

Farm Business Planning
Marion Simon
Kentucky State University

Unit Objective

After completion of this module of instruction, the producer should be able to state the need for a written farm mission statement and the purpose of a business plan, plus distinguish between tactical and strategic planning. The producer should be able to distinguish between direct and indirect costs and between cash inflows and cash outflows. The producer should be able to conduct a SWOT Strategic Planning Analysis of the individual goat farm. 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 why farms need a written mission statement.
2. State the purpose of business planning.
3. Distinguish between tactical and strategic planning.
4. State the ingredients, conditions/facts that make a SMART Goal.
5. Define SWOT.
6. Identify all resources that are available for use on the goat farm.
7. State the purpose of an up-to-date resource inventory.
8. State the objective of SWOT Analysis.
9. Distinguish between direct and indirect costs.
10. State how business transactions can be classified.
11. Distinguish between cash inflows and cash outflows.
12. Identify the components of a cash flow statement.
13. State the difference between an income statement and a profit and loss statement.
14. Identify the three components of the balance sheet.
15. State the two methods used to value the assets of an operation.
16. Distinguish between financial position and financial performance.
17. Identify the five categories of financial measure and ratios.
18. Distinguish between current ratio and working capital.
19. Match the ratios to measure financial solvency to the correct definition.
20. Define profitability.
21. Conduct a farm resource inventory.
22. Conduct a SWOT Analysis of the individual goat farm.
23. Evaluate the financial conditions of a goat farm.

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Farm Business Planning

This curriculum is based on the “Risk-Assessed Business Planning for Small Producers” curriculum that was developed by a joint project of 1890 Land Grant Institutions, USDA-CSREES, and the SRRMEC (funded project collaborators: Marion Simon, Daniel Lyons, and Nelson Daniels), authors of the manual: Stan Bevers, Brenda Duckworth, Blake Bennett, Rob Borchardt, Nelson Daniels, and Allen Malone (Texas A&M University and Prairie View A&M University).

Role of Farm Business Planning

Farms need a written mission statement to show why the farm business exists, its values, what the business will be, and what it will accomplish. Its mission statement describes the purpose of the farm business, its targeted products, services, and quality. The mission statement provides the basis for developing the farm business’s long-term plans, goals, and objectives. From it, the farm business develops and identifies its actual and targeted legal arrangements (sole proprietorship, partnership, corporation, cooperative, etc.). Keeping the farm’s mission statement as the target, the farm manager will develop business plans, enterprise budgets, market plans, and financial statements to see if the operation shows a profit, has a positive cash flow, is a good use of time, labor and money, and has any opportunities or weaknesses that need to be addressed.

Business planning is about finding, describing and refining the farm’s competitive advantages and moving the farm business in the direction to reach its goals and objectives. The operation needs both “tactical plans” for short-term planning (i.e., do I sell weaned kids this month or next month) and “strategic plans” for long-term planning (i.e., do I buy more land or do I invest in more breeding does). These plans should connect the production, marketing and financial aspects of the farm business. The plans should provide a roadmap for management of the operation that helps all parts of the farm to flow smoothly. Everyone that is involved in the farm business should be included in the planning process. By doing this, each person’s goals are evaluated to see if and how they fit into the overall goals of the farm operation and if they can be realized. The planning process helps to:

1. Identify the goals of the farm business (what you want to accomplish);
2. Identify the farm’s inventory and resources (what you have to work with);
3. Assess the farm business and the environment in which it operates (where you are and where you may want to go);
4. Identify the farm’s organizational structure (and chart) if it is a larger operation with several employees, employee compensation, allocation of profits, etc.;
5. Analyze the performance of the farm business (how you have done in the past based on the historical financial statements);
6. Decide upon a course of action (what you will do);
7. Implement the strategies (how you will do it); and
8. Evaluate the farm plan (is it working).

To be more specific, farm planning:

1. Identifies **Goals** that are attainable and moves the farming operation along the targeted path. Each goal should be **SMART**. A **SMART Goal** is:
 - A. **Specific** (a goal that has a specific thing to do and can be defined),
 - B. **Measurable** (the goal can be measured and can be proven),
 - C. **Attainable** (the goal is realistic, the farm business can reach the goal),
 - D. **Rewarding** (the goal will move the farm operation toward what you want it to be), and
 - E. **Timely** (there is a time limit to reach the goal);
2. Identifies **all resources** that are available to the operation and those that are needed but are not available to the operation. These include (see **How to Create a Farm Resource Inventory** below):
 - A. **Physical and natural resources including forages, forbs, water sources, soil types, land resources, and rainfall,**
 - B. **Human and personnel resources,**
 - C. **Animals and crops resources (forages),**
 - D. **Equipment, facilities, barns, computers, fencing, and**
 - E. **Financial resources;**
3. Assesses the farm business and the environment in which it operates. The **SWOT analysis** can identify the farm operation's **Strengths, Weaknesses, Opportunities, and Threats** (see **How to Do a SWOT Analysis** below);
4. Evaluates the farm business to determine its production and financial strengths and weaknesses with an emphasis on the financial;
5. Helps the farm manager to decide upon a course of action or strategy for the farming operation such as improving the breeding stock, paying debts, or buying handling facilities;
6. Helps the farm manager to implement the strategies that have been identified. The manager must be sure to include all members of the operation in the decisions and explain their responsibilities; and
7. The farm plan should be evaluated annually to see if the goals for the year were met, need to be revised, or need to be continued into the following year.

Review Questions

1. What is the basic reason for farm business planning?

Answer: Business planning helps the farm manager to find, describe, and refine the competitive advantage of the farm business to help it to achieve its goals and objectives.

2. The farm business planning process includes a detailed list of resources that are available and needed (unavailable) to the operation. (True or False) **True**

How to Create a Farm Resource Inventory

Note: Under the national U.S. Animal Identification Program (USAIP), it is important for livestock producers to have a registered Premise Identification for their farm and point of origin identification for each goat marketed. These identifications should be used in your record-keeping and inventory lists.

Goat farmers use land, labor, machinery, water resources, breeding stock, financial resources and management to produce commodities for sale. It is important to identify and update all of the farm's available resources at least once a year. An accurate up-to-date resource inventory can help to:

1. Complete a balance sheet;
2. Provide a summary of collateral that can be used for a loan application;
3. Identify problems with the condition of the farm's assets and their management;
4. Provide information that can be used to evaluate options for growth and diversification;
5. Identify underutilized resources;
6. Compute non-cash expenses such as depreciation;
7. Determine the health of an operation; and
8. Document the farm's resources in case of fire, theft, or storm damage.

Resource inventory

The resource inventory will help to identify soil erosion in fields and pastures, manure that is stored (dumped) too close to water sources, financial problems such as too much debt or large variable costs, and needed labor and human resources. Only after a resource inventory is completed can the current health and future direction of the operation be determined. The resource inventory can be divided into these five areas:

1. **Physical/Natural Resources:** These include:
 - A. A map detailing the land topography, pasture, vegetative species, weeds and woody species and their sites, carrying capacities of each field, the location of structures including barns, working pens, and fences, and all water resources that are available including ponds, streams, automatic waterers, and rural water lines (a NRCS soil map and a hand-drawn map are helpful);
 - B. Soil surveys including land use and fertility (soil test) recommendations by field or area (a NRCS soil map and University Extension soil tests are helpful);
 - C. An accurate description of wildlife species and populations (including loose neighborhood dogs and coyotes) to determine potential predators or problems that can result from them;
 - D. A historical record of rainfall and weather patterns for the farm or local area; and
 - E. The fair market value of the land (farm) if it were sold.
2. **Human/Personnel Resources:** These include:
 - . All persons who work on the farm including the farmer, family, paid full or part-time employees, custom hired operators (i.e., a hired trucking company or fencing company), friends and neighbors;

- A. The names, assigned duties of each person, their salaries/wages, their skills and talents, their work schedules, emergency information for employees, and sources of help to cover a person who is absent or cannot perform his/her duties; and
 - B. I-9 (U.S. citizen or not) and other data that is needed for filing income taxes, insurance benefits, social security or tax identification number, etc.
3. **Equipment Resources:** These include:
- . The size, age, condition, model or serial numbers of all equipment that is used by the farm (permanent identification on the equipment is helpful);
 - A. Note if the equipment is owned, rented, or borrowed; and
 - B. Estimate the fair market value of each piece of equipment and its depreciated value (original cost minus accumulated depreciation).
4. **Animal (and Forage) Resources:** These include:
- . The inventory and value of all livestock including goats, guard animals, and others. The value of breeding stock can be determined by (1) original purchase price minus accumulated depreciation or (2) the fair market value. These records should include each animal's identification (ear tag, ear notch, implant, or USAIP), breed records and registrations, breed or type, performance and produce of dam and sire records;
 - A. The total number of acres along with a history of yields that are used by each enterprise (i.e., goats and estimated forage production in the field).
5. **Financial Resources:** These include:
- . Cash and savings accounts that are used by the farm (it is best to separate farm and family living bank accounts but this is often not practical for small producers);
 - A. Current debts, include the lender, the amount owed, the interest rate, and the time remaining on the loan;
 - B. Operating loans that are used year after year along with the expected amount to be borrowed, terms, and interest rates (these are loans that you expect to have each year in order for you to operate the farm but you do not have now); and
 - C. Other credit that may be available (i.e., a tab at the feed store).

Review questions

1. What are the reasons for completing a farm resource inventory?

Answer: Completing a farm resource inventory is vital for the evaluation of the current health of the operation and planning. An up-to-date- resource inventory can help to complete a balance sheet, provide a summary of the farm's collateral for a loan, identify problems with the condition of the farm's assets or management, be used to evaluate options for growth and diversification, and be a record in case of fire, theft, or storm damage.

2. What are the five types of resources that are identified in a resources inventory list (5)?

Answer: physical/natural resources, human/personnel resources, equipment resources, animal (and crop or forage) resources, and financial resources.

How to Do a SWOT Analysis

Identifying the farm's internal Strengths and Weaknesses, and examining the external Opportunities and Threats that the farm business faces.

The SWOT analysis helps to provide direction for the farm business and serves as a basis for the farm's business plans. It can indicate Strengths and Opportunities that will help the farm to achieve its goals, or indicate an obstacle that must be overcome or minimized to achieve success (Weaknesses or Threats). The objective is to help the farm business to plan strategies that take advantage of the strengths, counter the threats, and improve the weaknesses. Once all of the strengths, weaknesses, opportunities, and threats to the farming operation have been listed, the information should be combined and strategies developed. Draw up plans to take advantage of the strengths and opportunities, counter the threats if possible, and strengthen or improve the weaknesses. Pay close attention to strengths that can help the farming operation to achieve its goals and objectives and use the SWOT analysis to give an overall look at the current position of the operation. Then use the analysis to plan future strategies and to manage the farming operation. Develop strategies that will strengthen the weak areas or take advantage of the strengths and opportunities. Give close attention to developing strategies that focus or capitalize on the strengths of the operation.

Here are some sample questions and examples that fit each category:

Strengths

1. What does the operation do well? (marketing weaned kids, producing commercial breeding stock)?
2. What do other people (neighboring farmers, goat farmers and county agents) see as your strengths? (producing healthy weaned market kids, marketing show animals, excellent pasture)
3. What are the major sources of the farm's revenue and profit? (show kids, weaned kids, commercial breeding goats)
4. What is the major focus of the farm operation? (weaned kids for sale at the auction or livestock sale, purebred breeding stock)
5. What is the market share of the farm? Of the organization (if you belong to, or market through, a producer association or cooperative)?
6. Is the farm's marketing and advertising effective? (buyers indicate that they saw your farm on the internet)
7. What made you start the goat operation? (kid prices at the stockyards)
 1. What were the motivating factors and influences? (kid prices, Kentucky's cost-share program, sale prices of purebred breeding stock, goats are easier to handle than cattle)
 2. Brush and weeds in abundance on the farm?
 3. Do these factors still represent some of your strengths?
8. Why do your customers buy from your farm? (consistent quality, petting zoo, advertising, show winnings)

9. What differentiates the operation in the market? (purebred Boers, processed products, show winnings, grades of the market kids)
10. What have been the most notable achievements? (weaning weights improved)
11. What relevant resources does the farm have? (forages, water resources, buildings)
12. Is the moral of the employees high? Are there incentives in place to reward employees for good work? (bonuses, extra paid leave, share of the profits)
13. What is the farm's greatest asset? (forage base)

Weaknesses

1. What does the farming operation not do well? (direct marketing of show stock)
2. What do other farmers and Extension agents see as the farm's weaknesses? (credit card debts, mixed and inconsistent weaned kids)
3. Are the weaning weights low?
4. Are the kidding rates low?
5. What should the farm avoid? (credit card debt)
6. What are the farm's least profitable enterprises? (weaned kids from crossbred does)
7. Is the operation "wandering"? (no direct focus or objective)
8. What is the biggest expense of the operation? (feed, veterinary supplies and fees)
9. Is the farm's marketing/advertising effective? (buyers are only at the sale barn)
10. Will the farming operation be able to withstand price decreases or cycles?
11. Why do customers not buy from the farm? (disease was a problem 2 years ago)
12. What relevant resources does the farm need? (consistent water supply, rural water line)
13. Does the farm operate its inventories efficiently? (the farm's goats in pasture#1 have more foot rot/scald problems than the farm's other pastures, family labor has off farm jobs which caused problems during kidding season, family labor can only harvest hay on the weekends, 95% of the breeding does are aged)
14. Do the farm's employees perform at their best? Are their reward incentives for good work? (bonuses, family incentives if only family labor)
15. Is labor short during kidding season?

Opportunities

1. What new technologies are available that the farm operation can use to lower costs or improve marketing? (improved forage varieties to extend seasons, tele-auctions)
2. What market trends are you observing? (prices and sales related to religious holidays)
3. What new relationships can the farm develop? (join an Internet marketing association)
4. Can the quality of products, operations, and inventory management be improved without incurring serious costs? (improved weaning weights through internal parasite control and hoof care)
5. Can a competitive edge be created over the farm's competitors? (add a value-added product, add a performance tested buck)
6. Is there an opportunity to demand better prices from suppliers? (allow the supplier to use the farm name in their advertising, put their name on the farm's handling facility during a field day)

7. Is there an opportunity to receive higher prices for production? (improved weaning weights through better genetics)
8. Can the profitability be improved by reducing parasite loads and disease control through vaccinations?
9. Can the farming operation have more predictable cash flows? (diversify into selling excess hay to spread the sales periods, add a frozen value-added product)
10. What can the farm do that it is not currently doing to improve the operation? (add guard animals, do rotational grazing, add a performance tested buck)
11. What new government policies and programs are available? (cost-share for watering systems, ponds, or fencing; rental of goats for grazing invasive plant species)
12. What interesting social patterns, population profiles, and lifestyle changes are occurring that could benefit the farming operation? (migration/immigration from traditional goat consuming populations which increases the potential for local sales, increased use of goat sausages and cheeses in recipes, local Hispanic stores in the area)
13. What interesting local events might benefit the farming operation? (county fairs, “cook-offs”, farm field days, barbecues)
14. Availability of rental land to expand the enterprise?

Threats

1. Have there been any significant changes in the industry in which the farm operates? (U.S. Animal Identification Program, loss of a local USDA processing facility, new vaccination or testing programs, i.e., scrapie programs)
2. What obstacles does the farming operation face? (lack of rural water system, drought, lack of state approval for goat milk processing and distribution, rural roads and bridges that create problems for trucks, the local creek annually floods a part of my farm)
3. What is the farm’s competition doing? (marketing breeding and show stock over the Internet)
4. Are there any, or do you anticipate any, new competitors in the farm’s market? (you estimate that 25 new breeders of show Boers will be located within 10 miles)
5. Are there any, including new, regulations in the industry that make it difficult to be profitable? (state approval for processing, collection, and sale of fresh goat milk or cheese does not exist and the state regulatory system does not plan to implement one)
6. Are international or distant competitors taking/reducing the farm’s market share? (shipped imported frozen goat meat is now available in my town - it is much cheaper and the local consumers of goat meat have switched from buying my kids to buying the imported product)
7. Is the farming operation keeping up with technological changes? (updated computers, software, and Internet)
8. Have margins been under pressure? (i.e., like in the beef cattle market at the bottom or low point of the price cycle, i.e., fuel prices have driven up the shipping costs to the market but the sales price is the same, fuel costs forced hay costs to be higher)
9. Is changing technology threatening the farm’s profitability? (my buyers now purchase frozen products over the Internet)
10. Are there governmental (or farmer cooperative) decisions that affect the farm’s production or markets? (not repairing or widening local roads and bridges, environmental

restrictions/regulations, free-trade agreements that allow frozen products to be shipped into your market)

11. Does the farm have bad debt or cash-flow problems? (credit card debts)
12. Are the employees adequately trained and motivated? (employees physically work harder but make less than their friends at the local fast food restaurant)
13. Could any of the farm's weaknesses seriously threaten the operation? (the dairy cooperative decides to drop the milk route because the roads are inaccessible during bad weather and the farm has 200 producing does)
14. Do state health regulations limit the direct sales of goat meat or milk?

Farm Business Management and Farm Transactions

Many producers do not know exactly what it costs to produce one unit of product. They know their whole-farm expenses and income, they know their profit margins (income minus direct expenses), but rarely do they segregate all costs of the business (including indirect costs) into the responsible enterprises. **Direct costs** are those easily identified with the production of a specific commodity (i.e., feed purchased for weaned kids). **Indirect costs** are those that cannot be easily identified with the production of a specific commodity (i.e., farm utilities, land rental and property taxes). The commodities sold by the farm business are responsible for paying all costs associated with their production, including direct and indirect costs. Only when all business costs are “absorbed”, can producers identify the enterprises that are making or losing money.

A farm business usually has several enterprises that produce commodities for sale. To manage the business, each enterprise should be evaluated separately with its production costs “matched” to the income it produces. These **enterprise budgets** show that the commodities sold are responsible for paying their share of the farm business expenses. For goat producers, goats are the primary commodities sold by the business, but they may be represented as different enterprises, i.e., an enterprise that sells weaned market kids or an enterprise that sells slaughter weight wethers or breeding stock does that take longer to produce.

Many of the farm's business activities are based on financial records and business transactions. A transaction is an exchange of resources. An expense transaction occurs when a farmer gives a resource (i.e., money) in exchange for another resource (i.e., feed, labor, breeding does, or a tractor). The resources gained by the farmer (i.e., feed, labor, does, or a tractor) are necessary inputs to producing the commodity (i.e., weaned kids). Some of the resources will be used in the current growing season (i.e., feed and labor) while some will be used over time (i.e., does and the tractor) and depreciated. Other resources, although used, are not expended (i.e., land). The farm family should have a separate checking account for personal (non-business) transactions. However, this is not practical for many small farmers. Because the family depends on the income from the farm to pay for many of their living expenses, “pay” family members according to the work that they do on the farm (i.e., record their labor, accounting, secretarial, and management wages). By “paying” family members who help with the farming operation, your enterprise budgets will be more accurate.

Farm business transactions can be classified:

1. By enterprise,
2. As Cash or Non-cash transactions,
3. As Cash Inflow or Cash Outflow transactions on the Cash Flow Statement, or
4. As transactions that apply to the Income Statement or Balance Sheet.

First, we will discuss the types of financial business statements and why they are important to the farm business. Financial statement analysis helps to identify the farm's financial strengths and weaknesses and to identify strategies for the future. Comparing the farm's business to its past performance each year will help you to determine the health of the farm business, whether the business is growing or shrinking financially, and how the change is occurring. At a minimum, the financial statements that are used for financial analysis are:

1. Beginning and Ending Balance Sheet – the balance sheet reports the financial position of the farm business on a specific date and summarizes the business' assets, liabilities, and the owner's equity,
2. Income Statement which summarizes the farm business' income and expenses for a period of time (a year) and measures the profit of the business, and
3. Cash Flow Statement which shows the monthly flow of money through the farm business.

Later, we will use example farms to show a method to allocate the farm business transactions to the different farm enterprises and how to fit the transactions into the financial statements.

Cash Flow Statements

Cash Flow Statements tell the farmer when, and from where, the farm received cash and how and when the cash was spent. It is a valuable tool for planning that a farmer needs to complete and analyze each year. The cash flow statement shows the farm business's monthly cash receipts (**cash inflows**, such as weaned kid sales) and cash purchases (**cash outflows**, such as purchased feed). It helps the farmer to predict and plan for the months when cash is short (the cash inflow will not cover the expenses) and months when cash is sufficient (the cash inflow can cover the expenses and when excess cash is available to purchase assets or repay loans). Creditors (including farm supply stores who carry bills and tabs) and lenders often require cash flow statements so they will know when loans can be repaid. This reduces their lending risk making them more willing to lend or run credit lines, and may lower the interest rate.

Cash flow statements can be records of past years' performances or projected for future years or periods of time (this is often called "pro forma statements" by lenders). In either case, the cash flow statement:

1. Outlines the cash inflows coming into the farming operation, usually from sales of commodities or custom labor, that is available to the farm by account (description of the income) and by month;

2. Details the cash outflows (expenses) by account (description of the expense) and by month;
3. Shows months that have cash surpluses or deficits; and
4. Reconciles the beginning cash balance with the ending cash balance.

Income Statements

The **Income Statement** provides the farmer with a measure of the success of the business in terms of net income or loss for a specified period of time, usually one year. The Income Statement (also called a **Profit and Loss Statement**) tells the farmer that from January to December how much money was earned and how much was spent to earn it.

Income Statements by Enterprise breaks the income and expenses down by the responsible enterprise so that each commodity can be individually evaluated. Groups of income and expenses are called “accounts”. Accounts are descriptions indicating what type of income or expense is represented (i.e., weaned kid sales (income) or feed (expense)). This information can be used to calculate financial ratios that further evaluate the farm business’ performance. Most lenders want to see the previous year’s income statement to determine the farm’s credit worthiness prior to making a loan. The Income Statement is a progress report of the farm business. The net income or loss for the business tells the operator whether or not the business is moving towards fulfilling the farm’s goals. Over a period of years, the income statements can tell the operator whether the business is going up or down and help the farmer to determine which enterprises are contributing to the profits or which are taking profits away.

Income accounts are presented first on the income statement. These include the sale of goats, custom work that you did for others, dividends from cooperatives, and other income sources. **Expense accounts** are presented below the income accounts. These include feed, fuel, labor, and other costs. The income statement also includes expenses that are not paid in cash such as depreciation. This is **management depreciation** that differs from **tax depreciation** by using the straight-line method which expenses the cost of an asset over its useful life. For example, a purchased tractor that is expected to be used for 15 years is depreciated as (purchase price/15) rather than the accelerated tax depreciation method. The straight-line method, which is determined based on the asset’s useful life, is a better choice for management depreciation. Once all income and expenses have been identified, the farmer can determine if the enterprise or farm business is profitable.

Accrual Adjustments

Although most farmers use the cash basis in their records and reports, accrual adjustments often give a more complete record of the farm business. What are accrual adjustments (instead of cash), and how do they relate to the income statement? **Accrual adjustments** are necessary temporary adjustments made so that the income and expenses are “matched.” In order to evaluate a specific enterprise, the production cycle must be complete (i.e., kids are weaned and ready for sale). The income and expenses are for that production cycle and enterprise. An example of an accrual adjustment is feed that has been fed to kids but has not been paid for. The amount owed should be included in the current year expenses. When the feed debt is paid the following year,

the accrual will be “reversed” by subtracting the accrual amount (the previous year’s cost) from the cash transactions which occurred in the following year when the bill was paid. If the accrual is not reversed, the expense will be double counted.

Other examples of accrual adjustments are: 1) depreciation, 2) income earned but not received (deferred income), 3) income received but not earned, 4) prepaid expenses, 4) accounts payable, 5) accounts receivable, and 6) inventory changes. In short, if the input has been used, it should be expensed whether or not it has been paid for. If the income has been earned (i.e., weaned kids were sold) or the purchased item was paid for (i.e., goat handling pen was paid for), it should be included in the current year whether or not the payment or purchase has been received. The farm manager needs an accrual-adjusted income statement to know the enterprise’s true profitability. To figure accrual adjustments for prepaid expenses use: $(\text{beginning inventory}) + (\text{purchases}) - (\text{ending inventory}) = (\text{amount used during the year})$.

Balance Sheet

The **Balance Sheet** is a snapshot of the farming operation.

1. It outlines the assets (what is owned).
2. It summarizes the liabilities (what is owed to somebody else).
3. It establishes equity (what is owned free and clear after the liabilities are paid).

What is a balance sheet? The balance sheet shows what the operation owns and what it owes. The amounts reported are a running balance of transactions from the beginning of the operation up to the date specified. For example, an operation purchased a livestock trailer for \$10,000, but still owes \$4,000 on the trailer. In the top section of the balance sheet, the total amount purchased is reported in the assets section (\$10,000) and the amount owed is reported in the liabilities section (\$4,000) at the bottom. The “net” amount that the business owns is \$6,000. The business has equity of \$6,000.

Who needs a balance sheet and why? Lenders are very interested in the balance sheet. They primarily want a business to repay the loan, but if there is an instance when repayment is not made, the lender wants substitute compensation or collateral. When a business is “over-leveraged,” its equity is small. The percentage of ownership in the business is too small, and therefore the loan is more risky. The lender may deny the loan or may increase the interest rate as their compensation for accepting more risk. Farm managers use the balance sheet to analyze the financial health of a business and for planning strategies for the farm business. Having a balance sheet is good business management.

The balance sheet lists the farm’s assets, liabilities and equity. Assets and liabilities are broken into current and non-current.

1. Current assets are those items that can be turned into cash rapidly (within the next twelve months) such as a checking account, feed inventories, feeder livestock, or raised crop inventories.

2. Non-current assets (sometimes referred to as intermediate and long term assets) are those items that are used for production and cannot be readily sold. They include breeding livestock, machinery and equipment, buildings and real estate.
3. Current liabilities are debts that must be paid within twelve months. These could include accounts payable such as a feed bill at the feed store. In addition, the current portion of non-current liabilities should be included in the current liability section. This would include any payments on non-current debt that is due during the next twelve months.
4. Non-current liabilities are debts that do not come due within the next twelve months. These would include land payments, mortgages, etc.
5. Once the total assets and liabilities have been detailed, the producer can determine his net equity. Remember that equity is calculated as total assets minus total liabilities.

Value of Operation Assets

There are two methods used to value the assets of an operation. The first method is based on the “historical cost”, or purchase price of the asset (i.e., livestock trailer). The second method is the fair market value, or the price that would be paid for the asset (i.e., livestock trailer) if it were sold today. Although lenders will want to see a balance sheet based on the fair market value, the producer should always keep the balance sheet based on the historical cost. When a lender requests a balance sheet, the producer should add the fair market value of the asset to the balance sheet. Assets that are valued based on their historical costs should be listed and valued as: the purchase price minus its accumulated depreciation.

Some assets are raised, such as breeding and replacement does. The historical cost value of the doe is the accumulated expenses (costs) incurred to get her mature enough to breed. Annual operating expenses, such as feed, after she is able to produce are included in the annual business expenses for the period.

Review questions (True or False)

1. The income statement reflects a “running balance” of items owned or owed as of a certain date.

False. The income statement tells about the net income resulting from operations within a specified range of time. The balance sheet tells about what a business owns or owes (% ownership) as of a certain date (running balance).

2. The income statement should reflect all cash purchases during the year.

False. The expense portion of the income statement should reflect the inputs actually used in producing the income reflected. The unused portion of inputs purchased (i.e., extra feed) should be held in inventory on the balance sheet. Likewise, purchases of assets, like machinery, should not be included as an expense; rather, the purchase amount should increase the balance of the non-current asset section of the balance sheet and the related current management depreciation should be included as an expense for the year.

3. Note payments are considered an expense.

False. The principle portion of the payment reduces the balance of the corresponding liability (debt) on the balance sheet, and the interest portion only is included on the income statement as an expense.

4. The balance sheet tells a producer his net income.

False. The Income Statement tells a producer about the net income. The balance sheet tells the producer about his ownership and equity in the business.

5. The entire purchase price of a tractor should be reflected as an expense (in the income statement).

False. The cost of the tractor is expensed over its useful life and is noted as a depreciation expense.

6. The Cash Flow Statement provides information about the timing and nature of all cash inflows and outflows of a farm business.

True. The Cash Flow Statement details the nature of cash inflows and outflows by account. Further, it summarizes by month each account's transactions.

7. Cash Flow Statements can be either historical or projected (pro forma).

True. Managers should produce both historical and projected (pro forma) cash flow statements.

Financial Statement Analysis

Why should a producer analyze the farm operation? A financial analysis of the farm operation is done to determine the financial position and performance of the business. The financial analysis of an agricultural business must focus on both its present position (called its **financial position**), the results of its operations, and its past financial decisions (called **financial performance**). The farm's **financial position** refers to the total resources controlled by the farm business and the total claims against those resources at a single point in time. Measures of the financial position provide an indication of the capacity of the farm business to withstand risks. It also provides a benchmark to compare with the results of future farm business decisions. The **financial performance** refers to the results of the farm business's production and financial decisions over one or more periods of time. Measures of financial performance include the impact of external forces that are beyond anyone's control (i.e., drought, state health regulations that restrict the sale of goat milk or foreign imports of frozen goat meat) and the results of the farm's operating and financial decisions made in the ordinary course of business.

How does a producer analyze his agricultural operation? There are several steps that can help farmers to analyze the farming operation. These steps should be completed in the order that they are listed.

1. Determine the objectives of the analysis . Is the analysis being conducted to determine the tax liability? Is the analysis being done to apply for credit? Is the analysis being done to determine the health/profitability of the operation?
2. Describe the business organization and its goals . Is the operation expected to make a profit? Are there measurable goals with regard to profit and growth? Who is in charge of analyzing the business?
3. Prepare financial statements. Be sure to exercise be consistent between years so the comparisons will be valid. Make sure that the data is accurate and complete. Be sure to include accrual adjustments.
4. Calculate the financial ratios and prepare historical and projected financial summaries. Again, check for consistency and accuracy.
5. Compare your farm's results to similar operations if benchmarks are available .
6. Summarize the analysis to help when reviewing at a later date . Strengths and weakness should be expressed in a clear, concise manner in a way that the reader can use and see any limitations of the analysis.

Where to start?

1. The Income Statement (Profit and Loss Statement) summarizes income and expenses for a certain time period, usually a calendar year. The last line of the income statement its "Net Income" or "bottom line" tells how much profit or loss the farm experienced. If that number is positive, the farming operation made money, if it's negative, it lost money.
2. Then look at the beginning and ending balance sheets. The balance sheet summarizes the assets and liabilities of the operation at a particular point in time. Assets are tangible property, products, or inventories, etc. that the operation either owns or is currently buying on credit. Liabilities are what the operation owes its creditors for the purchase of assets or any other financial obligations. If the dollar amount of assets exceeds the dollar amount of liabilities, the owner has equity. Equity is often referred to as Owner Equity and is the dollar amount of the operation that the owner actually owns. A word of caution...Changes in equity from year to year can be due to the way assets are valued. Consistency is the key.
3. The next step is to calculate certain **financial measures and ratios**. They are generally divided into five categories:
 - a. **Liquidity** – If the farm's current assets are sold, will they cover its current debts? Will there be funds left over?
 - b. **Solvency** – Can the farm repay all of its debts if all of its assets are sold?
 - c. **Profitability** – This measures the performance of the farming operation over a year that result from the decisions that are made regarding the use of land, labor, capital and other management resources;

- d. **Financial efficiency** ratios compare physical output to selected physical inputs and help to evaluate whether or not the farm assets are being used efficiently to produce income; and
- e. **Repayment capacity.**

Financial Measures and Ratios

1. The two balance sheet measures most often used to evaluate **Liquidity are the current ratio and working capital.**
 - a. The current ratio is the relationship between current farm assets and current farm liabilities. It is calculated as:

$$\text{Current Ratio} = \text{Total current assets} \div \text{Total current farm liabilities}$$

- b. The ratio indicates the extent to which current farm assets, if liquidated, would cover current farm liabilities. The higher the ratio, the greater the liquidity. If the ratio is greater than 1.0, the operation is considered liquid. If the ratio is less than 1.0, the operation has some degree of cash flow risk. Generally, lenders and financial analysts like to see a current ratio of 1.5 to 2.0. One consideration when calculating the current ratio is deferred taxes. Because the ratio determines the impact of selling all current assets, the tax consequence should be considered. It is therefore a more conservative approach to include deferred taxes as a current liability when calculating the ratio.
- c. Working capital is a measure of the amount of funds available after the sale of all current assets and the payment of all current liabilities at a single point in time. It is calculated as:

$$\text{Working Capital} = \text{Current farm assets} - \text{Current farm liabilities}$$

- d. Because working capital is expressed as a dollar amount, it is difficult to make comparisons between operations. Generally, working capital should be positive, but the amount needed depends on the type and size of the operation, the time of the year, and the related seasonality of the production cycle.
2. The measures for Solvency. Solvency indicates the farm business's ability to repay all of its debts if all the assets were sold. If the value of the total farm assets exceeds the value of the total farm liabilities, the farm is said to be solvent. If the sale of all the farm assets would not be enough cash to pay off all liabilities, the farm is insolvent. The difference between the value of total farm assets and total farm liabilities, referred to as net worth or owner's equity, is the most often used measure of solvency. The most realistic approach to calculating solvency (owner's equity) is to use the market-based value of the assets, including the consideration of deferred taxes. There are three commonly used **ratios to measure financial solvency are the equity-to-asset ratio, the debt-to-asset ratio, and the debt-to-equity ratio.** All three of these ratios are related and neither is necessarily preferred.

- a. The equity-to-asset ratio measures the proportion of total farm assets owned or financed by the owner's equity capital. It is calculated as:

$$\text{Equity-to-Asset Ratio} = \text{Total farm equity} \div \text{Total farm assets}$$

- b. The higher the **equity-to-asset ratio**, the more capital is supplied by the farm owner and the less is supplied by creditors. There is no exact standard for the equity-to-asset ratio that should be applied to every farm business. However, as the percent equity increases above 0.50, the owner is supplying a greater percent of the total assets in the business than the creditors. This ratio should increase over time if the owner retains farm profits and reduces debt obligations.
- c. The **debt-to-asset ratio** measures the proportion of total farm assets owed to creditors. It is calculated as:

$$\text{Debt-to-Asset Ratio} = \text{Total farm liabilities} \div \text{Total farm assets}$$

- d. The higher the ratio, the greater the risk to the farm business and those who are providing loan funds. The operator has less flexibility to respond to adverse natural or market conditions. As with the equity-to-asset ratio, there is no exact standard for every farm business. However, a debt-to-asset ratio greater than 0.50, indicates that the owners contribute less than 50 percent of the value of the farm's assets. In with this situation, creditors are often cautious about making loans.
- e. The **debt-to-equity ratio** measures the proportion of funds invested by the creditors versus the farm owners. It is calculated as follows:

$$\text{Debt-to-Equity Ratio} = \text{Total farm liabilities} \div \text{Total farm equity}$$

- f. The higher the debt-to-equity ratio, the more total capital is supplied by the creditors and less by the farm owner. This ratio is also referred to as the **leverage ratio**. **Leveraging** refers to increasing the use of debt relative to equity as a means of financing the business. Lenders are particularly interested in this ratio because it shows the proportion of the risk they are taking in comparison to the owner. Many lenders prefer the debt-to-equity ratio to be less than 1.0, with requirements varying depending on whether the liabilities are secured by current, intermediate, or long term assets. In general, the greater the loan's risk and the longer the loan's term, the lower the lender wants the debt-to-equity ratio to be.
3. The measures for **Profitability**. Profitability measures the financial performance of the operation over a period of time, usually one year, that result from the decisions made regarding the use of land, labor, capital and other management resources. **The five commonly used measures to assess profitability are net farm income, net farm income from operations, rate of return on assets, rate of return on equity, and the operating profit margin.**

- a. The **rate of return on assets (ROA)** measures the relative income generated by the assets of the farm business and is often used as an overall index of profitability. The ROA is calculated as follows:

$$ROA = \frac{(Net\ farm\ income\ from\ operations) + (Farm\ interest\ expense) - (Value\ of\ unpaid\ operator\ and\ family\ labor\ and\ management)}{Average\ total\ farm\ assets}$$

- b. Once the income statement has been developed, the net farm income from operations and the farm's interest expenses can be taken directly from the income statement. The value of unpaid operator and family labor and management must be estimated. Withdrawals from the business for family living expenses can be used to estimate unpaid operator and family labor and management. The average total farm assets can be calculated by adding total assets from the beginning balance sheet plus total assets from the ending balance sheet and dividing by 2. This ratio is often used as an overall index of profitability. It is best to use the cost basis approach when evaluating your individual farm business over time because market based values fluctuate over time. But, when comparing your farm to other farms, it is best to use the market value approach to value the farm assets, because cost basis values can cause extreme differences between farm businesses.
- c. The rate of return on assets will vary among different types of agricultural operations, but the higher the ROA, the more profitable the operation. While the ROA is most often compared across years within an operation, the ROA for any particular year can also be compared to the average interest rate the operation is currently paying or to the cost of new borrowing. If the ROA exceeds the interest rate of the new proposed borrowing, then borrowing more can be used to profitably grow the business (equity). However, if the ROA is less than the average interest rate that the operation is currently paying, then borrowed funds are not being used profitably, and adding new debt will reduce the growth of equity. Therefore, the level of profitability is an important key to the successful use of debt financing as a strategy to increase the equity of the operation. It should be noted that the ROA in most agricultural operations might seem low when compared to non-agricultural investments such as stocks and bonds. This is important and re-enforces the notion that people invest in agricultural operations for reasons other than profit and equity growth.
- d. The **rate of return on equity (ROE)** is another measure used in determining financial performance or profitability. The ROE is calculated as follows:

$$ROE = \frac{(Net\ farm\ income\ from\ operations) - (Value\ of\ unpaid\ operator\ and\ family\ labor\ and\ management)}{Average\ total\ farm\ equity}$$

- e. As with the previous calculation, the net farm income from operations and farm interest expense can be taken directly from the income statement, while the value of unpaid operator and family labor and management must be estimated. The

average total farm equity can be calculated by adding the total farm equity from the beginning balance sheet plus the total farm equity from the ending balance sheet and dividing by 2. In general, the higher the ROE, the more profitable the farm business.

4. Measures of farm **Efficiency**. There are a number of ratios that measure efficiency, which is an important component of profitability. The ratios relate physical output to selected physical inputs and help evaluate whether or not the farm assets are being used efficiently to generate income. **The efficiency measures most widely used in agricultural businesses are the asset turnover ratio and the four operating ratios: the operating expense ratio, the depreciation expense ratio, the farm interest expense ratio, and the net farm income from operations ratio.**

- a. The **Asset Turnover Ratio** measures how efficiently farm assets are being used to generate gross revenue. Consideration should be given to the way in which the assets are valued and the same approach used to calculate the ROA should be used to calculate the asset turnover ratio. It is calculated as follows:

$$\text{Asset Turnover Ratio} = \frac{\text{Gross farm revenue}}{\text{Average total farm assets}}$$

- b. The higher the ratio, the more efficiently assets are being used to generate revenue. The agricultural industry as a whole tends to have both a slow rate of asset turnover and a relatively low operating profit margin.
- c. The **Operating Expense Ratio** reflects the extent to which gross farm revenues are expended on farm operating inputs, excluding depreciation and interest. The higher the value of the ratio, the larger the proportion of gross farm revenues is needed to offset all of the operating expenses. Ratios in the 40 to 60 percent range indicate relative efficiency, with efficiency declining as the ratio rises. **The operating expense ratio is also used as one of four operational ratios.**

$$\text{Operating Expense Ratio} = \frac{(\text{Total operating expenses}) - (\text{Depreciation expenses})}{\text{Gross farm revenues}}$$

- d. The **Depreciation Expense Ratio** measures the proportion of gross farm revenues that are represented by the depreciation expense (a non-cash expense). A relatively low depreciation expense ratio could indicate little difficulty in making planned and timely replacements of capital assets, or it may indicate that capital assets (usually farm machinery) are relatively old. It should be noted that IRS depreciation rules could distort this ratio and you should use management depreciation. **This is also used as one of four operational ratios.**

$$\text{Depreciation Expense Ratio} = \frac{\text{Depreciation expense}}{\text{Gross farm revenues}}$$

- e. The **Interest Expense Ratio** measures the proportion of gross farm revenues that are required to cover the farm's interest expenses. Large interest expense ratios are characteristic of highly leveraged operations. As a general rule, the interest expense ratio should be less than 0.15. Interest expense ratios over 0.15 indicate that farm's interest expenses are a large proportion of its gross revenues and that the farm is likely suffering "financial stress." The farm interest expense ratio has important implications for the profitable use of debt financing and financial risk. As indicated in earlier discussions of profitability, if the rate of return on farm assets (ROA) exceeds the cost of debt financing, increasing debt can increase the growth in farm equity. **The interest expense ratio is also used as one of four operational ratios.**

$$\text{Interest Expense Ratio} = \frac{\text{Total farm interest expense}}{\text{Gross farm revenues}}$$

- f. The **Net Farm Income from Operations Ratio** measures the net farm income as a proportion of its gross revenues. Thus, it reflects the proportions of gross farm revenues that remain after the farm operating expenses have been paid. It is calculated on a before-tax basis. **The net farm income from operations ratio is also used as one of four operational ratios.**

$$\text{Net Farm Income from Operations Ratio} = \frac{\text{Net farm income from operations}}{\text{Gross farm revenues}}$$

5. **The four operational ratios discussed above (b. through e.), when added together, should equal to 1.0 or 100 percent.** The producer should always keep in mind that all of these ratios can vary widely between different operations and from year to year within an operation due to different types of farms and different marketing and production systems. Therefore, it is important that farmers compare projected values for the coming year to the most recent averages for their own operation.

Review Questions

1. Two measures used to assess profitability are the rate of return on assets and the rate of return on equity. (True or False) **True.**

Conclusion

Analyzing the level of key financial measures and their relationships can provide valuable insights to farm and ranch managers. Comparisons of measures year to year can signal whether the farm business' financial performance is satisfactory and whether its financial position is improving or deteriorating.

Suggested Assignments

Below are links to two assignment sheets, *Assignment Sheet 1 - SWOT Analysis* and *Assignment Sheet 2 - Conduct an Inventory of Goat Farm Resources*, that may assist in your farm business planning. Completion of these sheets is optional and is not needed to complete or pass the post test.



[Assignment Sheet 1 - SWOT Analysis](#)



[Assignment Sheet 2 - Conduct an Inventory of Goat Farm Resources](#)

Example Farm Business Planning Spreadsheets (Excel format)

Below are links to three files that contain sample spreadsheets that may assist you in your farm business planning.



[Transaction Worksheets](#)

Worksheets for Cash Outflows needed for the Income Statement



[Business Report Worksheets](#)

Income Statement worksheets, Enterprise Budget worksheets, Cash Flow worksheet



[Allocation Worksheets](#)

Allocation worksheets for machinery and equipment and other support centers

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