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Farm Financial Risk Management: Overview of Financial Systems for New and Beginning Farmers

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There are many factors to consider before you start a new farm enterprise. Financial management is an important component in the start-up and decision-making process for beginning farmers. The purpose of this resource is to introduce you to the farm financial system and risk management for beginning farmers. The topics covered in this resource are not all-inclusive, but after reading this paper, you should be prepared to move forward in planning for your farm. If you have any questions about this or other farm start-up topics, bring them to your 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 et al., 2005). The authors adopt the Harwood et al. (1999a) viewpoint that risk should be viewed as "uncertainty that matters," which is meant to highlight the need for farm managers to develop an understanding the uncertainties facing the business and develop a set of choices and priorities that can be implemented to make informed decisions. Risk management involves choosing among these alternatives to reduce the effects of risk on overall farm performance and maximize profitability over the lifetime of the business. Likewise, risk management requires the ongoing evaluation of tradeoffs 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 can result in reduced income variability over time that 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 can help fine-tune future growth projections.

What are farm financial risks?

Financial risk occurs when a farm business borrows money & creates obligation to repay debt, and are impacted by factors both internal and external to the farm (Kay, 1994). Credit worthiness of the farm may affect the cost of capital and amount and availability of borrowed funds. Cash flows generated by the farm may 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 may 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, indicating 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 correct 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: To define assets & liabilities;
Goal 2: To define revenue, expenses and cash flow;
Goal 3: To compare and contrast how assets are valued;
Goal 4: To compare & contrast a balance sheet and income statement;
Goal 5: To demonstrate whole farm and enterprise profitability; and
Goal 6: To analyze alternatives and inform decisions.

Financial risk management tools allow farm managers to recognize the symptoms of problem within a reasonable timeframe, to gather information to pinpoint the problem, to make a diagnosis to identify possible problems, to prescribe a remedy to take action to improve the problem area, and to 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 and provide necessary information for future budget planning and new enterprise analyses. Financial risk management efforts extend beyond financial aspects of the business, as production, marketing, human resource management and legal and regulatory risk exposures are closely linked to the overall financial performance (Harwood et al., 1999b). 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 identify any potential limiting factors in obtaining credit.

What are the components of a farm financial system?

A complete farm financial system is comprised of a set of financial statements and planning budgets. The four financial statements are used to assess historical farm financial metrics and performance, and include balance sheet (or net worth statement), cash flow statements, income statements and the owner's equity statement. Farm planning budgets are useful for analysis of 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 can be used by farm managers to document sales and expenses: cash accounting and accrual accounting. For cash accounting systems, sales are 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. The cash accounting system requires managers to record income or expense at the time when cash is paid or received. Cash accounting requires making many adjustments to the financial statements to accurately reflect profits or losses.

The accrual accounting system recognizes revenues and expenses at the time they are earned or incurred, regardless of when the cash for the purchased items are received or the cash paid. The accrual accounting system requires managers to record income or expense at the time the transaction occurs. The rules behind an accrual accounting system represent an attempt to match revenues with the expenses incurred in earning those revenues so that profits may be accurately measured.

To illustrate the differences between the two accounting methods, consider this example of a **sale** transaction: On March 15th, the Morgan Farms owner orders fertilizer from the local cooperative. The cooperative sends out an invoice to Morgan Farms and requests payment for the fertilizer within 30 days (by April 15th). Morgan Farms pays for the fertilizer on April 5th.

Under a cash accounting system, no record-keeping entry is made on March 15th because there was no cash exchanged between the cooperative and Morgan Farms. The sale would not be recorded or recognized until the cash is received on April 5th therefore the cooperative would record it as an April sale. If the cooperative uses an accrual accounting system, the sale is recorded on March 15th even though no cash was exchanged on this date. The cooperative is considered to have earned the income on March 15th (the invoice date) and will consider this transaction as a March sale.

To further illustrate the differences between the two accounting methods, consider this example of a **purchase** transaction: Assume that on September 23rd the Morgan Farms owner 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 October 18th.

Under a cash accounting system, no record-keeping entry is made by Morgan Farms until October 18th. This purchase will be reflected as an October expense. Under an accrual accounting system, the Morgan Farms owner records the veterinarian services (vaccinations) as an expense on September 23rd even though the bill is not paid until October 18th, 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 and most farms, small individually operated businesses, and some partnerships and S corporations use the cash accounting method. Cash accounting allows the manager to utilize 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, as 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 (IRS) requires business 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 as the basis for calculating the repayment capacity of the operation. In the U.S., relatively few acres of farmland are sold each year as the land is typically passed down from generation to generation, and becomes more valuable over the years. In contrast, additional farm assets include buildings, equipment, and fencing, which 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, and is often referred to as the "book value" used by accountants. For land valuation, the cost basis is represented by the actual purchase price or, the value of the land when 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 may assess a tax liability based on any difference between the cost basis and fair market values.

For more information about preparing and analyzing farm financial statements in Virginia, please contact Dr. Kim Morgan at KLMorgan@vt.edu or 540-231-3132. For more information and resources directly aimed at beginning farmers, please visit the Virginia Beginning Farmer and Rancher Coalition Program at www.vabeginningfarmer.org

The Virginia Beginning Farmer and Rancher Coalition Program (VBFRCP) is a state-wide and Coalition-based Extension Program. The program is housed in Virginia Tech's Department of Agricultural, Leadership, and Community Education and a program of Virginia Cooperative Extension. The VBFRCP is sponsored by the Southern Extension Risk Management Education Center and the Beginning Farmer and Rancher Development Program (BFRDP) of the USDA-National Institute of Food and Agriculture (NIFA), Award Number: 2015-70017-22887

SOUTHERN EXTENSION RISK MANAGEMENT EDUCATION

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

References

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O'Brien, D., N.D. Hamilton, and R. Luedeman. (2005). The Farmer's Legal Guide to Producer Marketing Associations – Chapter 6: Risk Management. Drake University Agricultural Law Center. Link: http://nationalaglawcenter.org/wp-content/uploads/assets/articles/obrien_producermarketing_ch6.pdf

R.D. Kay and W.M. Edwards. 1994. Farm Management, 3rd edition. McGraw-Hill, Inc.

Additional resources related to farm financial risk management

Agricultural and Farm Risk Management Library Link: http://www.agrisk.umn.edu/Library/Topics.aspx?LIB=AR

USDA ERS Risk Management Resources. Link: http://www.ers.usda.gov/topics/farm-practices-management/risk-management.aspx

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

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

STATEMENT	RECORDS REQUIRED AND RESOURCES
Balance Sheet (Or Net Worth Statement)	☐ Farm Assets Cost & Value ☐ Farm & Personal Asset Changes Livestock, Crop & 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: 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 • Solvency: www.agmrc.org/business_development/operating_a_business/finance/solvency.cfm • Net Worth Tools: www.agmrc.org/business_development/business_workbench/analysis_worksheets_and_calculators/net_worth_tools.cfm
Cash Flow Statements	☐ Farm Income and Expenses ☐ Non-Farm Income & Expenses ☐ Debt Payments
	• Taking Care 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: www.agmrc.org/business_development/business_workbench/business_worksheets_and_calculators/cash_flow_budgeting_tools.cfm
Income Statements	☐ Farm Income & Expenses ☐ Interest Payments ☐ Livestock & Grain Inventories ☐ Accounts Payable & Receivable
	• Assessing How You Stand Financially: www.extension.iastate.edu/agdm/articles/others/SchFeb12.html • Understanding Profitability: www.extension.iastate.edu/agdm/wholefarm/html/c3-24.html • Your Farm Income Statement: www.extension.iastate.edu/agdm/wholefarm/pdf/c3-25.pdf • Profitability: www.agmrc.org/business_development/operating_a_business/finance/profitability.cfm Income Statement Tools: www.agmrc.org/business_development/business_workbench/analysis_worksheets_and_calculators/income_statement_tools.cfm

STATEMENT	RECORDS REQUIRED AND RESOURCES
Enterprise Analysis (Planning Budgets)	☐ Farm Income and Expenses ☐ Livestock & Crop Yields
	• Enterprise Budgeting Tools: www.agmrc.org/business_development/business_workbench/business_worksheets_and_calculators/enterprise_budgeting_tools.cfm • Farm Cost and Return Tool: www.fapri.missouri.edu/projects/ • Primer for Selecting New Enterprises: www.uky.edu/Ag/AgEcon/pubs/ext_aec/ext2000-13.pdf • New Business Development – Decision Tools: www.extension.iastate.edu/agdm/decisionaidsvd.html • AgPlan Business Planning: 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: www.extension.iastate.edu/agdm/crops/pdf/a1-19.pdf • Budgeting for Ag Decision Making: extension.psu.edu/business/ag-alternatives/farm-management/budgeting-for-agricultural-decision-making • Financing Small-Scale and Part time Farming Enterprises: extension.psu.edu/business/ag-alternatives/farm-management/financing-small-scale-and-part-time-farms • Budgeting: www.agmrc.org/business_development/operating_a_business/budgeting/budgeting.cfm • VCE Budgets: https://www.dropbox.com/sh/b4v7ftzo6qdri7j/gsnqRAkZ62 • Veggie Compass: http://www.veggiecompass.com/ • FINPACK: http://www.cffm.umn.edu/finpack/
Income Taxes	☐ Farm Income & Expenses ☐ Non-Farm Income & Expenses ☐ Interest Payments ☐ Depreciation Schedule
	• IRS – Reporting Farm Income and Expenses: www.irs.gov/uac/Reporting-Farm-Income-and-Expenses • Understanding Your Federal Farm Income Taxes: extension.psu.edu/business/ag-alternatives/farm-management/understanding-your-federal-farm-income-taxes • Tax Issues for Farm Rental Agreements: ohioline.osu.edu/fr-fact/0006.html • Financial Troubleshooting: www.extension.iastate.edu/agdm/wholefarm/html/c3-53.html • Understanding Taxes: www.agmrc.org/business_development/operating_a_business/finance/business_taxes.cfm