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Farm Financial Risk Management: Introduction to Farm Planning Budgets 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 steps for planning farm budgets as you begin or expand your farm enterprise. The topics covered in this risk management resource are not all-inclusive, but after reading this tool, you should be prepared to move forward in planning for your farm. If you have any questions about this risk management issue 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

Farm Planning Budgets

A complete farm financial system is comprised of a set of financial statements and planning budgets. The four planning budges used to record financial details include a whole farm budget, enterprise budgets, partial budgets and cash flow budgets. Preparation of each budget requires access to detailed data on farm enterprises, production methods, sources of farm revenue, costs for each enterprise, equipment and facility conditions, inventory of supplies, sources off-farm income, and insurance and tax records. While the effort required to compile these records may initially require several hours of time, it is important to note that this information will used to build both the financial statements and the planning budgets. The purpose of this paper is to introduce the four planning budget that farm managers may use to make decisions about future farm financial conditions and performance.

Farm planning budgets are created and analyzed by farm managers and owners to test out ideas on paper before making decisions to commit time and resources. Using the economic principle of opportunity costs, managers may use planning budgets to assess the potential benefits resulting from the chosen enterprise relative to the benefits represented by the next best alternative enterprise. The purpose of farm planning budgets is to estimate the profitability of a plan and the impact of any proposed change in the plan.

Cash Flow Budget – What is it and how does it help me?

A cash flow budget is a summary of projected inflows and outflows over given period of time. A key task of managing farm financial risk exposure is to plan cash flows for future accounting periods that are divided into quarterly or monthly time frames. A cash flow budget represents a projection of the future deposits and withdrawals to the farm business checking and savings accounts. Completion of the cash flow budget allows farm managers and owners to plan the dollar pathway by documenting both where and when funds need to go out to cover expenses and, funds are expected from farm sales. The purpose of the cash flow budget is to estimate the amount and timing of future borrowing needs and demonstrate the farm's ability to repay debts in a timely fashion.

Partial Budget – What is it and how does it help me?

A partial budget is a formal and consistent method for making management decisions based on relatively small changes to an existing farm plan. Farm managers are faced with numerous decisions that have the potential to impact the profitability of the operation, such as whether to participate in government farm programs, to purchase equipment or custom hire, or to plant more of one crop and less of another. The purpose of the partial budget is to outline the available options by comparing the profitability of one alternative (usually the current situation) with the profitability of a proposed alternative. Construction of the partial budget allows the farm manager to assess only those factors that will be affected by the proposed change and all other unaffected factors are held constant. Partial budgets are typically constructed on an annual basis to clarify the differences in profitability. A completed partial budget that produces a positive bottom line demonstrates that a profit increase will result from the proposed change. However, it is important to consider the level of risk associated with the proposed change relative to the current scenario when making the final decision.

Whole Farm Budget – What is it and how does it help me?

A whole farm budget is a summary of available resources, and, the planned type and volume of farm production that are under the management of the farm owner. The whole farm budget is constructed to include the expected costs, revenues, and profitability of each enterprise that comprise the overall farm business. The purpose of this budget is to analyze a major change that has the potential to affect several enterprises. A simple whole farm budget may include minimal information, e.g., list enterprises and production level, or, include detailed data for each enterprise, e.g., seed and fertilizer prices and volumes, custom harvest costs, pre- and post-production labor hours, application rates, etc. The time period analyzed in a whole farm budget can vary, depending on the needs of the farm owner or manager. For example, the current or upcoming year, a typical or an average year, or, a transitional period may be selected as the time frame of interest. Armed with a completed whole farm budget, farm managers can make informed decisions, such as taking over a new farm business, adding more land to the existing farm, or taking on a partner for the existing farm business.

Enterprise Budget – What is it and how does it help me?

A farm enterprise budget is the organization of revenues, expenses, and profit for a specific farm enterprise that is constructed on a per-unit of production basis, e.g., crop yield per acre, number of head of livestock, or number of trees per acre. The purpose of an enterprise budget is to demonstrate the potential profitability of each enterprise to the farm business. Enterprise budgets may be created for different levels of production (bushels per acre, pounds per square feet) or, types of technology (e.g., conventional, organic, irrigated, double-cropping). A completed enterprise budget provides farm managers with a tool that includes opportunity costs that demonstrate the economic returns to the enterprise in addition to the accounting costs.

Components of an enterprise budget

Each enterprise budget has four sections that need to be completed using information from either existing farm records or, borrowed from published budgets provided by Virginia Cooperative Extension (VCE) specialists that include recommended best management practices. The first component is the title, which will list useful information about the enterprise and any distinguishing characteristics, e.g., tillage practices, machinery assumptions, etc.

The second component details all expected farm revenues, or sales receipts, such as quantities produced, unit of measure, and market price per unit for the enterprise. Under the revenue section, all items produced by the enterprise (i.e., feeder lambs, wool, cull ewes and rams, etc.) are listed and market prices estimated per unit for each revenue-generating item.

The third component details all expected costs related to producing, processing, harvesting or marketing the products. Costs listed in this section will include variable (operating or direct) costs and, may also include fixed (ownership or indirect) costs assigned to this enterprise. A key financial risk management goal is to understand the economic costs of selecting a particular enterprise. Using the enterprise budget, the economic costs of selecting this enterprise may be estimated by calculating the interest on operating costs. To determine the economic costs, the manager may sum all variable costs and multiply by the annual interest rate and, the portion of year the money is used to operate the enterprise. Final calculation of the total variable costs will include this economic cost, and represent the cost of selecting this enterprise over the next best alternative. Fixed costs are charged to all fixed assets, which are items that are not completely exhausted during a single production period, e.g., machinery, breeding livestock, land, buildings, facilities, fences, owner's labor and management skills, etc. Fixed costs may include charges for owner labor, a management fee, and charges that represent the enterprise share of the "DIRTI-5" (depreciation, interest, rent, taxes, and insurance). Farm owner labor may be valued at the market price for physical labor, which ranges from $8-$12 per hour depending on the required skill set. The management fee is typically calculated as five percent of gross revenues. If the farm land is rented, the rental rate can be entered; however, if you own the land, the rental charge can be estimated by using the opportunity cost of the land (the fee charged if the manager were to rent the land to someone else).

The fourth and final component is the calculation of net return to the farm enterprise, which is determined by subtracting estimated total costs from total revenues. Calculated net returns may be defined as "estimated return to profit" if the fixed cost estimate included a management opportunity cost, which is typically represented as a percent of the gross revenues. This opportunity cost represents a payment to the farm manager or owner in return for the time and resources dedicated to this enterprise. If a management charge was not included in the fixed costs section, the calculated net return is labeled "estimated return to management and profit."

Farm enterprise budgets demonstrate the estimated profitability of each enterprise, and can be created for different levels of production or, types of technology, providing a great deal of flexibility that make this tool valuable to farm managers by informing the planning process. Key determinants included in the enterprise budget are the production levels (e.g. bushels/ acre, pounds/acre, sale weight/animal, pounds of milk/cow etc.), sale prices and cost of production. Farm managers who create the budget must provide documentation to justify the production levels (e.g. average county yields or previous yields achieved on a farm) and production costs (e.g. VCE budgets using current input costs) that were included in the enterprise budget. For example, details that reveal how sale prices were determined (e.g., local sale barn price? three year average prices?) should be noted. Farm managers new to an enterprise are encouraged to research current market price trends to inform their decision to produce these items. In addition, it may take several years for a new farm enterprise to achieve the "average county yields" listed in VCE enterprise budgets; therefore, managers are encouraged to include 80% of average county yields for projected yield estimates in the expected farm revenues component of the budget.

Because the enterprise budget calculations include opportunity costs, returns above variable and total costs can be measured to provide guidance on both short and long term decisions related to the enterprise. Returns above variable costs measure how much revenue remains after all variable costs are paid. The enterprise must generate positive returns above variable costs to operate in the short term, as this indicates the revenues are sufficient to at least pay the operating costs resulting from the decision to produce that item. Returns above total costs measure how much revenue remains after all variable and fixed costs are paid. The enterprise must generate positive returns above total costs to operate in the long term, as this indicates that revenues are sufficient to pay both variable and fixed costs.

Finally, completed enterprise budgets may be used to determine breakeven prices and yields needed to cover either variable and/or fixed costs, giving the farm manager another necessary piece of information when making short and long term decisions related to specific farm enterprises. The short run breakeven price represents the lowest price that may be received per unit, given a specified yield per unit, to at least pay the variable costs incurred to produce the items. To calculate the short run breakeven price, divide variable costs by the yield per unit. The long run breakeven price represents to lowest price that may be received per unit, given a specified yield per unit, to pay both fixed and variable, or total, costs incurred to produce the items. To calculate the long run breakeven price, divide total costs by the yield per unit. To determine short and long run breakeven yields, the same calculations may be used by holding prices per unit constant and allowing the yields to vary.

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

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