Farm Financial Risk Management Series Part I:

Overview of Financial Systems for New and Beginning Farmers

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There are many factors to consider before starting a new farm enterprise. Financial management is an important component in the startup and decision-making processes for beginning farmers. The purpose of this series of publications is to inform Virginia agribusiness owners and managers about farm financial risk management tools, techniques, and resources available to help them prepare and use a financial systems approach for their operations.

Topics covered in this paper are expected to improve manager decision-making by providing a better understanding of the value of constructing financial statements and planning budgets to help them manage risks associated with the financial aspects specific to the agriculture industry. The topics covered in this resource are not all-inclusive, but after reading this publication, beginning farmers should be prepared to move forward in planning for their farms.

The accompanying parts in the series include "Farm Financial Risk Management Series Part II: Introduction to Farm Financial Statements" (Virginia Cooperative Extension publication AAEC-115P (AAEC-297P)), and "Farm Financial Risk Management Series Part III: Introduction to Farm Planning Budgets" (VCE publication AAEC-116P (AAEC-298P)). A compilation of excellent resources that includes examples, how-to videos, and training resources is included in the appendix at the end of this publication.

For questions about this or other farm startup topics, contact the local Virginia Cooperative Extension office or visit the Virginia Beginning Farmer and Rancher Coalition Program website at www.vabeginningfarmer.org.

What Is Risk?

Risk is often considered the possibility of adversity or loss facing individual farm businesses (O'Brien, Hamilton, and Leudeman 2005). The authors adopted the Harwood et al. (1999, 2) viewpoint that risk should be viewed as "uncertainty that matters," which is meant to highlight the need for farm managers to develop an understanding of the uncertainties facing the business and a set of choices and priorities that may be implemented to make informed decisions.

Risk management involves choosing among alternatives to reduce the effects of risk on overall farm performance and to maximize profitability over the lifetime of the business. Likewise, risk management requires the ongoing evaluation of trade-offs between changes in risk and expected returns for each enterprise within the farm business. Understanding risk is a starting point to help producers make good management choices in situations where adversity and loss are often inevitable.

A farm manager's efforts to manage risk will result in reduced income variability over time, which will enhance the long-term viability of the business. These benefits include payment of debt obligations and replacement of capital assets on a timely basis and an adequate level of income for family living expenses. In addition, the implementation of risk management programs may help fine-tune future growth projections.

What are farm financial risks?

Financial risk occurs when a farm business borrows money and creates obligation to repay debt, and are impacted by factors both internal and external to the farm (Kay and Edwards 1994). Credit worthiness of the farm will affect the cost of capital and the amount and availability of borrowed funds. Cash flows generated by the farm will affect the timing of needed funds as managers balance incoming and outgoing dollars. The management and control of farm assets, including any rental or leasing arrangements, will affect farm financing and profitability. Macroeconomic factors outside of the farm operation, such as Farm Bill policies, global supply and demand trends, trade conditions between nations, and any partnership agreements, all require careful consideration when managing farm financial systems. The purpose of this overview is to outline farm financial system goals and to provide farm owners and managers with financial risk management tools. A checklist of each financial statement and planning budget is provided in the appendix; it indicates specific record requirements and relevant resources to assist farm managers in development of an individual farm financial system.

How can a farm financial system help managers address financial risks?

Financial statements are needed to accurately determine the financial status of the farm operation that can be communicated to farm owners, partners, and lenders. Using the information included in the financial records of the farm, managers are able to identify possible weaknesses or threats and take corrective action. Lenders require this information to complete loan applications and to determine the ability of the farm to carry and repay debt commitments in the short and long term. In developing a farm financial system, managers need to focus on the following specific goals for their individual business:

Goal 1: Define assets and liabilities.

Goal 2: Define revenue, expenses and cash flow.

Goal 3: Compare and contrast how assets are valued.

Goal 4: Compare and contrast a balance sheet and an income statement.

Goal 5: Demonstrate whole farm and enterprise profitability.

Goal 6: Analyze alternatives and inform decisions.

Financial risk management tools allow farm managers to recognize the symptoms of a problem within a reasonable timeframe, gather information to pinpoint the problem, make a diagnosis to identify possible problems, prescribe a remedy to take action to improve the problem area, and follow up and confirm whether the problem has been adequately addressed and solved.

How does a farm financial system add value for managers?

The management time and resources devoted to development and maintenance of a farm financial system provide valuable returns to the farm business. Through careful analysis of historical financial performance, strengths and weaknesses of the business can be identified that will provide necessary information for future budget planning and new enterprise analyses. Financial risk management efforts extend beyond the financial aspects of the business because production, marketing, human resource management, and legal and regulatory risk exposures are closely linked to overall financial performance (Harwood et al. 1999, 4-7).

A solid financial system allows farm entrepreneurs to build on management strengths and achieve improvements in areas of weakness or vulnerability. Managers with a financial system in place are better able to identify all possible corrective actions when unexpected market or weather conditions threaten farm operations. Finally, managers who employ a risk management strategy that includes an accurate, timely, and complete farm financial system are better prepared to communicate successfully with lenders and to identify any potential limiting factors in obtaining credit.

Components of a Farm Financial System

A complete farm financial system comprises four financial statements and four planning budgets. The four financial statements — balance sheet (or net worth statement), cash flow statements, income statements, and the owner's equity statement — are used to assess historical farm financial metrics and performance. Farm planning budgets are useful for analyzing new enterprises or changes to existing enterprises within the farm business. The four farm planning budgets are enterprise, partial, cash flow, and whole farm budgets.

Which financial record-keeping method should be used?

There are two financial record-keeping methods that may be used by farm managers to document sales and expenses: cash accounting and accrual accounting. The cash accounting system requires managers to record income or expense at the time when cash is paid or received: a sale is recorded when cash is received from the sale of an item, and an expense is recorded when cash is actually paid for the purchase of an item. Cash accounting requires making many adjustments to the financial statements to accurately reflect profits or losses.

The accrual accounting system requires managers to record income or expense at the time the transaction occurs. It recognizes income at the time it is earned, and it recognizes an expense at the time it is incurred — regardless of when money for the sale is received or money for the expense is paid. The rules behind an accrual accounting system represent an attempt to match revenues with the expenses incurred in earning those revenues so that profits are accurately measured.

To illustrate the differences between the two accounting methods, consider the following examples of a sales transaction and a purchase transaction.

Example: Sales Transaction

On March 15, the owner of Morgan Farms orders fertilizer from the local cooperative. The cooperative sends an invoice to Morgan Farms and requests payment for the fertilizer within 30 days (by April 15). Morgan Farms pays for the fertilizer on April 5.

Under a cash accounting system, no record-keeping entry is made on March 15 because no cash was exchanged between the cooperative and Morgan Farms. The sale would not be recorded or recognized until the cash is received on April 5; therefore, the cooperative would record it as an April sale.

If the cooperative uses an accrual accounting system, the sale is recorded on March 15 even though no cash was exchanged on this date. The cooperative is considered to have earned the income on March 15 (the invoice date) and will consider this transaction to be a March sale.

Example: Purchase Transaction

Assume that on Sept. 23 the owner of Morgan Farms has the local veterinarian come to the farm to administer vaccinations. The veterinarian's office manager bills Morgan Farms at the end of the month. Morgan Farms pays the invoice on Oct. 18.

Under a cash accounting system, no record-keeping entry is made by Morgan Farms until Oct. 18. This purchase will be reflected as an October expense.

Under an accrual accounting system, the owner of Morgan Farms owner records the veterinarian services (vaccinations) as an expense on Sept. 23, even though the bill is not paid until Oct. 18; therefore, the transaction will be reflected as a September expense.

As demonstrated in the above examples, maintaining a cash accounting system is relatively easier than maintaining an accrual system. While most individuals can easily learn how to keep cash accounting records, accrual systems require trained bookkeeping skills. In most cases, the farm business may select either the cash or accrual accounting method; most farms, small individually operated businesses, and some partnerships and S corporations use the cash accounting method. Cash accounting allows the manager to use tax management strategies that are not available with accrual methods. Nursery operations that specialize in the production of perennial trees are encouraged to choose the cash accounting method because managing the data across several years prior to the sale of the inventory complicates the accrual recording process.

However, it is important to note that the Internal Revenue Service requires businesses whose revenues are generated from the sale of inventory (retail stores, wholesalers, manufacturers, etc.), C corporations, and business with gross receipts over $5 million to use the accrual accounting method. Once the farm elects an accrual system, this method must be applied for the life of the business in accordance with IRS protocols.

How do I determine what my farm resources are worth?

A farm's primary asset is the land on which it is built, and an accurate valuation of the farmland is needed by both farm managers and financial lenders to use as the basis for calculating the repayment capacity of the operation. In the U.S., relatively few acres of farmland are sold each year because the land is typically passed down from generation to generation, and it becomes more valuable over the years. In contrast, additional farm assets, which include buildings, equipment, and fencing, have relatively shorter lifespans and will need to be replaced regularly due to wear and tear and the availability of new technology. For these reasons, when completing farm financial statements, it is important to use two methods to calculate the value of the farm assets: the cost basis and the market value.

The cost basis for depreciable assets such as buildings or equipment is calculated by recording the original cost less any accumulated depreciation over time. The cost basis is often referred to as the "book value" by accountants. For land valuation, the cost basis is represented by the actual purchase price or the value of the land at the time of inheritance.

Market value is calculated by determining the current fair market value, and this is the value used by farmers and lenders.

Calculating and recording the cost basis and market value for each asset in the financial statements will provide a more accurate portrayal of the overall farm net worth. Managers are encouraged to note that should the farm business be sold, the IRS might assess a tax liability based on any difference between the cost basis and fair market values.

Additional Resources and Information

Ag Risk & Farm Management Library - https://agrisk.umn.edu/library.

Center for Farm Financial Management, University of Minnesota - https://www.cffm.umn.edu.

Farm Finance, Safety Net and Risk Management, National Sustainable Agricultural Coalition - http://sustainableagriculture.net/our-work/issues/credit-safety-net-programs.

New Farmers, U.S. Department of Agriculture - https://newfarmers.usda.gov.

Risk management resources, U.S. Department of Agriculture Economic Research Service - www.ers.usda.gov/topics/farm-practices-management/risk-management.aspx

For more information about preparing and analyzing farm financial statements in Virginia, please contact John Bovay at bovay@vt.edu. For more information and resources directly aimed at beginning farmers, visit the Virginia Beginning Farmer and Rancher Coalition Program at www.vabeginningfarmer.org.

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SOUTHERN EXTENSION RISK MANAGEMENT EDUCATION

VIRGINIA Beginning Farmer & Rancher COALITION PROGRAM

USDA United States Department of Agriculture National Institute of Food and Agriculture

References

Harwood, J., R. Heifner, K. Coble, J. Perry, and A. Somwaru. 1999. *Managing Risk in Farming: Concepts, Research, and Analysis*. U.S. Department of Agriculture, Economic Research Service. Agricultural Economic Report No. AER774. Washington, DC: USDA Economic Research Service.

Kay, R. D., and W. M. Edwards. 1994. Farm Management. 3rd ed. New York: McGraw-Hill.

O'Brien, D., N. D. Hamilton, and R. Luedeman. 2005. "Risk Management." In *The Farmer's Legal Guide to Producer Marketing Associations*, 67-82. Des Moines, IA: Drake University Agricultural Law Center. https://nationalaglawcenter.org/wp-content/uploads/assets/articles/obrien_producermarketing_ch6.pdf.

Disclaimer

Appendix

Following is a compilation of sources, examples, documents, and how-to videos to help farm owners and managers organize farm records and complete farm financial statements and planning budgets.

Statement	Records required and resources
Balance sheet (or net worth statement)	☐ Farm assets cost and value ☐ Farm and personal asset changes; livestock, crop, and other product inventories ☐ Loan balances
	• Building Equity in Your Farm - www.extension.iastate.edu/agdm/wholefarm/html/c3-60.html • Interpreting Financial Statements and Measures - http://ifsam.cffm.umn.edu/ • Understanding Net Worth - www.extension.iastate.edu/agdm/wholefarm/html/c3-19.html • Your Net Worth Statement - www.extension.iastate.edu/agdm/wholefarm/html/c3-20.html • Financial Performance Analysis Tools - https://www.agmrc.org/business-development/business-workbench/financial-performance-analysis-tools • Net Worth Tools - https://www.agmrc.org/business-development/business-workbench/net-worth-tools
Cash flow statements	☐ Farm income and expenses ☐ Nonfarm income and expenses ☐ Debt payments
	• Taking Control of Farm-Family Living Expenses – www.extension.purdue.edu/extmedia/id/id-238.pdf • Understanding Cash Flow Analysis – www.extension.iastate.edu/agdm/wholefarm/html/c3-14.html • Managing Farm Family Finances – www.extension.iastate.edu/agdm/wholefarm/html/c3-51.html • Cash Flow Budgeting Tools – https://www.agmrc.org/business-development/business-workbench/cash-flow-budgeting-tools

Statement	Records required and resources
Income statements	☐ Farm income and expenses ☐ Interest payments ☐ Livestock and grain inventories ☐ Accounts payable and receivable
	• Assessing How You Stand Financially – https://dr.lib.iastate.edu/entities/publication/59e8ab95-e103-4b50-b670-10cd46ebdcd9 • Understanding Profitability – www.extension.iastate.edu/agdm/wholefarm/html/c3-24.html • Business Workbench - https://www.agmrc.org/business-development/business-workbench • Business Development - https://www.agmrc.org/business-development
Enterprise analysis (planning budgets)	☐ Farm income and expenses ☐ Livestock and crop yields
	• Enterprise Budgeting Tools -https://www.agmrc.org/business-development/business-workbench/enterprise-budgeting-tools • Farm Cost and Return Tool – www.fapri.missouri.edu/projects/results.asp • Primer for Selecting New Enterprises for Your Farm - https://agecon.ca.uky.edu/files/ext2000-13.pdf • AgPlan Business Plan App – https://agplan.umn.edu/ • Twelve Steps to Cash Flow Budgeting – www.extension.iastate.edu/agdm/wholefarm/html/c3-15.html • Using Enterprise Budgets to Make Decisions - https://store.extension.iastate.edu/product/Using-Enterprise-Budgets-to-Make-Decisions • Budgeting for Agricultural Decision Making – https://extension.psu.edu/budgeting-for-agricultural-decision-making • Financing Small-Scale and Part-Time Farms – https://extension.psu.edu/financing-small-scale-and-part-time-farms • Budgeting Tools - https://www.agmrc.org/business-development/business-workbench/budgeting-tools/ • VCE Budgets – https://www.dropbox.com/sh/b4v7ftzo6qdri7j/gsnqRAkZ62 • Veggie Compass – www.veggiecompass.com • FINPACK – www.cffm.umn.edu/finpack/ • Business Workbench - https://www.agmrc.org/business-development/business-workbench
Income taxes	☐ Farm income and expenses ☐ Nonfarm income and expenses ☐ Interest payments ☐ Depreciation schedule
	• IRS - Reporting Farm Income and Expenses - https://www.irs.gov/pub/irs-news/fs-07-20.pdf • Understanding Your Federal Farm Income Taxes – extension.psu.edu/business/ag-alternatives/farm-management/understanding-your-federal-farm-income-taxes • Overview of Farm and Ranch Leases – http://nationalaglawcenter.org/wp-content/uploads/2014/03/Ag-Leasing-Outline-Rincker.pdf • Financial Troubleshooting – www.extension.iastate.edu/agdm/wholefarm/html/c3-53.html • Business Development - https://www.agmrc.org/business-development

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