

People, Partnerships, and Communities

The purpose of the People, Partnership, and Communities series is to assist The Conservation Partnership to build capacity by transferring information about social science related topics.

Using Financial Budgets in Conservation

USDA Natural Resources Conservation Service

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What are budgets?

Financial budgets display information about the income gained and, expenses spent, by a business. The typical financial budgets used in conservation planning include multi-enterprise budgets, enterprise budgets, and partial budgets.

Multi-enterprise, or complete, budgets display income and expense information for all of the enterprises (i.e. wheat, corn, cow-calf) engaged in by a business. Enterprise budgets display income and expense data for only one enterprise. Many Cooperative Extension budgets are enterprise budgets. Partial budgets show only the financial changes (i.e. additional or reduced income, additional or reduced expenses) occurring in a business that result from changes in capital investments or management methods.

Budgets are usually calculated and displayed using standard methods and templates that can be found in many farm or business management books and manuals. A typical enterprise budget looks as follows:

Table 1. Typical Enterprise Budget

Description: Convention Tillage, 200-400 acre operation						
Income						
	Item	Units	Price/Unit		Yield	Total
<i>Corn</i>						
	Grain Yield	bu	\$2.90		100	\$290.00
Gross Income						\$290.00
Variable Expenses						
	Item	Units	Cost/Unit	Amount	Times	Total
<i>Ground Preparation</i>						
	Tractor - 120 HP	acre	\$ 7.24	1	1	\$ 7.24
	Plow Moldboard-4-16	acre	\$ 2.12	1	1	\$ 2.12
<i>Finish Ground Preparation</i>						
	Tractor - 120 HP	acre	\$ 27.73	1	2	\$55.46
	Disk - Tandem 14'	acre	\$ 0.34	1	1	\$ 0.34
	Springtooth Drag	acre	\$ 0.12	1	1	\$ 0.12
<i>Planting</i>						
	Tractor - 120 HP	acre	\$ 1.09	1	1	\$ 1.09
	Planter - 4-30	acre	\$ 1.43	1		\$ -
	Seed	bushels	\$ 65.00	0.25	1	\$16.25
	Fertilizer - 16-20-20	pounds	\$ 0.60	225	1	\$135.00
	Herbicide - Atrazine	pounds	\$ 0.57	4	1	\$ 2.28
	Insecticide - material	pounds	\$ 7.00	1.1	1	\$ 7.70
<i>Pest Management</i>						
	Tractor - 120 HP	acre	\$ 1.09	1	3	\$ 3.27
	Sprayer - Pull type	acre	\$ 0.10	1	1	\$ 0.10
	Herbicide - Postemerge	pints	\$ 8.50	1	1	\$ 8.50
	Cultivator - 4 row	acre	\$ 0.72	1	1	\$ 0.72
<i>Harvest</i>						
	Combine	acre	\$ 11.91	1	1	\$11.91
	Truck - Custom rent	acre	\$ 5.00	1	1	\$ 5.00
Total Variable Expenses						\$257.10
Gross Margin						\$ 32.90

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Table 1 continued

	Item	Units	Cost/Unit	Amount	Times	Total
Fixed Expenses						
<i>Equipment</i>						
	Tractor - 120 HP	acre	\$4.00	1	7	\$28.00
	Plow Moldboard - 4-16	acre	\$3.17	1	1	\$3.17
	Disk - Tandem 14'	acre	\$1.17	1	1	\$1.17
	Planter - 4-30		\$4.06	1	1	\$4.06
	Springtooth Drag	acre	\$0.45	1	1	\$0.45
	Sprayer - Pull type	acre	\$0.20	1	1	\$0.20
	Cultivator - 4 row	acre	\$1.00	1	1	\$1.00
	Combine	acre	\$2.70	1	1	\$2.70
Total Fixed Expenses						\$40.75
Net Profits						\$(7.85)

This example shows the typical contents of an enterprise budget: yield, output price, gross enterprise income, inputs, input prices, variable expenses, fixed cost inputs, fixed cost expense, and net profit.

A typical partial budget appears as follows:

Table 2. Typical Partial Budget

Description:		Benchmark: continue present nutrient management and pest management programs Alternative: adopt nutrient management and pest management plans								
Income	Item	Units	Price/Unit	Benchmark			Alternative			Difference
				Amount	Times	Total	Amount	Times	Total	
<i>Corn</i>	Grain Yield	bu	\$2.90	115		\$333.50	120		\$348.00	\$14.50
Variable Expenses				Benchmark			Alternative			
	Item	Units	Cost/Unit	Amount	Times	Total	Amount	Times	Total	Difference
<i>Nutrient Management</i>										
	Fertilizer,									
	Pre-plant 16-20-20	tons	\$120.00	0.5	1	\$60.00	0.15	1	\$18.00	\$(42.00)
	Fertilizer,									
	Post-plant 16-20-20	tons	\$120.00	0	0	\$ -	0.15	1	\$18.00	\$18.00
<i>Pest Management</i>										
	Scouting -									
	threshold reports	acre	\$ 6.00	0	0	\$ -	1	2	\$12.00	\$12.00
	Insecticide - material	# a.l.	\$ 15.00	0.15	3	\$ 6.75	0.15	1.5	\$ 3.38	\$(3.38)
	Insecticide - application	each	\$ 5.00	1	3	\$15.00	1	1.5	\$ 7.50	\$(7.50)
Change in Variable Expenses										\$ (22.88)
Net Change in Profits										\$ 37.38

This example shows that changing corn nutrient and pest management practices can increase income by \$15 per acre while decreasing expenses by \$22.88 per acre. The example also demonstrates how typical conservation practices, such as Nutrient Management and Pest Management, can be readily displayed using standard financial budget formats.

What do the terms found in typical financial budgets mean?

Common financial terms used in budgets include:

- **Gross Income** - The total output (i.e. corn yield) of a good or service produced by a business multiplied by the price/unit of the output (i.e. \$2.90/bushel) equals *gross income* or *total revenue*. Total output, or yield, is directly related to how well a business is run. Good businesses usually attempt to maximize profits, rather than maximize yields.
- **Variable Expenses**: The costs of inputs (materials, labor, equipment) used in a business which change as more output is produced. These are often referred to as operating costs and include such items as fertilizer, water, pesticides, labor, fuel, and seed. The inputs that make up variable expenses are the principal items that a business manager can readily change during a season. These are also prime determinants of profitability. Conservation practices that focus on “management changes” usually attempt to improve the use of variable expense-type inputs.
- **Gross Margin**: Total gross income minus total variable expenses equals *gross margin*.
- **Fixed Expenses**: The costs of inputs which do not readily change as the amount of output produced changes. These are often referred to as capital assets and include such items as equipment, buildings, land, and certain administrative expenses (i.e. insurance, taxes). Businesses deduct depreciation expenses for fixed-expense type assets on their yearly income taxes. The purchase of a fixed expense-type good is often referred to as a capital investment. The person decid-

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Sources of Information

The mechanics of completing financial budgets can be learned from several sources: The Economics of Conservation Planning course (offered through NEDS), state economists, Cooperative Extension agents, loan or credit agents, business managers, college farm or business management courses, and many farm or business management texts and manuals.

Many software programs can be found that automate the completion of budgets. The *Cost and Return Estimator*, or *CARE*, is an NRCS developed budget generator that has been used for years. *CARE* budgets for throughout the United States are available at the following web site: <http://waterhome.tamu.edu/care/index.html>. Many Cooperative Extension Service state offices also have automated budget generators along with sets of completed budgets. The NRCS Social Sciences Institute has developed a prototype software program, the *Business Builder*, which employs modern Windows technologies to generate budgets. Look for release of this product during 1998.

The latest information about budget development in your state can be obtained from your state economist or Cooperative Extension office.

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ing on the investment weighs the expected stream of benefits associated with the asset over its life against its associated costs (i.e. installation cash, installment payments). Some conservation practices that involve fixed expenses qualify for accelerated depreciation (and thereby can reduce income tax expenses).

- *Net Profits*: Gross margin minus total fixed expenses equal *net profits*.

What are the purposes of budgets?

Financial budgets are usually used in business planning. Farmers use them to help decide which crops to grow, how many acres to farm, and which investments make sense. Creditors use them to see if business managers can repay their loans. Consultants use them to help understand the financial impacts of changes they may recommend. Analysts use them to understand general economic trends and current financial conditions.

What can a financial budget tell a planner?

Financial budgets offer one of the best, standardized templates for recording and displaying the production activities of local businesses and industries. During the benchmark phase of planning they can tell planners very detailed information about the timing, quantity, and quality of the inputs used in production. How many head of cattle do they put on those pastures? For how long? What tillage practices are being used? Which pieces of equipment are already owned? Are output prices low this year? If so, does it make sense to push for additional investments in conservation?

During the formulation and evaluation stage of planning, partial budgets can be used to document the financial impacts of conservation alternatives upon businesses. Budgets can help conservation planners change conservation alternatives that are too expensive. They can help planners communicate with business operators who are strongly interested in costs and profitability.

Budgets can help conservation planners to employ "participatory" or "adaptive" management styles of planning. Completion of budgets usually requires assistance from the farmers or ranchers engaged in the business being studied. Budget development provides an excellent means for planners to interact with their farming or ranching customers. The active participation of farmers and ranchers in planning can lead to the development of much sounder, more practical conservation alternatives.

A budget can alert a planner about the need for better benefits information.

Budgets can show planners, farmers, and ranchers that short-term expenses do not always align with long-term benefits. The planner should then assemble non-financial benefits information that will help communicate a sound conservation message to their customer.

When are budgets inappropriate?

Budgets usually require a fairly substantial commitment of time and effort to complete. This commitment of resources is not justified for many conservation projects. Completion of budgets may not be appropriate under the following instances:

- *Small number of users*: Budgets are usually prepared so that the financial information can be shared with several farmers or ranchers. Completion of budgets may be inappropriate if the data can only be used with a small number of growers.
- *Voluntary, incentive-based conservation programs*: These programs usually find it sufficient to let operators know about the financial incentives being offered by the program. They leave it up to the grower or rancher to make decisions about the full financial impacts upon their business from participation in the program. Most NRCS programs fit in this category.
- *Incentives offset costs*: Budgets are not usually needed when a conservation project pays all, or most, of the costs needed to install and operate a conservation system.
- *Small, or easily understood financial impacts*: Many conservation practices do not have large financial impacts. Other practices have impacts that can be understood without having to complete financial budgets.
- *Confidentiality*: Budgets should not be completed if the information violates the confidentiality of the business operators supplying the information. Cooperative Extension budgets are good examples of budgets that do not usually violate the confidentiality of the people supplying the data.
- *Business operators don't care*: Budgets should not be completed if business customers don't particularly want the information. Reasons for not wanting financial information can vary widely.

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