

Goat Farm Budgeting
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Unit Objective

After completion of this module of instruction the producer should be able to identify three types of budgets that could be used on the family goat farm and define budgeting and depreciation. The producer should be able to develop a budget with realistic income and expense values and review and interpret a goat enterprise budget. The producer should be able to complete all assignments with 100% accuracy and score a minimum of 85% on the module test.

Specific Objectives

After completion of this instructional module the producer should be able to:

1. State the possible returns on an agricultural asset.
2. Identify some things that should be considered when developing a map for the farm business.
3. Select from list historical information regarding goat meat.
4. Define budgeting.
5. State resources that a producer may use while managing the goat farm.
6. State the three types of budgets for use on the goat farm.
7. Identify the three types of cost for the goat farm.
8. Define depreciation.
9. Distinguish between positive and negative effects of budgeting.
10. State the purpose of financial records.
11. Develop a budget that shows realistic income and expense values.
12. Review and interpret a goat enterprise budget.

¹ Adapted from “Ranch Business Planning and Management”, Beef Cattle Manual, Fourth Edition, Oklahoma State University, 2005.

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Introduction

Investing in a farm is often an expensive undertaking and can be financially stressful. Land ownership in particular is costly. Historical rates of return to agricultural assets average 4 to 5% making it difficult to make principal and interest payments on land notes with farm income only. Hence, business planning is especially important in ranching operations even if the decision to produce goat meat is a lifestyle choice or hobby rather than strictly an economic one. An expensive hobby may create a serious financial drain on the producer's checking account.

The agricultural producer or farm manager is challenged when organizing and managing farm resources to maximize economic returns to owned or controlled resources. Resources include land (owned and rented) and associated improvements, capital (borrowed and owned), and labor (hired, farm operator, and additional family). The manager is responsible for combining available resources and knowledge to best achieve the desired goals and objectives of the farm business.

As a key component of a business plan, budgeting is a management tool that helps the beginning producer evaluate the feasibility of a proposed venture and helps established producers identify areas for improvement. Budgets identify financial resources needed for both farm investment and annual operating costs. With budgets, management can begin to answer such questions as:

- How may the available resources best be used?
- What enterprises (crops and/or livestock) can be produced and which will contribute most to returns to owned resources?
- How much of the controlled land should be devoted to each enterprise?
- What equipment and machinery will be needed to produce the potential enterprises?
- What production practices should be used to produce each of the enterprises?
- How much labor (both family and hired) will be needed on the farm?
- What are the capital requirements?

Budgets help ensure that investors make decisions based on realistic data, not just emotions. Knowledge of budgeting and the ability to use them will help make the right decision.

Types of Budgets

There are three basic types of budgets that can be used in the farm business management process. Each type of budget provides different information to the manager for use in the decision-making process. The common thread in each type is that, if properly defined and used, the budget format permits the manager to use economic logic to answer questions of what, how much, and when resources should be used to achieve the goals and objectives as established by the farm family.

The three types of budgets are:

1. Whole-farm budget
2. Enterprise budget
3. Partial budget

Whole-Farm Budgets

Since it is a plan for the future use of farm resources and establishes the future direction of the farm organization, the whole-farm budget must conform to the farm family goals and objectives to be successful. Farm management that is goal-directed integrates the goals and objectives of the farm with those of the family and reduces pressure on competitive uses of family controlled resources. Oklahoma State University (OSU) Extension fact sheet F-244, "Goal Setting for Farm and Ranch Families," can help develop a process for identifying farm and family goals, prioritizing them, and identifying management strategies that achieve identified goals.

The whole-farm budget should start with the inputs the operator has available for use in the farm business. Often the amount of land and operating capital available are limiting factors. Other factors such as buildings, the farmer's managerial skills, and available markets can also be relatively fixed. It is important to start with those fixed elements in planning a whole-farm budget. The results of the whole-farm budget should combine the resources, constraints, technical information, and price data into a realistic whole-farm budget for the farm being considered. The outcome should be a plan that can provide direction for the farmer and family to follow in maximizing the returns to owned resources.

To develop a whole-farm budget:

- ◆ List the goals and objectives of the farm firm.
- ◆ Inventory the resources available for use in production.
- ◆ Determine physical production data that will be used in the input/output process.
- ◆ Identify reliable input and output prices.
- ◆ Calculate the expected variable and fixed costs and all returns.

Enterprise Budgets

Questions may arise as to whether goats will help supplement farm income or if a larger operation is even technically feasible. In an enterprise with seasonal and cyclical price changes, sensitivity to variable grain and hay prices, and a vulnerability to drought, appropriate management practices and an identification of key cost components are important. Circumstances over which the producer has no control can wreak havoc in the short run if a producer neglects strategic planning and risk management.

An enterprise budget estimates the full economic costs and returns projected to accrue to an activity - raising livestock or producing grain - for some period, generally one year. Enterprise budgets incorporate information about the specific resources, management practices, and technology used in the production process. Budgets help provide a decision framework for assessing both short- and long-range economic analyses of production agriculture. Budgeting allows producers to evaluate options before committing resources. Budgets can also be used to estimate potential income and the size of farm needed to earn a specified return or to compare the profitability of two or more systems of production. Budgets provide the documentation necessary to project cash flows and obtain/maintain credit-worthiness. Budgets can be used to estimate the amount of rent that can be paid for land or machinery.

A goat enterprise budget is a statement of what is generally expected from a set of particular production practices, listing the expected revenue and expenses incurred. It is designed to show profitability, not just cash flow. Profit is shown as residual earnings after resources utilized in the operation have been assigned a payment. The enterprise budget shown in Table 1 lists anticipated costs of operating inputs plus fixed costs (interest, depreciation, taxes, and insurance) on machinery, equipment, and livestock along with expected production per doe. Since the budget documents variable and fixed costs, it is useful in calculating profitability, break-even values, and the potential return on an investment.

An enterprise budget should contain several components. A detailed description should include a production goal, the production techniques to be employed, the land resource required, and even something about the capital and labor requirements. An enterprise budget should include all costs and all returns associated with the defined enterprise.

Production

Historically, a lack of a developed nationwide marketing system in the United States caused seasonal price fluctuations and wide variations by location. Goat meat is favored by a number of ethnic groups who have immigrated to this country and many producers have traditionally supplied goat meat to these populations on an individual basis. However, with goat meat demand steadily increasing and domestic producers raising more goats to meet this growing appetite, market outlets such as livestock sales auctions are becoming more common.

A sample budget considering a herd size of 50 does and two bucks is shown in Table 1. The kids are marketed at four months of age. The total quantity of production is multiplied by the actual or expected price to determine value of production. Gross or total receipts are the sum of production values for individual items. For example, the expected returns in the budget are averaged for reporting on a per doe basis. A herd technically does not market 30.5 male kids for sale. This is a statistical result of the averaging process for the herd. The averaging process yields a realistic estimate of the budget unit (doe) returns to the entire herd given the assumed kid crop percentage, death loss, and cull doe replacement rates.

Production costs

Three general types of costs comprise the total cost of producing any type of farm commodity. They are variable (operating), fixed, and overhead expenses. Overhead expenses (also known as indirect costs) are difficult to allocate among individual enterprises. Examples include telephone, electricity and accounting services. Overhead expenses are included in whole-farm budgets, but are generally excluded in enterprise budgets.

Table 1 – Meat Goat Budget, 50 Head Unit, 180% Kid Crop, 10% Kid Death Loss, 20% Doe Replacement Rate, Central Oklahoma Native Pasture, Per Doe Basis.

	Unit	Price/Head	Quantity	Total	\$/Head
PRODUCTION					
Male Kids	Head	\$67.32	40.50	\$2,726	\$54.53
Female Kids	Head	\$67.32	30.50	\$2,053	\$41.06
Cull Does	Head	\$58.23	7.00	\$408	\$8.15
Cull Replacement Doe Kids	Head	\$87.50	0.00	\$0	\$0
Cull Bucks	Head	\$104.99	0.00	\$0	\$0
Total Receipts				\$5,187	\$103.75
OPERATING INPUTS					
	Unit	Price	Quantity	Total	\$/Head
Pasture	Head	\$1.60	1	\$80	\$1.60
Hay	Head	\$7.56	1	\$378	\$7.56
Grain	Head	\$0.00	1	\$0	\$0.00
Protein Supplement	Head	\$22.23	1	\$1,112	\$22.23
Salt/Minerals	Head	\$1.80	1	\$90	\$1.80
Vet Services/Medicine	Head	\$1.77	1	\$88	\$1.77
Vet Supplies	Head	\$3.25	1	\$163	\$3.25
Marketing	Head	\$8.50	1	\$425	\$8.50
Mach/Equip Fuel, Lube, Repairs	Head	\$6.20	1	\$310	\$6.20
Machinery/Equipment Labor	Hours	\$7.75	0.90	\$349	\$6.98
Other Labor	Hours	\$7.75	2.00	\$775	\$15.50
Annual Operating Capital	Dollars	7.25%	39.03	\$142	\$2.83
Total Operating Costs				\$3,911	\$78.22
Returns Above Total Operating Costs				\$1,276	\$25.53
FIXED COSTS					
	Unit	Rate		Total	\$/Head
Machinery/Equipment					
Interest at	Dollars	8.25%		\$88	\$1.76
Taxes at	Dollars	1.00%		\$18	\$0.36
Insurance	Dollars	0.60%		\$7	\$0.13
Depreciation	Dollars			\$160	\$3.19
Livestock					
Interest at	Dollars	8.25%		\$431	\$8.62
Taxes at	Dollars	1.00%		\$73	\$1.45
Insurance	Dollars	0.60%		\$32	\$0.63
Depreciation	Dollars			\$160	\$3.20
Land					
Interest at	Dollars	0.00%		\$0	\$0
Taxes at	Dollars	0.00%		\$0	\$0
Total Fixed Costs				\$967	\$19.34
Total Costs (Operating +Fixed)				\$4,878	\$97.56
Returns Above all Specified Costs				\$309	\$6.19

Source: OSU Enterprise Budget Software.

Variable costs

Variable costs are those operating inputs that vary as the level of production changes. They are items that will be used during one operation year or one production period. Examples include feed, fuel, vet medicine and supplies. They would not be purchased if production were not undertaken.

Variable costs may also be classified as cash or non-cash in nature. For instance, labor expenses are included in the operating input section of Table 2.1. No differentiation between owner supplied or hired labor is assumed. If the farm operator or a family member supplies labor, a wage rate or salary that represents earnings if employed elsewhere would be shown. This illustrates one of the most important concepts in economics – opportunity costs. Every resource used in the production process has one true cost, its opportunity cost. The opportunity cost of labor is the return the resource can earn when put to its best alternative. If the operator decides not to assign a charge to the labor item, residual earnings (as defined by ***Returns Above Total Operating Costs***) includes labor income. The producer can then determine whether the return is adequate compensation for his/her labor efforts.

Fixed costs

Fixed costs are not affected by short-term enterprise decisions and do not vary with the level of production. Generally, fixed costs are those ownership costs associated with buildings, machinery, and equipment that are pro-rated over a period of years. Fixed costs may also be cash or non-cash in nature. Real estate taxes, personal property taxes, and insurance on buildings are examples of cash fixed costs. Non-cash costs include depreciation and interest on capital investment.

The interest charge for capital assets such as machinery, equipment, and breeding livestock used in the goat operation is based on the average amount of capital invested over the ownership period, usage per year, and an interest rate. It is important to note that money invested in purchased capital assets has an opportunity cost as well – the return they can earn from their best alternative use. This interest on investment reflects a payment to a farmer's owned resources.

Depreciation represents an attempt to spread the investment costs or purchase price of durable assets over their productive lifetime. It is typically the largest cost associated with asset ownership. For example, when a tractor is worn out, it should have been completely “paid for” by depreciation. A producer must, in effect, save this much every year or reinvest it in machinery and equipment, or he/she will eventually end up with worn out items and no cash reserves to replace them.

Taxes vary by region but are generally a function of average value. In the goat budget, the annual charge for taxes is based on 1% of the purchase price.

Insurance policies are usually carried on more expensive machines while the farmer generally assumes the risk of loss on the simpler, less expensive assets. The insurance costs are based on the average amount of capital invested times an insurance rate.

Returns above total operating costs

The return to fixed costs, risk, and management (that is, the returns above total operating costs) is computed by subtracting total operating costs from total receipts. When returns above operating costs are positive, production is economically rational for an established enterprise. Positive returns above total operating costs indicate that the enterprise generates enough revenue to cover all variable costs and some portion of fixed costs. If returns above total operating costs are negative, the enterprise is not generating enough revenue to cover even variable costs. Unless the producer is willing to subsidize the operation (for instance, by contributing off-farm income), eliminating this enterprise will increase profits or decrease losses on the overall farm business. The return above total operating costs is also known as gross margin.

Returns above all specified costs

In determining overall enterprise profitability, fixed costs also have to be part of the profit equation. The return above all specified costs is calculated by subtracting total variable and fixed costs from operating revenues. This amount represents residual earnings for management, risk, and to land (because land costs can have a large variation within a region, land costs are excluded). Each individual must decide whether this return is a sufficient reward for management skills, risk exposure, and to land devoted to the enterprise. It should be noted that since non-cash items may be included in fixed costs, operating profits are not the same as net cash or operating receipts as shown in a cash flow statement.

In Table 1, the return above total operating costs is positive. Having a positive return above operating costs indicates the operation is able to contribute to fixed costs associated with owning capital assets. A positive return above all specified costs indicates that the operation is self-supporting and shows an amount available for reinvestment in the business or family living. In cases where operating costs are covered, but the return above all costs is negative, insufficient income is generated to cover all fixed costs. Any loss may be a short-run problem, however.

Building on budgets to determine break-even prices or yields and view sensitivity analysis is helpful in evaluating the financial risk associated with an enterprise. The break-even price is the price at which all costs will be covered given average production; the break-even yield is the level of production needed to cover all costs given average market prices. Break-evens above variable costs and above all costs both provide useful information. With sensitivity analysis, income variability due to price and production risk is demonstrated, typically with tables of numbers showing returns under different price and yield scenarios. This information helps the managers assess their willingness to assume the risk of these variations.

One of the most important keys to successful goat operations is to be as cost effective as possible. As mentioned previously, one needs to periodically evaluate the contributions of all resources used in the operation. Look at possibilities for improving cost control through new technologies or cultural practices. Identify key leverage points that can generate the “most bang for the buck”. Are there ways to reduce the number of trips to the feed store while still meeting nutritional requirements? Can you do a better job of taking care of the herd instead of regular visits from the veterinarian? Benchmark what other producers are doing. Spending dollars wisely given the appropriate management practice can generate major dividends that impact the bottom line. After

all possibilities to improve the budget have been exhausted and long-run earnings still appear unsatisfactory, the best decision may be to exit the enterprise and employ resources in a different enterprise or investment.

OSU software is available to develop a customized budget for an individual operation (<http://www.agecon.okstate.edu/budgets>). The Microsoft Excel-based software provides users access to important agricultural references during an “interactive” budget building process. Through a series of links and pop-up menus, users may override defaults with their own values to customize the budget if their experience and farm records indicate different values and production practices. Where possible, web-links are built into the spreadsheets to provide users important economic and agricultural science information on the Internet. Link examples include OSU Extension publications, Oklahoma Agricultural Statistics Service data, and Langston University goat information.

The software is designed to be flexible and user-friendly. After specifying a base livestock budget setting via a start-up form, the budget (as shown in Table 1) may be further customized by clicking on any budget item which links to a corresponding supporting sheet within the workbook. For example, to access and change the default kidding percentage for the herd, one may click on any of the production items linking to the Production sheet. The Production sheet summarizes herd information, kid retention and sales, culling and replacement practices, and herd buck information. Default values for kidding percentages, kid death losses, and average sale weight are based on information from the American Institute for Goat Research at Langston University. Kidding percentages can then be tailored to match a particular operation on the screen.

Partial Budgets

Partial budgeting is a procedure where receipts and expenses, which change with a change in organization or procedures, are listed in a systematic order. It is a process to allow a total farm budget to be fine-tuned. It allows the analysis of a defined change to see if the change would improve the total farm budget.

The steps in constructing a partial budget are to:

1. State the proposed alternative or change that will be analyzed.
2. Collect data on all aspects of the business that will be affected by the change.
3. Classify or group the types of impacts that will occur by including expenses increased or reduced and receipts increased or reduced.

The partial budget is based on the concept that a change in the organization of the business will have one or more of the following effects:

- ***Positive Economic Effects***
 - The change will eliminate or reduce some costs.
 - The change will increase returns.
- ***Negative Economic Effects***
 - The change will cause some additional costs.
 - The change will eliminate or reduce some returns.

The net change between positive and negative economic effects is an estimate of the net effect of making the proposed change in the total farm budget. A positive net change indicates a potential increase in income and a negative net change indicates a potential reduction in income due to the proposed change.

Other Aids to the Process

Education

The producer needs to know what they are doing or raising goats will be a painful lesson in the pocketbook. You will need to have an eye for detail, be able to follow set procedures, and understand the risks involved. Use the best information available and include all decision makers in the business planning process. Talk to local growers and extension personnel. Other sources of information are books/periodicals on meat goat production and industry, commodity organizations, and meat goat websites such as Langston University. The [National Ag Risk Education Library](#) provides risk management education on a variety of topics including goats. Focus on financial management as much as production performance. Realize that alternatives that appear profitable for one producer may not work for another. Everyone's experience levels, managerial abilities, and willingness to assume risk is different. Do your homework!

Financial records

Records are the foundation for accurate budgets, financial statements, and tax reports. While tax reporting is the primary motivation for record keeping for many producers, research has shown positive returns to investments in record keeping and analysis in support of farm and ranch decisions. The sample budget previously discussed may be tailored to fit an individual producer's operation, but its reliability as a planning tool is only as good as the quality of the data.

Since budgets should be based on the best information possible, the producer's own records are a good place to start. A variety of tools are available to assist producers in keeping financial records. The record-keeping system that a farm manager should use depends on the cost - time, effort, and cash - in obtaining a system, maintaining it, and the value of the output as a decision tool. Farm record systems vary in the amount of information collected, the method of entering data, and the structure of final reports. Goat producers should choose the method appropriate to the size and complexity of their operation.

Computerized record-keeping systems are affordable and especially useful for manipulating data for different types of reports. Although a computerized system may not reduce the amount of time spent keeping records, computerized records make financial summaries simple, more efficient and effective for management needs. For instance, an annual or monthly cash flow statement based on actual income and expenses can be generated in a matter of seconds. Income and expenses can be sorted by enterprise so that farm managers know where "profit centers" are on the farm. Whole farm or enterprise budgets can be prepared and compared to actual transactions so that financial progress can be monitored at regular intervals. Graphs prepared with a few keystrokes can show where cash is coming from and where it is going and are invaluable in getting a quick feel for the farm's financial situation.

A number of user-friendly commercial software products are now available that can be adapted for farm use. One such software program that is appropriate for farms and ranches requiring only cash records is Quicken®. Quicken® is user-friendly, widely available, and inexpensive. More information on using Quicken® for farm financial record keeping is available from the OSU Department of Agricultural Economics at <http://www.agecon.okstate.edu/quicken/>. Producers who need a payroll system plus the ability to invoice and maintain accounts payable and receivable may want to use QuickBooks®, which is a small business double-entry accounting system, or a comparable package. Cash flow features and investment tracking are lacking in QuickBooks®.

Hand record books are available through the Oklahoma Cooperative Extension Service and from many lenders. The OSU Agricultural Economics website offers a book from which individual pages are available to be printed as needed: <http://www.agecon.okstate.edu/farmbook/>.

Oklahoma farmers and ranchers can call on the Intensive Financial and Management Planning Support (IFMAPS) program to receive free, confidential assistance in farm business planning, including analyzing the potential for a new farm business. Trained financial specialists work with families one-on-one to develop financial statements and evaluate alternative plans. The plans typically include budgets for the farm enterprise(s), a cash flow plan, income statement, balance sheet, debt worksheet, and financial measures. Contact your local agricultural Oklahoma Cooperative Extension Educator or call the IFMAPS Center at 1-800-522-3755.

Budget Limitations

Although “best estimates” should be used to develop budgets for use in farm business analysis, it is important to remember that projections are influenced by production and price uncertainty. Such variability creates risk to the operator and puts pressure on the reliability of the estimates used in the enterprise budgets. Everything doesn’t proceed just like you planned it. Even under careful use, errors can compound themselves to the point where budgets can have little or no value. This element of risk should be considered and evaluated by the manager when determining the solutions that best meet the goals and objectives of the farm family. Successful farm managers adjust their numbers throughout the year at regular intervals by comparing actual outcomes versus planned. This internal evaluation will help identify existing or potential problems and will result in fewer unpleasant surprises.

Budget preparation is time consuming, but it can pay major dividends. It requires pencil and calculator activity as well as searching data sources for information to be used in preparing the budget. Software is also available to assist in budget calculations. Not only is it important to work hard, but also to work smart.

Conclusion

Budgets (whole-farm, enterprise, and partial) are management tools to help evaluate the farm business. Like a puzzle, each budget brings to the table an important piece that will help address how available resources best fit together on the farm. Specific questions such as how and what to produce, production levels, and achieving goals can be answered once the puzzle is completed.

Business management requires that producers focus on financial management as much as production performance. Successful managers discover that life is a whole lot easier saving money through budget planning. Goat producers interested in being profitable should expect to do no less.

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