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Developing a Farm Financial Model

The farm financial model offers a linear and circular process for informed decision-making. Records feed into reports, and reports help farmers integrate financial sense into farm production decisions.

Explanation:

The farm financial model is a concept for understanding the financial flow of the farm business. Collecting and organizing financial information (records) through an accounting system is the first step. This financial information is transformed into financial statements for analysis and interpretation of the farm's historical and current financial position and performance. Budgeting, feasibility, profitability and risk-ability analyses allow the farmer to make the best decisions possible for the farm business's future.

RECORDS:

The farmer must ***collect and organize*** income and expense receipts in an ***accounting system*** before generating financial statements. Receipt accounting is also referred to as record keeping.

MANAGEMENT REPORTS:

Organizing records provides the farmer with the financial information necessary to complete management reports, which are also known as ***financial statements.*** The Farm Financial Standards Council (FFSC) recommends farmers create four financial statements from which the financial position and performance may be ***analyzed.*** Financial statements should be prepared on a consistent basis. Statements include balance sheet, income statement, statement of cash flows, and statement of owner equity. The income statement, statement of cash flows, and statement of owner equity cover the same time period, and the balance sheet provides values for the beginning and end of that period. The strength of the business at a point in time (position) and how well the farm business has performed over time (performance) are two historical insights ***reported*** as financial statements.

Financial position describes the farm's assets. Assets include the tangibles needed by the farm business to function, such as cash, farm machinery, livestock, and other inventories.

Financial performance describes how money flows through the farm business and how well the business can pay its bills, meet payroll costs, and how much money is reserved for unanticipated farm expenses.

Financial analysis provides an opportunity for the farmer to determine the farm business's profitability and financial efficiency. Using information generated from the reports (financial statements), the farmer can benchmark the business against other farms in the industry, determine strengths and weaknesses, measure financial progress, and set financial goals. Financial analysis also allows for future management and decision-making.

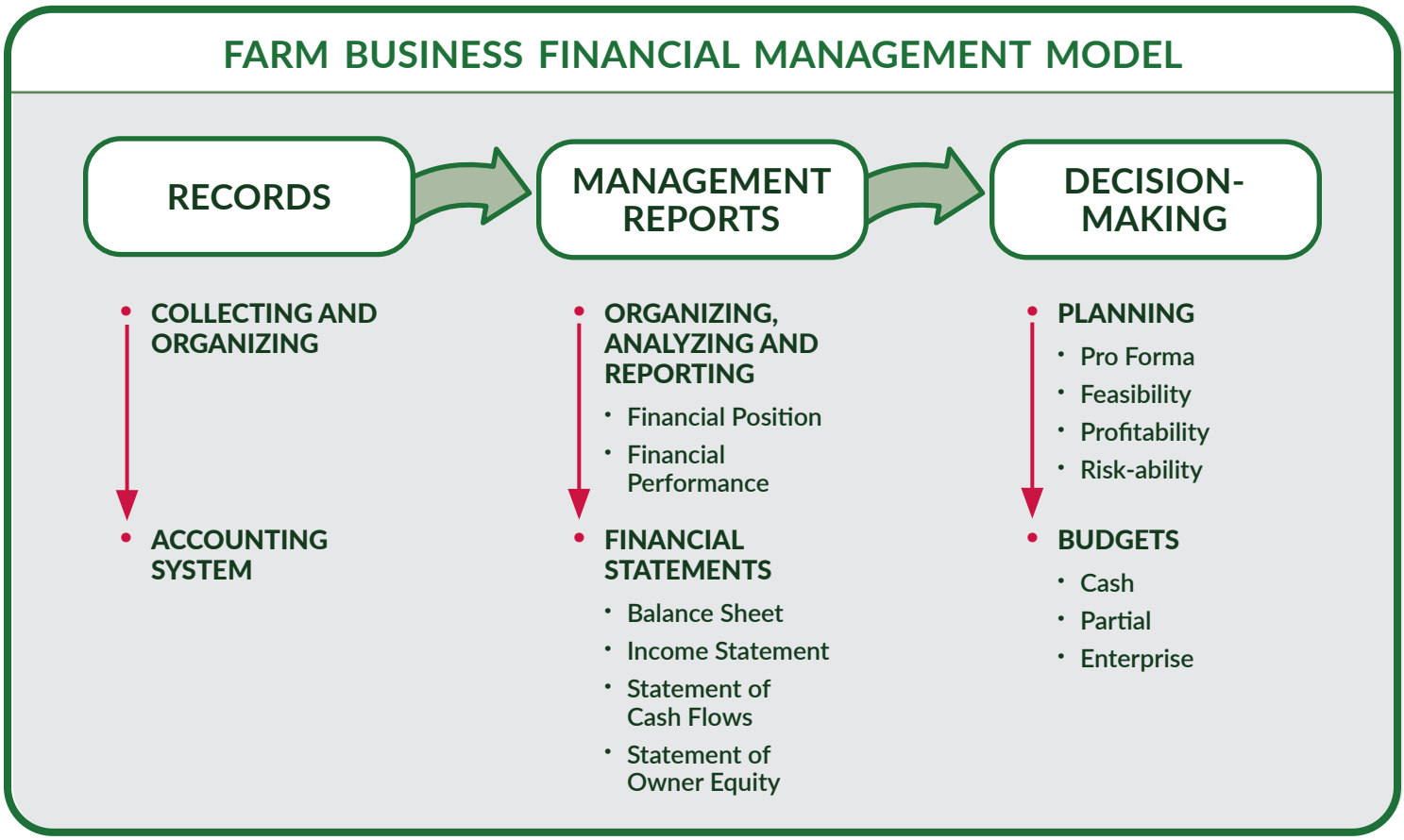
DECISION-MAKING:

Understanding the farm business's history of *financial position* and *financial performance* provides a basis for the farmer to make decisions and plan into the future. *Pro forma* refers to the future view of the farm's financial position and performance. For example, what would the balance sheet look like after a future expansion? The future financial position can be analyzed for *feasibility*, *profitability*, and *risk-ability*. Pro forma financial statements complement the farm's ***budgets.*** *Cash*, *partial*, and *enterprise budgets* are commonly used to assist the farmer in decision-making.

Summary:

The farm financial model helps the farmer make the best decisions for the farm business. From record keeping to financial analysis, this model illustrates how to make sound financial decisions and identifies tools to help in the process.

FARM BUSINESS FINANCIAL MANAGEMENT MODEL



References: Farm Financial Standards Council. (2021, January). *Financial guidelines for agriculture.*

Developing a Farm Financial Model (2021), drafted by Katie Wantoch, UW-Madison, Division of Extension; reviewed by Kevin Bernhardt UW Center for Dairy Profitability/UW-Platteville, and Jenny Vanderlin, UW Center for Dairy Profitability; based on material from Understanding the Farm Financial Model factsheet (2018), by Sandy Stuttgen, UW-Madison Division of Extension.

This material is based upon work supported by USDA/NIFA under Award Number 2018-70027-28586.

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Collecting and Organizing Records

Farming is a complex business which demands accurate records and careful financial management.

Explanation:

Farming is widely viewed as a "way of life" rather than a business. Both financial and production records are required to provide information the farmer needs to make critical risk management decisions. Farmers need to keep records to pursue effective risk management strategies that will enhance the longer-term profitability of their business. Recordkeeping begins with collecting and organizing of the farm business' production (physical) and financial (income/expense) information.

CATEGORIES:

Production (physical)

- Livestock: identification; weights, date of birth, pregnancy rate, calving rate, death loss rate, average weaning weight, average daily gain.
- Crop: yields, inputs (fertilizer, seed), pesticide application, irrigation, planting and harvest dates.
- Labor: paid and unpaid.
- Weather: precipitation, wind, storm events (hail, snow).

Financial

- Income and expense receipts,
- Invoices, checks, bank statements.

METHODS:

Records may need to be provided to government agencies, lenders, insurance companies, safe handling practices, organic production, etc. One of the most important decisions is deciding how to track your production and financial records.

Paper

- "Shoebox" method, pen and paper or notebook, ledger book specific to production and/or financial records.
- This method requires more time with potential errors, but is favorable to farmers not familiar with computers.
- Minor costs associated with this method.

Electronic

- Spreadsheet (Microsoft Excel®, Google Sheets, etc.).
- Software package (AAIMS, CenterPoint, Farm Biz, QuickBooks®, Quicken®, PCMars, Ultra Farm Accounting, etc.).
- The program may complete the calculations, however, the farmer must have a basic knowledge of computers, time to learn the software, design the form, and enter the receipts correctly.
- There may be varying costs associated with an electronic method.

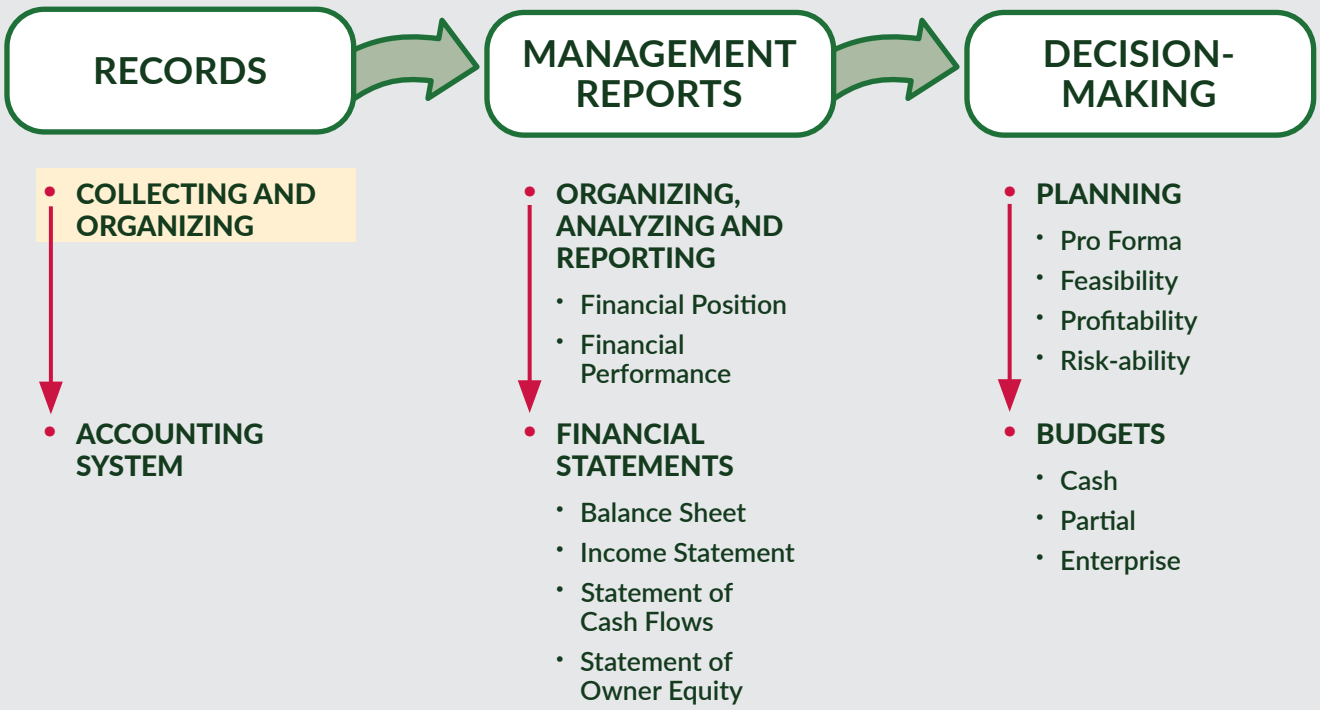
Outsourcing

- Hiring a professional for record keeping.
- Expect higher costs associated with this method.

Summary:

Record keeping is best kept simple! There is no "best" record keeping system for all situations. If the record keeping method is too complicated, the farmer may be more likely to make mistakes or avoid record keeping all together. Records should provide essential information on a timely basis. Both financial and production records need to be collected and organized to generate management reports for farm business decision-making.

FARM BUSINESS FINANCIAL MANAGEMENT MODEL



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Accounting System

An accounting system is a set of actions and methods designed to collect, store, and process financial transactions into management reports for decision-making.

Explanation:

Traditional practices of financial record keeping have largely been informal, simple, and vary from the generally accepted accounting principles (GAAP), which have long been used in other businesses. A primary reason for collecting and organizing records was for satisfaction of Internal Revenue Service (IRS) tax reporting requirements.

METHODS:

Most farmers utilize cash basis accounting to report income (revenues) and expenses (costs) when cash is exchanged. *Cash accounting* method is an acceptable method for reporting taxable farm income. However, additional information may be needed for informed management reports and decision-making.

Accrual accounting recognizes income and expenses when they occur, not necessarily in the year received or paid. Income and expenses are more appropriately matched in a production year and provide a more accurate evaluation of profit (loss). Income tax records for production businesses are required by the IRS to be based on accrual accounting.

JOURNAL ENTRY:

Business transactions are recorded in a journal and may be listed for specific accounts or grouped and summarized by accounts.

A *single-entry* accounting system is characterized by only one entry made for each transaction, much like a check register. For most farm businesses a single-entry system will suffice. However, a single-entry system does not tract accounts like inventory, accounts payable/receivable, nor create a balance sheet or income statement. It also does not coincide with GAAP.

A *double-entry* accounting system provides the most detailed accounting of farm business transactions, but requires a significant amount of time to learn and implement. For every transaction going out, there must be a corresponding transaction coming in (debit/credit). This double entry method provides a cross check and ensures that errors are minimized. It is the best option and is the accepted accounting system in use for most businesses today.

Summary:

Farm business records are important for tax planning but are also utilized to generate management reports that will enhance the long-term profitability of the farm business. Financial management does not mean the producer has to use an accrual accounting system, but it does mean accrual adjustments must be made in order to achieve financial statements (required on an accrual basis) for financial management (i.e. determining financial performance). Overall management includes both financial management (accrual basis) and tax management (cash basis). Both management approaches need to be understood and reconciled.

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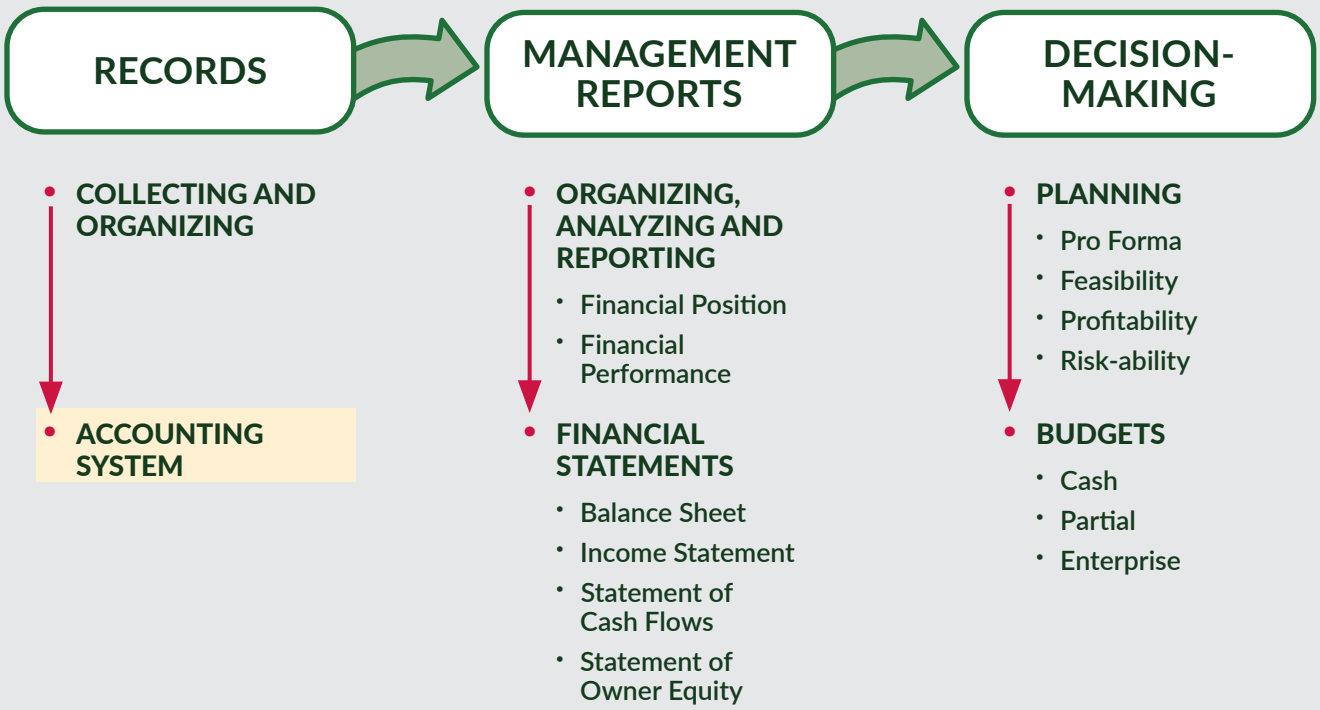

Accounting Systems (2021), drafted by Jenny Vanderlin, UW Center for Dairy Profitability and Katie Wantoch, UW-Madison, Division of Extension; reviewed by Kevin Bernhardt, UW Center for Dairy Profitability/UW-Platteville.

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Preparing the Balance Sheet

The balance sheet is a report of the farm business' financial position at a point in time. It lists assets, liabilities, and net worth (owner's equity) and represents a snapshot of the farm business as of a certain date.

Explanation:

The balance sheet is referred as such since it adheres to the accounting formula:

Assets = Liabilities + Net Worth (Owner's Equity)

Where:

Assets: Items owned by the farm business that have value.

Liabilities: Financial obligations (debts) of the farm business that are owed to others.

Net Worth (Owner's Equity): The value of the farm business owned and free of debt.

The balance sheet is also known as a net worth statement or statement of financial position because of the importance of net worth with respect to representing the farm business' financial position.

Assets are classified on the balance sheet as to their useful life in the farm business: current (used or sold within 1 year or within the normal operating cycle if longer than 1 year) and non-current (held for more than 1 year). Liabilities are classified similar to assets: current (due within 1 year) and non-current (due beyond 1 year).

In agriculture, non-current assets and liabilities may be further divided into intermediate (more than 1 year and less than 10 years) and long-term (more than 10 years). This purpose is to compare intermediate or long-term liabilities to intermediate or long-term assets to determine whether or not the debt is structured consistently with asset life and to evaluate the overall balance sheet structure.

The Farm Financial Standards Council (FFSC) provides the specific standards and structure for the balance sheet. This paper provides a concise and practical presentation of the balance sheet, while in compliance with the FFSC guidance.

STRUCTURE:

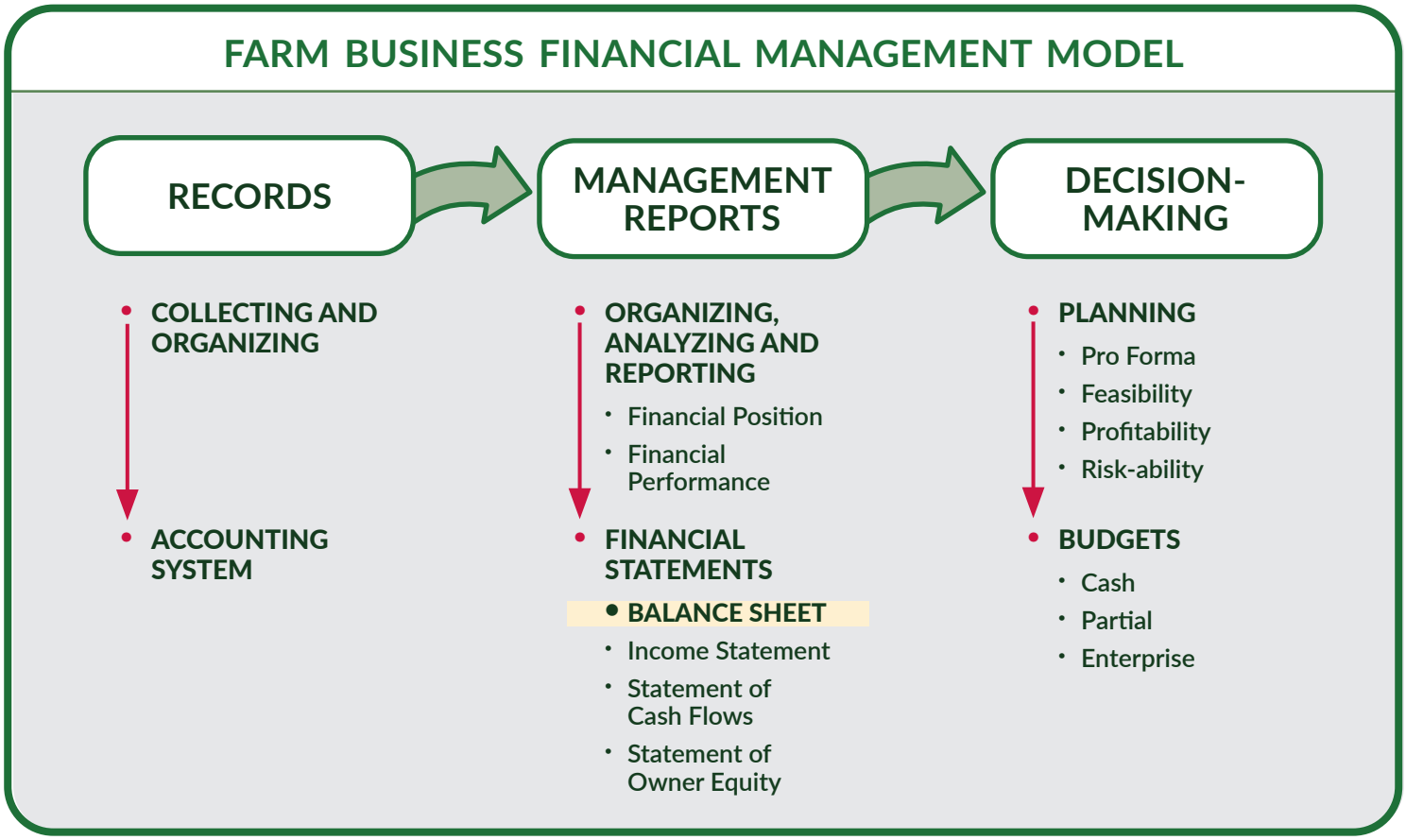
The balance sheet is structured into two columns: assets on the left side and liabilities on the right side. The net worth will appear in the bottom right side. The value of the assets will balance or equal the sum of the liabilities and net worth (owner's equity).

Balance Sheet	**Date as of xx/xx/xxxx**
Assets	*Liabilities*
Current Assets: cash, prepaid expenses, supplies, market livestock, grain, feed, and livestock inventory.	*Current Liabilities:* accrued interest, accounts payable (bills), credit card balances, short-term operating, principal due within 1 year on non-current loans.
Non-Current Assets: breeding livestock, machinery and equipment, vehicles, buildings and improvements, land. Also include investments in finance leases, cooperatives, and other entities.	*Non-Current Liabilities:* notes payable such as livestock, equipment, facility, real estate (building or land) loans.
	Net Worth (Owner's Equity)

Summary:

The first financial management report often created for the farm business is the balance sheet. The balance sheet is one of the most commonly used financial reports and displays what the farm business owns and what is owed. The difference represents the owner's claim to assets or equity in the farm business. A well-prepared balance sheet can describe the farm business' financial position, measured by solvency and liquidity ratios and measurements. To understand the farm's financial performance, the balance sheet and the income statement must be evaluated together to calculate profitability ratios and measurements.

References: Farm Financial Standards Council. (2021, January). *Financial guidelines for agriculture.*



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Preparing the Income Statement

The Income Statement is a report of the farm business' financial performance during a given time frame. It measures profit or loss in a given time period and is also known as the profit or loss statement.

Explanation:

Every farm business produces a product. Product sales generate a return to the expenses incurred when making the product. The income statement is used to measure the cash income (revenues), cash expenses, and the financial value of non-cash income and expenses used during one production cycle, usually a calendar year for farmers. Accrual adjustments to both cash income (revenues) and expenses are made; depreciation and changes in capital assets (gain or loss) are also accounted for. The result is a statement of the financial value of the farm's production for the year, and the cost of that production. The income statement is also known as the *profit and loss statement* or *statement of earnings*.

Most of the information needed to prepare an income statement can be found in the farm business' records. Internal Revenue Service (IRS) form 1040F (Profit or Loss from Farming), also known as Schedule F, and IRS form 4797 (Sale of Business Property) may be used when creating the cash income statement. The tax return, although useful for verification purposes, is not a substitute for the income statement. The current beginning and ending year balance sheets (net worth statements) are also needed for determining accrual adjustments. The accrual adjustments are made from the asset and liability items listed on the balance sheet, and the change in capital assets listed on Form 4797.

The Farm Financial Standards Council (FFSC) provides the specific standards and structure for the income statement. This paper provides a concise presentation of the income statement that follows the FFSC guidance.

STRUCTURE:

The income statement is structured into two parts: revenues (income) and expenses (costs); and includes three presentations of profits – Income from Operations, Net Farm Income and Net Income. Each of these parts include cash transactions and non-cash (accrual) adjustments.

Revenues (income):

- *sum of all cash farm income (Schedule F and Form 4797)*
- *+/- accrual adjustments for realized income from inventories raised/ harvested for sale or to be used in the production process*

= Gross Farm Revenues (Total Farm Income)

Operating expenses (costs):

- *sum all cash farm expense (Schedule F), excluding interest expenses*
- *+/- accrual adjustments from inventories purchased for resale or used in the production process*
- *+ accrual adjustments from accounts payable*
- *+ economic or real depreciation (not tax depreciation as reported on Schedule F)*

= Total Farm Operating Expenses

Income from Operations = Gross farm revenues – Total farm operating expenses

- *– Interest adjustments = interest expense +/- accrual adjustments from accrued interest*
- *+/- capital gains (losses)*
- *+/- Other farm income/expenses*

= Net Farm Income

- *– Taxes = cash taxes paid and +/- accrual adjustments for taxes payable or refunds*

= Net Income

Summary:

Net farm income (NFI) is a standard measure of profitability for the farm business. Generating a profit provides an opportunity for the farm business to expand, replace capital, reduce debt obligations, build working capital, and cover unpaid family living expenses. NFI should be increasing and providing an economic return for the owner's equity, labor, and management in the farm business. Comparing and benchmarking NFI to previous years and to other similar farms gives insight to the farm business' performance.

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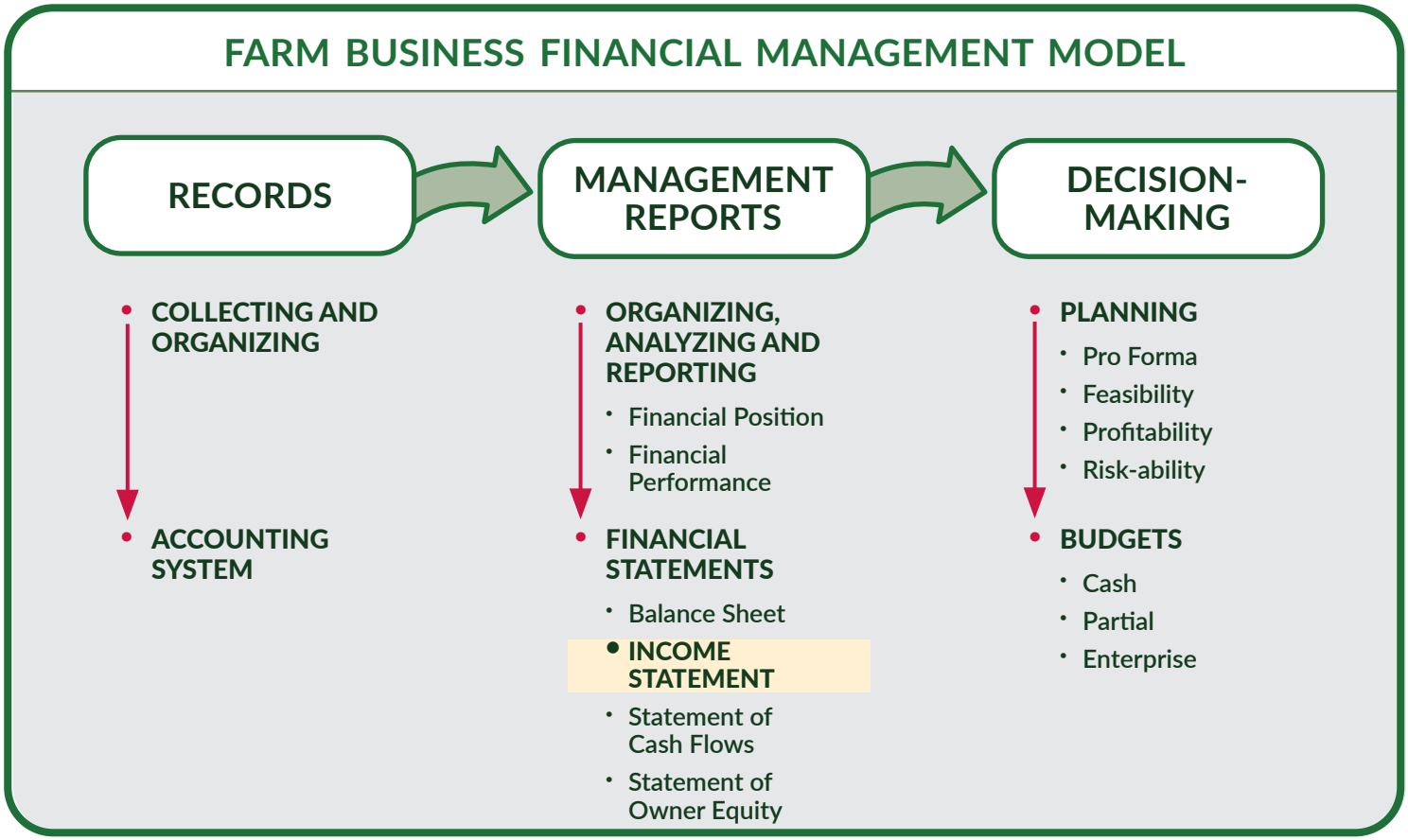

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Understanding the Statement of Cash Flows

The statement of cash flows tracks the sources and uses of cash in the farm business in the past year. It also adds insight to the understanding of financial position and performance of the farm business.

Explanation:

The statement of cash flows focuses on the "cash" activity of the farm business. The balance sheet is often associated with financial position, and the income statement with profitability of the farm business. The statement of cash flows is a value-added statement, giving additional insight to financial position and performance with respect to the cash activity coming into or exiting the farm business.

The statement of cash flows is a historical document summarizing cash activity over a certain time period (month, quarter, year). This statement is sometimes confused with the cash flow budget, which is a projection of future cash flows. The more general term, "cash flow statement," is commonly used, and may refer to either the cash flow budget (planning future cash flows) or statement of cash flows (summarizing historical cash flows). The statement of cash flows and cash flow budget are different financial tools with different purposes and structures.

The statement of cash flows summarizes the cash activities into three areas of – operating, investing, and financing activities. These three activities might be thought of as three businesses, independent of each other, within the overall farm business. Ideally, the sum of their individual net cash balances should equal the change in the cash position between the beginning and ending balance sheet. If this doesn't occur, it triggers an investigation into "why?"

The Farm Financial Standards Council (FFSC) provides the specific (and more rigorous) standards and structure for the statement of cash flows. This paper provides a concise and practical presentation of the statement of cash flows, while in compliance with the FFSC guidance.

STRUCTURE:

The structure of the statement of cash flows is guided by the formula:

Cash (Jan. 1) + Cash Inflows - Cash Outflows = Cash (Dec. 31)

Where:

Cash (Jan. 1 & Dec. 31) = checkbook balance, savings, etc.

Cash Inflows = production sales, capital sales, borrowed funds, contributed capital, etc.

Cash Outflows = operating expense, capital purchases, debt service, non-farm draws, etc.

Cash from Operating Activities -

Operating activities include cash inflows and outflows associated with operating the farm business . Much of a farm business' activities during the year are considered operating activities. Family living expenses, income and social security tax payments are part of this category.

Cash from Investing Activities -

Investing activities include cash inflows from the sale of assets and cash outflows for the purchase of assets. How much cash did the farm business generate from the sale of breeding livestock, machinery, or land; and in turn, how much cash was used to purchase these assets? Often, the cash outflow exceeds the cash inflow, and as such, this imbalance is reconciled within the financing activities as additional debt (discussed below).

Cash from Financing Activities -

Financing activities is the cash to and from external sources such as lenders, investors and shareholders. How is the business being funded? Incurring additional debt obligations or the repayment of an existing loan's principal balance, are some of the activities that would be included in this section of the statement of cash flows.

The statement of cash flows may or may not be limited to the farm business. Cash may flow into the farm business as contributed capital, or flow out as withdrawals from the farm business. To the extent this occurs, it is noted within the financing activities.

CHANGE IN CASH BALANCES:

The statement of cash flows shows the ending cash and cash related balances from the year-ending balance sheet (Dec 31). The 'change in cash' between the beginning (Jan 1) and ending balance sheets (Dec 31) should reconcile with the change in cash balances from operating, investing, and financing activities in the statement of cash flows.

Summary:

The statement of cash flows is a 'cash' concept, not 'accrual.' It shows the cash inflows and outflows during a time period, regardless of when the earnings or expenses occurred. Therefore, the net cash position will not reflect profitability for the time period.

A more thorough and rigorous statement of cash flows does afford the reconciliation of net income to net cash from operating activities. This is presented in the FFSC guidelines.

The statement of cash flows does help the farm business understand the 'use' of cash. The statement of cash flows is also useful in comparisons with peers or past performance (i.e., previous years v. past year; debt payments planned v. actual payments).

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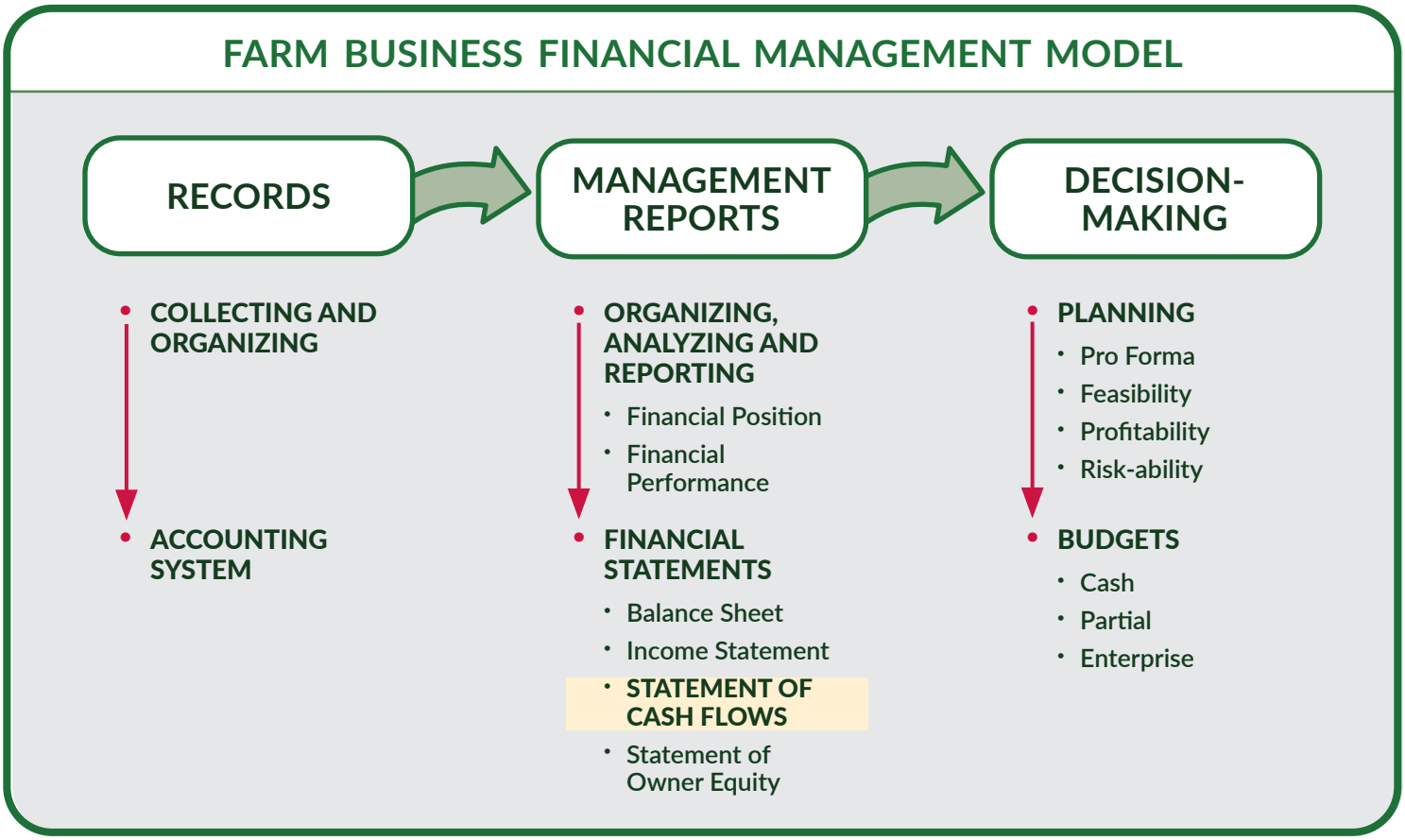

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Understanding the Statement of Owner Equity

The statement of owner equity reconciles the change in equity from the beginning balance sheet to the ending balance sheet for the farm business. Also known as the statement of net worth, shows the source of change.

Explanation:

Owner equity, or net worth, is the owner's share of the assets of the business and is a basic measure of the financial strength. The terms "owner equity" and "net worth" mean the same thing and are interchangeable. The Farm Financial Standards Council (FFSC) guidance is to use "owner equity" when referring to the farm business only, and to use "net worth" when combining business and personal information in the statement.

Analysis of the statement of owner equity provides understanding of whether change in total equity was due to profitability (i.e., net profit or loss), capital gains or losses from the sale of assets, contributed capital, or a revaluation of assets. Reconciling also determines if any errors may have occurred in completing the balance sheet.

A common financial goal is the accumulation of equity. Changes in equity come from three overall areas – retained earnings, contributed capital and valuation equity. Positive equity changes from any source are good for the owners but increases in equity coming from retained earnings means the operation itself is creating profits and equity.

Retained Earnings:

The primary motivation for the statement of owner equity is to identify the amount and source of changes in equity. Retained earnings shows the accumulation over time of profits (net income from the income statement). It is earnings that have not left the business and provides a measure of the farm business' ability to generate profits.

Contributed Capital:

Contributed capital is equity that has been provided to the business from sources other than the business itself. It may be contributed by owners from a source other than the farm, from parents or other investors. Contributed capital can be further assessed to determine the source of the contribution.

Valuation Equity:

Valuation equity is the market value of capital assets compared to the assets cost or book value. For example, an increase in real estate values compared to the original cost is additional equity for the owners. However, it was not equity that came from operations (retained earnings) or contributed to the business (contributed capital), rather it is additional owner equity from the increasing value of owned assets. Valuation equity may also be attributed as management strength to have invested in appreciating assets, along with their profitability potential.

Summary:

The statement of owner equity may or may not be limited to the farm business. Total equity for a combined balance sheet (farm business and personal) would have an additional category recognizing non-farm equity. Equity outside the farm business is different from contributed capital to the farm business. Non-farm equity sources may be specifically identified and provide more insight about personal contributions.

It is important to first identify and understand the changes in total equity, before making conclusions about financial position. The statement of owner equity is designed to provide insight into the financial position of the farm business.

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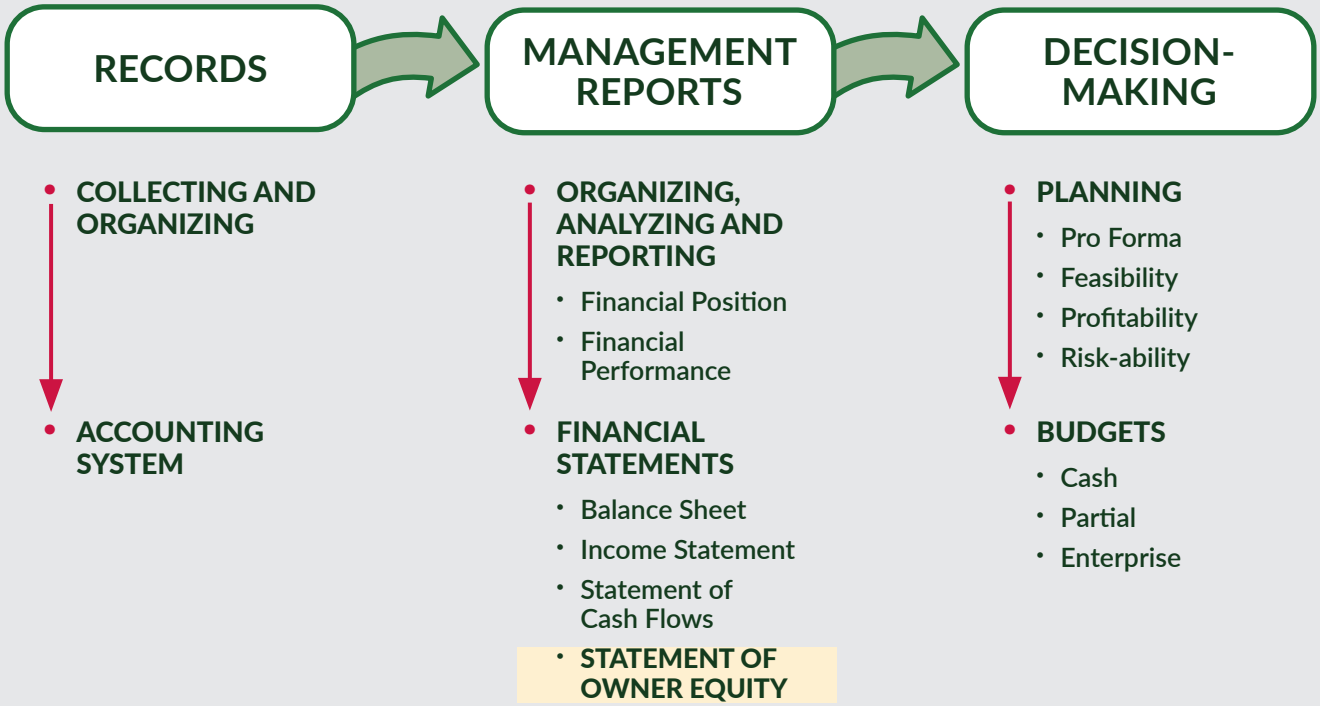

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