not worth the same amount as a dollar received today. Discounting the costs and returns of each alternative to their present value allows an appropriate comparison of the alternatives.

## Marginal Analysis

“Marginal cost equals marginal revenue” may bring back memories of Economics 101, but the message is an important one. Additional units of an input should be used as long as the additional cost is less than the additional revenue produced. Profit is maximized when marginal costs equal marginal revenue. If the producer’s actions affect the prices of the product or costs of an input, the terms *marginal value product* and *marginal input costs* are typically used, but the underlying concept is unchanged.

The table in Figure 1.1 illustrates a classic example of marginal analysis with nitrogen applications on corn. If nitrogen application is increased from 200 to 240 pounds per acre at a marginal cost of \$12, corn production increases by 7.2 (157.0 – 149.8) bushels per acre, which adds \$28.80 of revenue for a \$16.80 (\$28.80 – \$12) increase in profit. However, increasing the nitrogen application from 320 to 360 pounds, at a cost of \$12, results in only \$11.60 of additional income. Revenue from the last unit of nitrogen is less than the value of corn produced. Therefore, the last unit of nitrogen should not be applied.

*Figure 1.1 Level of Nitrogen Fertilizer Application*

Pounds of Nitrogen per Acre	Marginal Cost of Fertilizer	Bushels of Corn per Acre	Additional Bushels of Corn per Acre	Marginal Revenue from Corn
200	\$60	149.8	149.8	\$599.20
240	\$12	157.0	7.2	\$28.80
280	\$12	163.4	6.4	\$25.60
320	\$12	167.2	3.8	\$15.20
360	\$12	170.1	2.9	\$11.60

## Time Value of Money

Farmers often postpone sales of raised commodities or use deferred-payment contracts to delay receipts into the year following the year of production. These techniques may be used to control the farmer’s marginal tax rate.

**Cross-Reference**

See Chapter 5 of this guide for a discussion of managing the timing of income and deductions.

A secondary effect of such strategies is deferring the payment of income and self-employment taxes, which allows the farmer to use the deferred taxes interest-free for a year. As shown in Figure 1.2, the present value of a \$1,000 payment deferred for a year with an 8% discount is \$925.90, a savings of \$74.10 (\$1,000 – \$925.90). If the deferral period is increased to 4 years, the net present value of \$1,000 with a 6% discount rate is \$792.10, a savings of almost \$208. If the discount rate is 8%, the present value of a 4-year deferral is \$735.

*Figure 1.2 Time Value of Money*

Year	Discount Rate	Present Value of \$1,000			Amount of \$1,000 at Compound Interest		
		4%	6%	8%	4%	6%	8%
1		961.50	943.47	925.90	1,040.00	1,060.00	1,080.00
2		924.60	890.00	857.30	1,081.60	1,123.60	1,166.40
3		889.00	839.60	772.20	1,124.86	1,191.01	1,259.71
4		854.80	792.10	735.00	1,169.85	1,262.47	1,360.48
5		821.90	747.30	680.60	1,216.65	1,338.22	1,469.32
10		675.60	558.40	463.20	1,480.34	1,709.84	2,158.92
20		456.40	311.80	214.50	2,191.11	3,207.12	4,660.94

Compound interest increases the return on some investments.

## Farm Financial Statements

Records, whether from a computerized record system, a paper recordkeeping system, or even records provided by a recordkeeping service, document the farm’s income and expenses, but they do not provide useful tools for analyzing the farm’s operations.

The main reason most farmers keep records is for tax reporting — an after-the-fact method that does not provide any meaningful data by itself. Just tracking the figures needed to prepare a tax return typically does not allow analysis and decision-making throughout the year to handle the financial issues that transpire during the year. It also does not guarantee that all the farm’s income and expenses are captured because there is no checks-and-balances system.

Lenders and agricultural consultants often are concerned that a farmer lacks adequate records to monitor and analyze the farming business’s financial health. Lack of financial data makes it difficult to

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determine the farm's actual cost of producing the end product, to ascertain the farmer's ability to service debt obligations, and even to develop plans if the operation has major financial problems.

The recommended set of financial statements can help in analyzing an operation in a consistent manner. They include balance sheets, income statements, and cash flow statements for each farming operation. Combining these statements with financial measures (discussed later in this chapter) provides a base guideline to measure the data and provides useful decision-making information for farmers. They are a valuable way of highlighting areas to focus on in your analysis and decision making. Examining production and other information along with the financial measures can lead to robust decisions to maximize the operation's potential.

## Balance Sheet Shows Stability

A balance sheet has two parts that must equal, or "balance", each other. This financial report provides indications about the farm's ability to support its ongoing operations, which helps determine how stable the farming operation is. This guide presents a book-value balance sheet and a market-value balance sheet, and discusses how the values differ between the two. The reason for presenting the two is to provide a basis for understanding the reporting of income tax liability associated with normal business activities and the deferred tax liability that would exist in the event of a deemed sale or liquidation.

## How the Balance Sheet Works

The following equation divides the balance sheet into two parts. The totals of each of the two parts must be equal.

$$\text{Assets} = \text{Liabilities} + \text{Owner's Equity}$$

The balance sheet is presented as a snapshot of the operation's financial position at a single point in time, but it carries over from year to year as the farmer buys and sells assets or pays down debt. Figure 1.3 shows the organization of a balance sheet. The two main sections, Assets and Liabilities, are organized by timeframes. For assets, the gauge is liquidity, or how easily the asset can be converted to cash. For liabilities, the measure is the length of the loan, from the shortest to the longest.

*Figure 1.3 Balance Sheets*

<b>Book Value Balance Sheet</b>			
<b>Business Assets and Liabilities as of December 31, 20XX</b>			
<b>ASSETS</b>		<b>LIABILITIES</b>	
Cash	\$ 20,883	Accounts Payable, Crops	\$ -
Accounts Receivable, Crops	\$ 4,200	Accounts Payable, Livestock	\$ 2,631
Accounts Receivable, Livestock	\$ -	Notes Due Within One Year	\$ 38,228
Inventories, Crops	\$ -	Current Portion of Term Debt	\$ 23,126
Inventories, Feed	\$ -	Accrued Interest, Notes Due Within One Year	\$ 1,354
Inventories, Livestock	\$ -	Accrued Interest, Noncurrent Loans	\$ 9,976
Inventories, Supplies	\$ -	Income Taxes Payable	\$ 6,859
Prepaid Expenses	\$ -	Self-Employment Tax Payable	\$ 4,208
Cash Investment in Growing Crops	\$ -	Deferred Tax on Current Assets	\$ -
Other Current Assets	\$ -	Other Accrued Expenses	\$ -
		Other Current Liabilities	\$ -
<b>Total Current Assets</b>	<b>\$ 25,083</b>	<b>Total Current Liabilities</b>	<b>\$ 86,383</b>
Breeding Livestock	\$ 108,739	Noncurrent Portion, Notes Payable	\$ 26,503
Machinery & Equipment	\$ 152,966	Noncurrent Portion, Real Estate Debt	\$ 200,747
Investments in Cooperatives	\$ 11,105	Deferred Tax on Non-Current Assets	\$ -
Real Estate	\$ 464,896	Other Noncurrent Liabilities	\$ -
Buildings & Improvements	\$ 23,696		
Other Assets	\$ -		
<b>Total Noncurrent Assets</b>	<b>\$ 761,403</b>	<b>Total Noncurrent Liabilities</b>	<b>\$ 227,250</b>
		Total Business Liabilities	\$ 313,633
		Farm Business Equity	\$ 472,853
<b>Total Business Assets</b>	<b>\$ 786,486</b>	<b>Total Business Liabilities &amp; Owner Equity</b>	<b>\$ 786,486</b>

<b>Market Value Balance Sheet</b>			
<b>Business Assets and Liabilities as of December 31, 20XX</b>			
<b>ASSETS</b>		<b>LIABILITIES</b>	
Cash	\$ 20,883	Accounts Payable, Crops	\$ -
Accounts Receivable, Crops	\$ 4,200	Accounts Payable, Livestock	\$ 2,631
Accounts Receivable, Livestock	\$ -	Notes Due Within One Year	\$ 38,228
Inventories, Crops	\$ 35,500	Current Portion of Term Debt	\$ 23,126
Inventories, Feed	\$ 13,130	Accrued Interest, Notes Due Within One Year	\$ 1,354
Inventories, Livestock	\$ 20,700	Accrued Interest, Noncurrent Loans	\$ 9,976
Inventories, Supplies	\$ 1,019	Income Taxes Payable	\$ 6,859
Prepaid Expenses	\$ 18,000	Self-Employment Tax Payable	\$ 4,208
Cash Investment in Growing Crops	\$ 14,160	Deferred Tax on Current Assets	\$ 31,225
Other Current Assets	\$ -	Other Accrued Expenses	\$ -
		Other Current Liabilities	\$ -
<b>Total Current Assets</b>	<b>\$ 127,592</b>	<b>Total Current Liabilities</b>	<b>\$ 117,608</b>
Breeding Livestock	\$ 119,240	Noncurrent Portion, Notes Payable	\$ 26,503
Machinery & Equipment	\$ 291,200	Noncurrent Portion, Real Estate Debt	\$ 200,747
Investments in Cooperatives	\$ 11,105	Deferred Tax on Non-Current Assets	\$ 110,291
Real Estate	\$ 992,000	Other Noncurrent Liabilities	\$ -
Buildings & Improvements	\$ 83,130		
Other Assets	\$ -		
<b>Total Noncurrent Assets</b>	<b>\$ 1,496,675</b>	<b>Total Noncurrent Liabilities</b>	<b>\$ 337,541</b>
		Total Business Liabilities	\$ 455,149
		Farm Business Equity	\$ 1,169,118
<b>Total Business Assets</b>	<b>\$ 1,624,268</b>	<b>Total Business Liabilities &amp; Owner Equity</b>	<b>\$ 1,624,268</b>

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## Assets

Assets are the items that help you operate the business and produce the farm's income. They consist of cash (your checking account), inventories, noncurrent assets (land, equipment, etc.) and more. As you can see in Figure 1.3, assets are reported on the left side of the balance sheet and are classified as current and noncurrent assets.

### *Current Assets*

Current assets have a life of less than one year and are liquid, meaning they can be converted to cash relatively easily. The most typical current assets are the farm checking and savings accounts, inventories (for market-based balance sheets), and prepaid expenses.

### *Noncurrent Assets*

Noncurrent assets are considered fixed assets which are assets with useful lives extending beyond one year. These assets are also not considered easily convertible to cash. Noncurrent assets are the tangible capital assets that farmers use to produce their end product or commodity. They include machine sheds, barns, tractors, fencing, tiling, cattle, land, and other assets. The amounts reported for these assets are their original costs reduced by accumulated depreciation (the sum of the depreciation deductions taken each year since an asset was acquired). (Refer to Chapter 4 of this guide for more information covering depreciation.)

### *Valuing Assets on the Balance Sheet*

The value used in a book value balance sheet is the cost of the asset or, in the case of depreciable assets such as machinery and equipment, purchased breeding livestock, buildings, etc., the value is the asset's cost less accumulated economic depreciation. Economic depreciation is the decline in an asset's value due to its use. For example, a tractor purchased for \$100,000 might be expected to decline in value by 10 percent annually using the prior year's ending value. Thus after 3 years of ownership, the tractor would be valued at \$72,900 on the balance sheet. In addition, inventories of crops, livestock, feed, other supplies, cash invested in growing crops, and prepaid expenses are not included in the book value balance sheet.

A market value balance sheet requires the use of current market values for both the current and noncurrent assets. Current market prices are needed for all the assets. It will be necessary to get reasonable values for market livestock, stored grain, feed and supplies on hand, machinery, equipment, buildings, land, etc. The market value balance sheet provides a better representation of the value of the business after adjusting for liabilities, which are discussed next.

## Liabilities and Owners' Equity

Liabilities and the owners' equity are reported on the right side of the balance sheet, and their total must equal the assets reported on the left side of the balance sheet. The most basic thought process in reporting transactions on the balance sheet is this: If the asset side is increased (for example, by purchasing



a tractor), then the liabilities/owners' equity side must also increase (for example, by taking out a loan for the tractor). Note that if the tractor is not financed, there is no increase in total assets. Instead, there is a reduction of one class of assets such as cash and a corresponding increase in noncurrent assets.

The liabilities portion of the balance sheet is sorted into current liabilities and noncurrent liabilities. The noncurrent liabilities section is similar to noncurrent assets, defined as liabilities with due dates extending beyond one year. This could be the outstanding principal balance of land or equipment notes.

Current liabilities are those that are due within one year. They include accounts payable (amounts due to suppliers, vendors, or agencies, such as the feed mill or repair shop) and the portion of long-term debt that is due in the current year (such as the principal and interest payment due on an operating note). Also included in the current liabilities is the amount of current income taxes and self-employment taxes payable. The amount to be reported here is based upon the net farm income from the current year's operations that will be paid to the United States Treasury in the coming year. In addition, the market value balance sheet will show a deferred tax liability amount. The deferred tax amount is based on the taxable amount derived from the liquidation of all the current assets in the case of a deemed sale or structured liquidation of the business. The deferred tax liability will not appear in the book value balance sheet.

Noncurrent liabilities include the outstanding principal balances for loans secured by noncurrent assets, such as land, breeding livestock, machinery, equipment, buildings, etc. In addition, the market value balance sheet will have an amount for deferred taxes in the noncurrent liabilities section. This value reflects the tax liability associated with a deemed sale or structured liquidation of the business.

In the event of a structured liquidation of the business, there are a variety of taxable events that occur. The tax liability associated with the sale of land and raised breeding livestock will use the actual sale values (which should be relatively close to the values shown on the market value balance sheet) less the cost as shown on the book value balance sheet. The sale of machinery and equipment, buildings and improvements, purchased breeding livestock, etc. will use the actual sale values (which should be relatively close to the values shown on the market value balance sheet) less the adjusted tax basis shown on the tax depreciation schedules. The amount shown on the book value balance sheet is the cost of the asset adjusted for economic depreciation and not tax depreciation. Again, the deferred tax liability will not appear in the book value balance sheet.

Another way to understand the liabilities section is to think about what liabilities truly are: the debts incurred to support or fund your assets to carry on the farming operations.

Owners' equity is just one name for the equity section of the balance sheet. It is also called net worth, shareholders' equity, or net assets, depending on the structure of your business and purpose for which you are creating the balance sheet. Owners' equity is calculated by subtracting total liabilities from total assets (assets minus liabilities equal owners' equity). It consists of the initial amount of money and property invested into the business plus the annual net profits (net earnings) of the business. If at the end of the business's accounting year, you decide to retain the profits within the business, they are transferred from the income statement (described next) onto the balance sheet into the owners' equity account as retained earnings. These funds can be held for future expansion, investment, debt servicing, or other uses.

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## Income Statement Shows Consumption

In a business setting, *consumption* is an expense incurred during the fiscal year for goods and services used to satisfy the needs of the business. To consume, you must have sales or income. One way to think about the income statement versus the balance is to think of a building and the daily operations happening inside. The building is emblematic of the balance sheet: It is the stable asset that allows the operations to continue. The daily operations happening inside the building (repairing equipment, for example) are the continual consumption phase.

The income statement has several different names that vary according to the structure of the entity and the resulting activity. It is also known as the profit and loss statement, statement of income, statement of operations, or statement of earnings. Figure 1.4 is an example of an income statement for a sole proprietorship.

*Figure 1.4 Income Statement*

**Income Statement as a Proforma Form 1040, Schedule F (Cash Basis)  
for the period January 1, 20XX through December 31, 20XX**

<b>Revenues</b>		
Crop Sales		\$ 203,807
Market Livestock Sales		\$ 47,251
Raised Breeding Livestock Sales	\$ 8,400	
Purchased Breeding Livestock Sales	\$ 3,166	
Less Net Book Value of Purchased Breeding Livestock Sales	\$ (4,016)	
<b>Total Breeding Livestock Revenue</b>		<b>\$ 7,550</b>
Crop Insurance Proceeds	\$ -	
Ag Program Payments	\$ 18,534	
Patronage Dividends	\$ 1,320	
Other Operating Revenue	\$ -	
<b>Total Other Operating Revenues</b>		<b>\$ 19,854</b>
<b>Gross Revenues</b>		<b>\$ 278,463</b>
<b>Expenses</b>		
Operating Expenses		\$ 186,532
Feed Purchases		\$ 12,633
Feeder Livestock Purchases		\$ -
Depreciation Expense		\$ 26,882
<b>Total Operating Expenses</b>		<b>\$ 226,046</b>
<b>Net Income from Operations</b>		<b>\$ 52,416</b>
<b>Other Revenue (Expenses)</b>		
Interest Income	\$ -	
Interest Expense:		
Interest on Current Loans	\$ (752)	
Interest on Noncurrent Loans	\$ (14,335)	
Amortization of Loan Fees	\$ -	
<b>Net Interest Income (Expense)</b>		<b>\$ (15,087)</b>
Sales of Farm Assets	\$ -	
Less Net Book Value of Farm Assets Sold	\$ -	
<b>Total Gain (Loss) on Sale of Farm Assets</b>		<b>\$ -</b>
Other Miscellaneous Income (Expense)	\$ -	
<b>Total Other Revenue (Expenses)</b>		<b>\$ (15,087)</b>
<b>Income before Income Tax (Net Farm Income)</b>		<b>\$ 37,330</b>
<b>Income Tax Expense</b>		
Income Taxes		\$ 6,859
Self-Employment Tax		\$ 4,208
<b>Total Income Tax Expense</b>		<b>\$ 11,067</b>
<b>After-Tax Net Income</b>		<b>\$ 26,262</b>

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The income statement is a picture of farm production (revenue/sales/income) over the year, reduced by what the production costs (expenses), to yield the net income.

Most farmers do a good job of tracking their income and expenses because this information can be retrieved from the farm checking account, operating line of credit, and long-term loans. However, they may not be accurately measuring the farm's economic performance or reporting their income or expenses correctly because they aren't using a checks-and-balances system.

A checks-and-balances system reconciles or balances accounts on a monthly basis to be sure each item is captured. Accounting software programs are often the most efficient means to achieve the checks and balances required to assure that the records are kept accurately. Further, preparing this information only for tax purposes does not offer any guidance in the decision-making process for the farm as a whole.

Most farm income statements are organized to match the operation's entity structure for tax purposes, and are created for *book purposes*. Book purposes means that records are based on actual purchase and sales prices. Other types of income statements are created for *management purposes*. Different income statements, based on the fair market value of your operation, are used for *lending purposes*.

The following section describes the entries for the sole proprietorship income statement shown in Figure 1.4. The modifications required for other entity types are also discussed briefly.

## Income

- Include total income received from the sales of both raised livestock and livestock purchased for resale. Also include the total cash receipts from the sales of breeding livestock.
- Do not include proceeds from outstanding loans in cash income (even if you report CCC loans as income for tax purposes).
- Both the cash and noncash portions of cooperative stock received are included in income. When amounts are moved to the balance sheet, the cash portion is included in your farm checking account (a current asset), and the noncash portion is included as a noncurrent/other asset.
- Report gross sales of cattle, milk, and other commodities, and enter the corresponding expenses. Even though the effect on income is the same if amounts are netted, entering both the income and expenses aids in determining the correct financial picture.
- Do not include sales of land, machinery, or other depreciable assets, loans received, or income from nonfarm sources in your gross farm income. Doing so overstates your farm operating income. These items are reported in the "Other income and expenses" section of the income statement.

## Expenses

- Depreciation is a noncash expense that reduces the balance-sheet value of an asset over its life. Several accounting methods can be used to write off an asset's depreciable cost over its useful life. Depreciation frees up cash flow by reducing the company's reported income without a cash expenditure. Depreciation is discussed in Chapter 4 of this guide.
- Insurance costs for the owner's life and disability insurance are not tax deductible in most situations. Therefore, these costs should be paid from the personal checking account, taken as a distribution from the business, or added to the owner's Form W-2 income, depending on the entity structure.
- Do not include the death of purchased livestock as an expense; these costs are captured through the noncurrent assets section of the balance sheet. You must note these deaths, however, to be certain they are captured correctly.
- The owner's federal and state income taxes and self-employment taxes are personal expenses and should not be reported as a farm expense. If the entity structure is a corporation, the employer share of social security and Medicare taxes is reported as an expense.
- Interest paid on all farm loans, land contracts, and farm-related charge cards is an expense on the income statement, but principal payments are not. The principal payments impact the balance sheet by decreasing the liability for the balance of the loan.
- Do not include the purchase of capital assets with a useful life longer than one year (such as machinery replacements) as a farm expense. The cost of these assets is accounted for on the balance sheet under noncurrent assets. It is expensed out via depreciation over the assets' designated useful lives. Land purchases do not depreciate but are included on the balance sheet as noncurrent assets.
- Family living costs (personal expenses, such as college tuition and cable television) are shown as draws from the equity section if a sole proprietor farmer does not maintain separate business and personal checking accounts. However, the farming operation should have a separate account so that business and personal expenses are paid from different accounts.

## Points to Remember

- You are creating your records for analysis. To achieve an accurate end result, you must enter accurate information.
- Schedule F (Form 1040), Profit or Loss From Farming, is not an income statement because it shows only part of your income for the year. For example, a dairy farmer includes only milk, crop, and feeder livestock sales on Schedule F (Form 1040). Sales of cull cows held longer than 24 months and sales of machinery, as well as various other transactions, are shown on different forms and schedules, including Form 4797, Sales of Business Assets, Schedule D (Form 1040), Capital Gains

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and Losses, and Form 6252, Installment Sales.

## Statement of Cash Flows

The balance sheet and income statement provide valuable insights into your business, but one more statement—a statement of cash flows—is necessary to accurately determine if a farm is fiscally fit. The accounting events and transactions reported on the income statement do not necessarily coincide with the actual receipt and disbursement of cash. The income statement measures profitability, not cash flow.

A cash-flow statement is used to predict future cash flow, which helps with budgeting, expansion plans, debt pay-down decisions, and much more. For lenders, the cash flow reflects a farm's financial health and suggests areas to strategize with farmers.

The cash-flow statement is derived from the income statement. Its preparation starts with net income or earnings and then adds and subtracts changes in assets and liabilities from the beginning and ending balance sheets for the accounting period being analyzed. Cash flow leaves little room for manipulation by the owners or operations. Unless it is altered by outright fraud, this statement gives a true picture of cash ins and outs for the farm—either the farm has cash, or it does not.

Figure 1.5 shows a cash-flow statement with a section for each of the three means by which cash enters and exits a business—*core operations*, *investing*, and *financing*. It makes adjustments to net income by adding or subtracting the differences in income, expense, and credit transactions that occur from one accounting period to the next. Not all transactions involve actual cash changing hands; therefore, many items need to be analyzed for the proper treatment.

*Figure 1.5 Cash-Flow Statement***Statement of Cash Flows for the period January 1, 20XX through December 31, 20XX**

<b>Cash from Operating Activities</b>	
Cash Provided by:	
Crop & Livestock Sales	\$ 251,058
Other Operating Income	\$ 19,854
Other Miscellaneous Income	\$ 2,000
Cash Used for:	
Feed Purchases, Feeder Livestock Purchases, and Other Items for Resale	\$ (12,633)
Operating Expenses	\$ (186,532)
Interest Expense	\$ (16,314)
Income Taxes	\$ (5,908)
<b>Net Cash from Operating Activities</b>	
<b>Cash from Investing Activities</b>	
Cash Provided from Sale of:	
Breeding Livestock	\$ 11,566
Machinery & Equipment	\$ -
Real Estate & Buildings	\$ -
All Other Investments	\$ -
Cash Used for Purchase of:	
Breeding Livestock	\$ (2,000)
Machinery & Equipment	\$ -
Real Estate & Buildings	\$ (14,000)
All Other Investments	\$ -
<b>Net Cash from Investing Activities</b>	
<b>Cash from Financing Activities</b>	
Cash Provided by:	
Operating Loans	\$ 38,228
Term Debt Financing	\$ -
Nonfarm Income Contributed to the Farm Business	\$ 11,236
Capital Contributions, Gifts, Inheritances	\$ -
Cash Used for:	
Principal on Term Debt	\$ (40,370)
Repayment of Operating and CCC Loans	\$ (29,900)
Owner Withdrawals	\$ (27,368)
Dividends and Capital Distributions	\$ -
<b>Net Cash from Financing Activities</b>	

**Operations**

The first section of the statement reflects how much cash is generated from the farm's products or services—the *normal operations* of the business, meaning the inflows and outflows of cash based on the day-to-day business dealings. Generally, changes between the beginning and ending balances in accounts receivable, depreciation, inventory, and accounts payable are reflected in cash from operations.

Depreciation is not a cash expense. It is deducted as an expense on the income statement, and it adds to accumulated depreciation on the balance sheet, but because cash didn't change hands, the depreciation taken as an expense in the current accounting period is added back to cash flows. The only time an asset is accounted for in cash flows is when the asset is sold.

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A decrease in accounts receivable implies that cash has been collected from customers who are paying amounts due on invoices. This difference is added to cash because the farm business has received cash. Accounts payable has the opposite effect. A decrease in accounts payable implies that cash has been taken out of the business to pay down bills. Thus, this difference is subtracted from cash.

## Investing

The investing section typically consists of the purchase or sale of assets, such as changes in equipment, buildings, or investments (securities). Cash changes in this section are reductions when assets are purchased. When a farm sells an asset, the cash increases this section.

## Financing

This section shows changes in debt or loans. It measures the flow of cash between the business and its owners and creditors. When principle is paid down on a loan, cash decreases because it is used to pay the liability. When additional funds are borrowed, cash increases.

The cash-flow statement in Figure 1.5 shows that the cash flow for the year 202X was \$65,401. The positive cash flow is from the cash earned from operating the farm, which is a good sign. It means that the core operations of the farm are generating profits, which allows the farm to invest in expansion, future advancements or equipment, or pay down debt. Lenders will also be pleased because there is cash available to service debt.

Although all cash-flow statements do not show a positive cash position, a negative cash flow should not automatically be deemed to be a poor outcome without further analysis. Sometimes a negative cash flow is a result of a farm's decision to expand, which can take a considerable sum of cash and be good for the future of the operations. Analyzing cash flow and changes from one accounting period to the next gives the farmer, lender, and other decision-makers a better idea of how the business is performing and how it is being managed, as well as whether it may be on a successful path.

## Points to Remember

- Cash flow is purely the cash coming in and the cash being spent.
- Cash flow does not include any amounts for *future* incoming or outgoing cash (credit transactions). It is like a checkbook register.
- Cash is not the same as net income. Net income is shown on the income and balance sheet, and includes both cash sales and sales made on credit.
- If all cash flows are accurately recorded, the total sources of cash equal the total uses of cash. If a significant difference exists, the records should be carefully reviewed for errors and omissions.

## Conclusion

Each financial statement is just one piece of the financial puzzle. It is imperative to understand the



interrelation among the reports to analyze the farm's financial position. To benefit even more from these financial statements, you can create a detailed analysis that provides additional information to gauge your performance.

## Appendix

### Measures Used in Analysis

1. **Liquidity:** The ability of the farm to meet financial obligations as they come due.
2. **Solvency:** The ability of the farm to pay all its debts if it were sold tomorrow.
3. **Profitability:** The difference between sales and the expenses incurred to produce those sales (net profit).
4. **Repayment Capacity:** The ability to repay term debt from farm and non-farm income.
5. **Financial Efficiency:** The effectiveness of assets used to generate income; the ability to use assets to their maximum potential.

The Farm Financial Scorecard developed by the Center for Farm Financial Management and University of Vermont Extension (which can be accessed at <https://cffm.umn.edu/wp-content/uploads/2019/02/FarmFinanceScorecard.pdf>) presents 21 financial measures in those five general categories to analyze the financial performance and stability of a farming operation. The desirable ranges and percentages vary significantly by the type of farm, entity structure, seasonal issues, scale of business, and more. Trends across years demonstrated in a farm's operation are most important because they can identify areas that need improvement.

A key question in analyzing your own operation is, "How accurate are the financial statements used to develop the measures?" Unless the financial statements use accurate data, the financial measures may have little validity. After accurately preparing the balance sheet, income statement, and cash-flow statement, it is a good exercise to apply the following standard financial measures to your operation. Each accounting period can then be gauged on the prior period to determine the operation's progress. You will be well on your way to making better and more focused decisions. These financial measures are useful to highlight areas to focus on in your analysis and decision making. Examining production and other information along with the financial measures can lead to robust decisions to maximize the operations potential.

#### *Liquidity*

1. **Current ratio** = total current farm assets divided by total current farm liabilities. The desired range is 2.0 or larger.
2. **Working capital** = total current farm assets minus total current farm liabilities. The desired range is a positive amount that is stable. This ratio is calculated based on dollars and therefore is dependent on the farm's size.
3. **Working capital to gross revenues** = working capital divided by gross farm income. The desired

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range is 30% or larger.

### *Solvency*

4. **Farm debt to asset ratio** = total farm liabilities divided by total farm assets. The desired range is 30% or less.
5. **Farm equity to asset ratio** = total farm equity (net worth) divided by total farm assets. The desired range is 70% or larger.
6. **Farm debt to equity ratio** = total farm liabilities divided by total farm equity (net worth). The desired range is .43 or less.

### *Profitability*

7. **Rate of return on farm assets** = (net farm income from operations plus farm interest expense minus value of operator labor, unpaid family labor, and management) divided by average value of farm assets. The desired range is 8% or larger.
8. **Rate of return on farm equity** = (net farm income from operations minus value of operator labor, unpaid family labor, and management) divided by average farm equity (net worth). The desired range is greater than the rate of return on farm assets in item 6 or 10% or larger.
9. **Operating profit margin** = (net farm income from operations plus farm interest expense minus value of operator and unpaid family labor) divided by gross cash farm income plus/minus inventory change of crops, market livestock, breeding livestock, and other income items minus feeder livestock purchased minus purchased feed. The desired range is 25% or larger.

### *Repayment Capacity*

10. **Term debt and capital lease coverage ratio** = (net farm income from operations plus net non-farm income plus depreciation expense plus interest on term debt and capital leases minus total income tax expense minus family living withdrawals) divided by scheduled principal and interest payments on term debt and capital leases payments. The desired range is 1.75 or larger.
11. **Capital replacement and term debt repayment margin ratio** = (net farm income from operations plus net non-farm income plus depreciation expense plus interest on term debt and capital leases minus total income tax expense minus family living withdrawals divided by (scheduled principal and interest payments on term debt minus payments on capital leases plus unfunded capital replacement purchase allowance). The desired range is 1.50 or larger.

### *Financial Efficiency*

12. **Asset turnover ratio** = value of farm production divided by average farm assets. The desired range is 45% or larger.

13. **Operating expense ratio** = (farm operating expense excluding interest minus depreciation) divided by gross farm income. The desired range is 60% or less.
14. **Depreciation expense ratio** = depreciation expense divided by gross farm income. The desired range is 5% or less.
15. **Interest expense ratio** = farm interest expense divided by gross farm income. The desired range is 5% or less.
16. **Net farm income from operations ratio** = net farm income from operations divided by gross farm income. The desired range is 20% or larger.

The Farm Financial Standards Council (<https://www.ffsc.org>) publishes financial guidelines and management accounting guidelines for agricultural operations. The Financial Guidelines for Agricultural Production provides recommended standards for format and content of financial reports, recommended financial measures common to all sectors of agriculture, and example statements and measures. The Management Accounting Guidelines for Agricultural Production responds to the ever-increasing need for consistent, reliable, and accurate management information systems to support day-to-day production decisions.