Whole Farm Budgeting for Grain Farms

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Purpose and Use of a Whole Farm Budget

1. Budgeting is a look ahead at what the farm business is expected to be at the end of a future period.

2. The whole farm budget combines all the enterprises and resources of the farm or ranch to provide an overall picture of the expected net returns for the planning period.

3. Uses of the whole farm budget are:

    a. Provide a basis for preparation of net worth statements, income statements, and cash flow statements in the absence of farm records.

Purpose and Use of a Whole Farm Budget (continued)

b. Provide a basis, in conjunction with actual records, for the projection of net worth statements, income statements, and cash flow budgets for a future production period(s).

c. Provide a basis for assessing the financial effects of changes in crop enterprises or production practices when actual records are not available.

Parts of a Whole Farm Budget

1. Land Use Plan

    a. The land use plan should account for all of the farm's land resources.

    b. All uses should be included—even nonproductive and non used land. The "total acres" should agree with the known whole farm land area.

    c. The land use plan reflects the use of all land in the farm for a specified period, usually one year.

    d. If two crops are taken from the same acreage, both crops are listed, but ***don't double count the acres***. For example, barley straw or aftermath grazing is treated as a second crop.

Land Use Plan and Crop Use Plan

Crop	Beginning Inventory			Production			Units for		Planned Sales			Ending Inventory		
	Units	Price	Value	Acres	Yield	Total	Feed	Seed	Units	Price	Value	Units	Price	Value
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Parts of a Whole Farm Budget (continued)

e. Yields used in the plan should be realistic for the planning period under consideration. If considering a particular year, the yields might be adjusted for any non-normal conditions.

f. Prices should be realistic for the planning period.

Joe Average's Farm

1. Joe Average wants to complete his year 2000 Crop Use Plan.

2. He is doing this in December after he has already planted his winter wheat.

3. In the year 2000, Joe Average plans to plant the following crops:

   Winter wheat on fallow
   Spring wheat on fallow
   Recrop winter wheat
   Recrop barley

   He will have his usual acreage of fallow.

4. Let's complete this form.

Land Use Plan and Crop Use Plan

Crop	Beginning Inventory			Production			Units for		Planned Sales			Ending Inventory		
	Units	Price	Value	Acres	Yield	Total	Feed	Seed	Units	Price	Value	Units	Price	Value
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Winter Wheat on Fallow	*8,400*	*$2.20*	*$18,480*	*420*	*40*	*16,800*	*0*	*600*	*16,000*	*$2.70*	*$43,200*	*8,600*	*$2.70*	*$23,220*

NOTE: For each crop, the sum of columns 2 and 7 must equal the sum of columns 8, 9, 10 and 13.

Let's Review the Calculations

Beginning Inventory (#2)	8,400
Production (#7)	16,800
	25,200
Units for Feed (#8)	0
Units for Seed (#9)	600
	24,600
Planned Sales (#10)	16,000
Ending Inventory	8,600

Note that Joe Average values winter wheat in his beginning inventory relatively low compared to his anticipated sales price. He evidently expects some market improvements.

Land Use Plan and Crop Use Plan

Crop	Beginning Inventory			Production			Units for		Planned Sales			Ending Inventory		
	Units	Price	Value	Acres	Yield	Total	Feed	Seed	Units	Price	Value	Units	Price	Value
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Winter Wheat on Fallow	*8,400*	*$2.20*	*$18,480*	*420*	*40*	*16,800*	*0*	*600*	*16,000*	*$2.70*	*$43,200*	*8,600*	*$2.70*	*$23,2200*
Roads & Fencelines				*160*										
Spring Wheat on Fallow	*0*	*0*	*0*	*840*	*36*	*30,240*	*0*	*840*	*29,400*	*$3.30*	*$97,020*	*0*	*0*	*0*
Fallow Acres				*1260*										
Winter Wheat	*3,000*	*$2.20*	*$6,600*	*180*	*35*	*6,300*	*0*	*0*	*5,000*	*$2.70*	*$13,500*	*4,300*	*$2.70*	*$11,610*
Barley Recrop	*5,900*	*$1.55*	*$9,145*	*300*	*44*	*13,200*	*0*	*300*	*13,80*	*$1.90*	*$26,220*	*5,000*	*$1.90*	*$9,500*
2000 Wheat AMTA				*[1224*	*32]*					*$0.57*	*$22,325*			
200 Barley AMTA Payments				*[225*	*35]*					*$0.24*	*$2,142*			
Anticipated 2000 MLA Payments											*$24,467*			
Farmstead				*40*										
TOTALS			*$34,225*	*3,200*							*$228,874*			*$44,330*

NOTE: For each crop, the sum of columns 2 and 7 must equal the sum of columns 8, 9, 10 and 13.

Other Entries on the Land Use Plan and Crop Use Plan

In addition to the information on the production, planned sales, and inventory levels for each crop, Joe Average has also estimated his government payments.

- Joe Average has 1,440 wheat contract acres. He also has 300 barley contract acres.
- Joe Average, because of 1999 tax-year considerations, did not take his 2000 AMTA payments in 1999.
- Joe Average has high hopes that he will receive MLA payments in 2000 equal to his AMTA payments.
- Joe totals up his inventory values
- He includes the government payments in his anticipated sales total.

Parts of a Whole Farm Budget
(continued)

2. Livestock Plan

The livestock plan accounts for the beginning inventory of livestock, purchases, animals born, replacement of breeding livestock, losses, home use, sales, and ending inventory.

3. Livestock Feed Plan

The livestock feed plan specifies the necessary total feed requirements for each class of livestock for the planning period. The feeds necessary should be adequate to provide for the livestock output budgeted in the livestock plan.

Livestock Plan

Kind or Product	Beginning Inventory		Purchases				Born	Transfer		Loss	Home Use	Sales				Ending Inventory	
	No.	Value	No.	Wt.	Price	Value		In	Out			No.	Wt.	Price	Value	No.	Value
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

NOTE: On each line, the sum of numbers in columns 2, 4, 8 and 9 must equal the sum of numbers in columns 10, 11, 12, 13 and 17. The total in column 9 must equal the total in column 10.

Livestock Feed Plan

Type of Animal	No.	AU Per Head	Period To Be		Feeds Required							
			Grazed	Fed	Range AUM	Stubble AUM	Straw TON	Hay TON	Barley Cake-Lbs.	Salt & Minerals-Lbs.		
TOTAL REQUIRED												
TO BE RAISED												
TO BE PURCHASED												
COST OF FEED PURCHASED					$	$	$	$	$	$	$	$

Parts of a Whole Farm Budget (continued)

4. Inventory of Depreciable Assets

   a. The cost of any item that tends to wear out, but has a life expectancy of more than one planning period should be depreciated or prorated over time.

   b. Depreciable assets include machinery, tractors, trucks, grain storage, machine shops, and tools.

Inventory of Depreciable Assets

Type of Asset	Size or Capacity	Acquired		Estimated		Annual Deprec.	Present Value
		Date	Cost	Salvage Value	Yrs. of Life		
TOTAL	XXXXXXXX	XXXXXXX	$	XXXXXXXXX	XXXXX	$	$

Parts of a Whole Farm Budget (continued)

c. The date acquired and the original cost are shown. Average annual depreciation is estimated using the straight line method.

$$\text{Annual Depreciation} = \frac{\text{Original Cost} - \text{Salvage Value}}{\text{Number of Years of Expected Life}}$$

Inventory of Depreciable Assets

Type of Asset	Size or Capacity	Acquired		Estimated		Annual Deprec.	Present Value
		Date	Cost	Salvage Value	Yrs. of Life		
Sprayer	*60ft*	*1996*	*$4,900*	*0*	*6*	*$817*	*$1,632*
Pickup	*3/4 4x4*	*1994*	*22,500*	*1,500*	*10*	*2,100*	*9,900*
Air Seeder	*42ft*	*1998*	*50,700*	*0*	*15*	*3,380*	*43,940*
4WD Tractor	*260hp*	*1996*	*115,400*	*0*	*20*	*5,570*	*93,120*
Combine	*30ft*	*1997*	*155,100*	*0*	*9*	*17,233*	*103,401*
Truck	*350bu*	*1988*	*27,000*	*0*	*18*	*1,500*	*9,000*
Truck	*350bu*	*1990*	*27,000*	*0*	*18*	*1,500*	*12,000*
2WD Tractor	*80HP*	*1988*	*49,700*	*0*	*30*	*1,660*	*29,780*
Tool Bar	*42FT*	*1996*	*34,900*	*0*	*15*	*2,325*	*27,895*
TOTAL	**XXXXXX**	**XXXXX**	***$487,200$***	**XXXXXXX**	**XXX**	***$36,085***	***$330,668***

Years of Useful Life

$$\text{Years of Useful Life of Farm Machinery} = \frac{\text{Estimated Life of Machine}}{\text{Estimated Annual Hours of Use}}$$

$$\text{Years of Useful Life of Combine} = \frac{2{,}000 \text{ Hours}}{213 \text{ hours/year}}$$

$$= \textbf{9 years}$$

Parts of a Whole Farm Budget
(continued)

5. Estimate of Operating Expenses

   a. Estimates of operating expenses should be consistent with the land use plan, the livestock plan and the livestock feed plan.

   b. Expenses may be estimated by considering the technical operations and cultural practices. Enterprise budgets provide one source for this information.

   c. Expense summaries from records of prior years are very useful unless major changes in the operation are projected. Individual expense items may have to be adjusted for shifts in input prices, i.e., fuel prices.

Estimate of Expenses for One Planning Period

Item	Amount
TOTAL EXPENSES	**$**

Parts of a Whole Farm Budget (continued)

d. Capital purchases are not included.

e. A draw for family living is not included.

Estimate of Expenses for One Planning Period

Item	Amount
Seed clean and treatment	*$2,490*
Herbicides and other chemicals	*19,265*
Fertilizer	*24,350*
Crop insurance	*13,645*
Fuel, oil and lubricants	*17,710*
Repairs	*17,320*
Equipment rental	*1,200*
Property taxes	*9,300*
Utilities and supplies	*3,600*
Farmstead rental	*12,000*
Insurance	*1,500*
Interest on operating loan	*1,878*
Interest on machinery debt	*15,145*
Interest on land debt	*10,000*
TOTAL CASH	*$149,403*
Depreciation	*$36,085*
TOTAL EXPENSES	*$185,488*

Parts of a Whole Farm Budget (continued)

6. Estimated Balance Sheet

   a. The balance sheet, or net worth statement provides a financial picture of the farm or ranch on a particular day. It is composed of three parts:

      Assets—those items owned by the farm.

      Liabilities—claims by creditors and others against the assets of the farm.

      Net Worth—sometimes called owner's equity—it is the difference between assets and liabilities.

Estimated Balance Sheet

Assets

	Beginning	Ending Date
Total Current Assets		
Total Non-Current Assets		
Total Assets		

Liabilities

Total Current Liabilities		
Total Non-Current Liabilities		
Total Liabilities		
Net Worth (Assets minus Liabilities)		

Parts of a Whole Farm Budget (continued)

b. Assets are typically listed first on the balance sheet. There are three asset categories:

Current Assets—cash or inventory items expected to be converted to cash in the next 12 months as part of the ongoing activities of the farm or ranch.

Parts of a Whole Farm Budget
(continued)

Non-Current Assets–
include assets used in the operation of the farm or ranch. Examples include machinery, equipment, real estate, buildings, and improvements permanently attached to the land.

Parts of a Whole Farm Budget
(continued)

c. Personal Assets

When estimating the financial performance of the farm or ranch, non-farm assets should be identified separately.

Parts of a Whole Farm Budget
(continued)

d. Liabilities are obligations owed to others. They are generally divided into the same categories that are used for assets.

Current Liabilities— obligations owed by the business that should be paid within the next 12 months. This would include operating loan balances and the current portion of intermediate and long term liabilities.

Parts of a Whole Farm Budget
(continued)

Non-Current Liabilities– obligations associated with non-current assets. Care must be taken to not double count the current portion of these liabilities listed separately in the current liability section.

e. Net worth is the difference between assets and liabilities.

Estimated Balance Sheet

Assets	**1-1-00**	**12-31-00**
	Beginning	**Ending Date**
Cash (end balance sheet prior year) and cash flow	*$6,500*	*$18,646*
Winter wheat (land use plan)	*25,080*	*34,830*
Barley (land use plan)	*9,145*	*9,500*
Total Current Assets	*$40,725*	*$62,976*
Cropland (3,000 acres @ $340)	*$1,020,000*	*$1,020,000*
Roads, fencelines (160 @100)	*16,000*	*16,000*
Machinery inventory (Inv. of Depr. Assets)	*330,668*	*294,583*
Total Non-Current Assets	*$1,366,668*	*$1,330,583*
Total Assets	*1,407,393*	*1,393,559*
Liabilities		
Income tax due	*$13,500*	*$13,500*
Current portion intermediate and long term debt	*23,825*	*25,500*
Total Current Liabilities	*$37,325*	*$39,000*
Machinery debt	*$100,050*	*$90,450*
Land debt	*115,675*	*100,275*
Total Non-Current Liabilities	*$216,225*	*$190,725*
Total Liabilities	*$253,550*	*$229,725*
Net Worth (Assets minus Liabilities)	*$1,153,843*	*$1,163,834*

Parts of a Whole Farm Budget (continued)

7. **Estimated Income Statement**

   a. The estimated income statement summarizes the receipts and expense portions of the whole farm plan.

   b. Gross receipts are brought forward from the land use plan (and the livestock plan).

   c. Changes in inventory from the land use (and livestock plan) are also listed.

Estimated Net Farm Income

Gross Receipts

Total Receipts	

Expenses

Total Expenses	
Net Farm Income	

Parts of a whole Farm Budget
(continued)

d. Expense items come from the estimate of expenses and the inventory of depreciable assets.

e. The difference between gross receipts and expenses is net farm income.

f. Uses of net farm income

Net farm income represents a return to family supplied resources. These resources include family supplied labor and management, and equity capital. Allocating net farm income among these three categories is somewhat arbitrary. For example, a higher allocation to labor would lead to a lower return on equity capital.

Estimated Net Farm Income

Gross Receipts

Winter Wheat Sales (Land use plan)	*$56,700*
Spring Wheat Sales (Land use plan)	*97,020*
Barley Sales (Land use plan)	*26,220*
Government payments (Land use plan)	*48,934*
Change in grain inventory (Land use plan)	*10,105*
Total Receipts	*$238,979*

Expenses

Cash expenses	*$ 149,403*
Depreciation	*36,085*
Change in inventory of inputs	*0*
Total Expenses	*$185,488*
Net Farm Income	*$ 53,491*

Parts of a whole Farm Budget (continued)

Net farm income reflects funds available for family living withdrawals, income taxes, and changes in net worth.

Reconciliation of the Financial Statements

The whole farm budget includes beginning and ending net worth statements and an income statement. These three statements are linked together and can be checked for consistency.

Ending Net Worth	_____	*(from Estimated Ending Balance Sheet)*
Less Beginning Net Worth	_____	*(from Beginning Balance Sheet)*
Net Worth Change		_____
Net Farm Income	_____	*(from Estimated Income Statement)*
Less Withdrawals for:		
Family Living	_____	*(from Cash Outflows)*
Income Taxes	_____	*(from Cash Outflows)*
Should Equal Net Worth Change		_____

Cash Summary

$6,500	Initial Cash on Hand (from Beginning Balance Sheet)
228,874	Cash Portion of Gross Receipts (from Estimated Net Farm Income Statement)
-149,403	Cash Portion (From Estimate of Expenses)
123,825	Current Principal Portion of Current and Non-Current Liabilities (from Beginning Balance Sheet)
-30,000	Family Living Withdrawals (from Cash Outflow)
-13,500	Income Tax Payable in 2000 (from Beginning Balance Sheet)
18,646	Ending Cash Balance (from Ending Estimated Balance Sheet)

Reconciliation of the Financial Statements

The whole farm budget includes beginning and ending net worth statements and an income statement. These three statements are linked together and can be checked for consistency.

Ending Net Worth	*$1,163,834*	
Less Beginning Net Worth	*$1,153,843*	
Net Worth Change		*$9,991*
Net Farm Income	*$ 53,491*	
Less Withdrawals for:		
Family Living	*$ 30,000*	
Income Taxes	*$ 13,500*	
Should Equal Net Worth Change		*$9,991*

MONTANA STATE UNIVERSITY - BOZEMAN

FARM and RANCH MANAGEMENT DECISION SUPPORT SOFTWARE

Website:
www.montana.edu/wwwextec/software/software.htm

Spreadsheet Templates

Due to the time and effort required to convert spreadsheets from one format to another, older spreadsheets in Lotus and Quattro Pro will no longer be supported. As an old spreadsheet is updated in Excel, the Lotus and Quattro Pro versions will be removed from this list.

All DOS version were removed on 10-10-99. Thank you for your continued use of these templates. If you have questions or comments, please send me an e-mail (see bottom of this page).

Select (click on) the type of spreadsheet you have from this list.

Excel for Windows, version 5.0 or greater.	Quattro Pro for Windows, version 5.0 or greater.
Lotus for Windows, version 4.0 or greater.	Lotus for DOS, version 2.x or greater (WK1 file format).

If you have Microsoft Works or a similar spreadsheet for DOS or Windows, select the Lotus for DOS templates. Most of the these will load into a Windows based spreadsheet like Microsoft Works.

Excel for Windows Templates, version 5.0 or greater.

To down load a file, hold down the shift key and click on the file name. Specify the drive and directory where you wish the file to be stored on your machine.

BEPRICES	This file allows the calculation of break-even prices for a wide range of starting prices and costs of gain for feeder livestock.
CALFWINT	Calculates the profitability of putting calves on feed through the winter period. Updated November of 1998
CAPINV	Uses capital investment analysis to analyze alternative potential investments.
NEW 8/13/99 CashFlow Simple	This is a simple cash flow statement that does not require the user to information on supporting schedules which is then transferred from the schedule to the cash flow statement. See below for a more detailed versison of a cashflow, with schedules.
CCFS	Combines the COWCOST, CALFWINT, and GRASSFAT programs into one program that analyzes the economic profitability of the three phases of commercial beef production faced by cow calf producers in the north west. Calculates percentage share for leases based on cost contributions approach, if desired. Updated October 10, 1999. Also converted to Excel 97
COSTPROD	Allows a producer to calculate the cost of production for small grain crops. He must know what his machinery costs are. See MACHCOST, CUSTBRKE, and MACHINES to calculate machinery costs.
COWCOST	Calcualates the ownership and operating costs for a commercial beef enterprise.

CROPLEAS	Calculates lease arrangements using a contributions approach to leasing. This program calculates Crop Share, Cash, and Flexible Cash Lease rates. Updated October 10, 1999. Also converted to Excel 97
CUSTBRKE	Calculates the cost of owning and operating machinery for one powered piece of equipment and up to two pulled implements. It also calculates the break-even acreage a producer must have in order to own a piece of machinery and the custom rate a producer would charge if he were to use a piece of machinery to custom farm for someone else.
FFSGEXAM	This program illustrates the linkages between the beginning and ending balance sheet, the cash flow statement and the income statement. This is concept software only and is intended for users who want to learn how integrated financial statements work.
GRASSFAT	Calculates the profitability of putting steers or heifers on summer pasture. Calculates the break-even prices necessary to cover all production costs and also calculates the break-even purchase price with a given sales price. Can be used in conjunction with CALFWINT to estimate break-even prices necessary for yearlings.
HERD	Calculates performance statistics for beef herds of up to 145 cows. Follows Beef Improvement Federation performance guidelines. Calculates one year of performance statistics and does not keep cow histories.
LEASPURC	The program looks at the economic considerations for three options for accomplishing a particular task, out right purchase, straight lease or a lease with an option to buy and renting. The net present value of these three options are compared to determine the lowest cost option. Updated in October 1999. Also converted to Excel 97
MACHCOST	Calculates the cost to own and operate 1 piece of machinery. It can be any pulled implement or powered equipment.
MACHINES	Calculates the cost of production for up to 9 enterprises with full calculation of the cost of owning and operating machinery.
8/1/99 MARGIN	This is a simple spreadsheet that will help producers understand margin accounting when trading futures contracts. It is designed to show the basic steps in margin accounting but is not detailed enough to show all possible transactions that can take place in a margin account. Requires Excel 97 or newer.
8/1/99 MKTGRAIN	A spread sheet that will allow you to analyze the price protection available from using the futures and options markets for small grains. This spreadsheet can also be used as an educational tool to learn how the futures and options markets work. Allows individuals to calculate cost of production calculations and includes basis data for Montana calves from 1992 to present. Requires Excel 97 or newer.
8/1/99 MKTLVSTK	A spread sheet that will allow you to analyze the price protection available from using the futures and options markets for livestock. This spreadsheet can also be used as an educational tool to learn how the futures and options markets work. Allows individuals to calculate cost of production calculations and includes basis data for Montana small grains. Requires Excel 97 or newer.
NOXSWEED	Economic analysis of weed control for weeds that take a long period of time to eliminate. Uses a capital investment analysis to analyze the economic feasibility of controlling noxious weeds on range land. Financial feasibility is not covered by this program.

PARTBUD	This program is a general purpose partial budget. Allows both economic and financial analysis of small changes in an operation to determine profitability and financial feasibility.
STRGRAIN	Calculates the cost and break-even prices for storing grain for six different storage periods for both existing and new on farm storage and for commercial storage.
TRUCKS	Calculates the number of hours of use for individual trucks given the way they are used on a particular operation.
TVMSHEET	This program combines the four programs that deal with the time value of money. The programs deal 1) annuities where you know what you want at some point in the future and you must calculated how to reach that goal, 2) you know what you have currently to invest (fixed sum or an annuity) and you want to know how much it will be in the future, 3) detailed loan amoritization schedules, 4) quick comparisons of various loan amoritization scenarios. (Updated 9-26-98)
VARICOST	This program calculates the variable cost of production for small grain crops. Useful for short run decisions.
WFBUDGET	This program allows the specification of production intentions for an entire operation. It includes three simple plans, a Land Use Plan, a Livestock Plan and a Livestock Feed Plan.
Note: BSBEGIN, BSEND, CASHFLOW, OWNREQTY, and RATIOS are designed for use as a package of templates. They contain links to transfer information from one template to another to provide a "rigoruous" financial performance analysis. These templates can however be used individually if the "linked" information is not desired.	
8/11/99 Financial Statements	The five financial statement spreadsheets listed directly below (BSBegin, BSEnd, CashFlow, OwnrEqty, and Ratios) are combined into one spreadsheet. This file is rather large, 630K, but eliminates a lot of hassle with using five separate files that are linked together. It is not available in another spreadsheet like the other spreadsheets listed here.
BSBEGIN	Allows producers to prepare a beginning balance sheet by entering their information into schedules. The schedule information is then transferred to a balance sheet automatically. Additional miscellaneous information can be entered directly into the balance sheet. Calculates deferred taxes on both current and non-current assets. This program can be used by itself or in conjunction with BSEND, CASHFLOW, OWNREQTY, and RATIOS. If used in conjunction with the other programs listed, a complete historical financial analysis is obtained. Conforms to the Farm Financial Standards Guidelines (FFSG).
BSEND	Allows the user to prepare an ending balance sheet from schedules. The schedule information is then transferred to the balance sheet automatically. Calculates deferred taxes for current and non-current assets and liabilities. Conforms to the Farm Financial Standards Guidelines (FFSG). See also BSBEGIN and CASHFLOW.
CASHFLOW	Allows a farmer or rancher to prepare a cash flow statement by filling in schedules. Any miscellaneous information that does not fit into a schedule can be entered directly into the cash flow statement. This program also includes an Income Statement. Information shared with the Cash Flow statement is transferred directly to the Income Statement. Both cash and accrual income are calculated. Accrual adjustment requires beginning and ending balance sheet information. See BSBEGIN and BSEND. Updated November 98

OWNREQTY	This program is used to reconcile financial statements. Information from beginning and ending balance sheets, the income statement and the cash flow statement are required. This program reconciles those statements, assuring that they are accurate. The program works in conjunction with BSBEGIN, BSEND, and CASHFLOW.
RATIOS	This program calculates the "Sweet 16" financial ratios and measures suggested by the Farm Financial Standards Guidelines. It uses information from several other spreadsheets (is linked to them). These spreadsheets include BSBEGIN, BSEND, CASHFLOW and OWNREQTY.

Back to Top

Lotus for Windows Templates, version 4.0 or greater.

The descriptions of the programs are the same as those listed under the Microsoft Excel section. Remember to hold down the shift key and click on the program name to download.

BEPRICES	COSTPROD		STRGRAIN	MARGIN
CALFWINT	COWCOST	MACHCOST	TRUCKS	MKTGRAIN
CAPINV		MACHINES	TVMSHEET	MKTLVSTK
	CUSTBRKE	NOXSWEED	VARICOST	
HERD	FFSGEXAM	PARTBUD	WFBUDGET	

Note: BSBEGIN, BSEND, CASHFLOW, OWNREQTY, and RATIOS are designed to used together as a package of templates. They contain links to one another to transfer information from one template to another. These templates can however be used individually if the "linked" information is not desired.

BSBEGIN	BSEND	CFHISTRY -- Note: This file is the same as the CASHFLOW file for Excel and Quattro Pro. Updated November 98	OWNREQTY	RATIOS

Back to Top

Cash Flow Budgeting

Purposes and Use of a Cash Flow Budget

1. A cash flow budget is a projection of cash receipts (Cash Inflows) and cash disbursements (Cash Outflows) for some future period—usually the coming year.

2. The primary purpose is to determine if cash from reserves and projected receipts will be available to make the projected disbursements. If cash reserves and cash receipts are inadequate to cover disbursements in certain months of the upcoming production and marketing period, credit will be required.

3. The cash flow budget presented here reflects monthly inflows and outflows for the coming year.

Purposes and Use of a Cash Flow Budget
(continued)

4. Cash flow budgets provide a means for monitoring actual cash expenses and receipts as compared to budgeted receipts and disbursements.

Parts of a Cash Flow Budget

1. Cash Inflows

    a. The line headings on the cash inflow sheet should indicate the major sources of cash inflows by category and subcategory where appropriate. Major categories might include crop sales, government payments, other farm income, and capital sales.

    b. Depending on the expected usage of the cash flow budget, nonfarm income may be listed as a cash inflow.

Sheet 1. Cash Inflows

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Winter Wheat F													
Recrop Winter Wh													
Spring Wheat													
Barley													
AMTA - Wheat													
AMTA - Barley													
MLA - 2000													
TOTAL													

Sources of Information for Cash Inflows

1. Farm records, including income tax returns, are a good source of historical inflows. Most farm record keeping systems track cash inflows by categories on a monthly basis. For instance, perhaps a crop sales account would record *wheat sales* in March.

2. If you are dealing with a crop to be added to the rotation, you would need to consider when it would be marketed.

3. Certain government payments you may schedule. Others just arrive. You need to know when.

Sheet 1. Cash Inflows

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Winter Wheat F			*$22,680*							*$20,520*			*$43,200*
Recrop Winter Wh			*8,100*							*5,400*			*13,500*
Spring Wheat											*$97,020*		*97,020*
Barley			*11,210*								*15,010*		*26,220*
AMTA - Wheat	*$22,325*												*22,325*
AMTA - Barley	*2,142*												*2,142*
MLA - 2000										*24,467*			*24,467*
TOTAL	*$24,467*		*$41,990*							*$50,387*	*$112,030*		*$228,874*

Parts of a Cash Flow Budget
(continued)

2. Cash Outflows

   a. The line headings should include major cash expense categories. These would include operating expense categories such as fuel, repairs, and fertilizer, purchases; debt service requirements; income tax and social security taxes; and family living expenses.

   b. Depreciation is not a cash expense and is not included in the cash flow budget.

Sheet 2. Cash Outflows

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Seed, C+T													
Equip. Rental													
Chemicals													
Fertilizer													
Fuel													
Repairs													
Crop Insurance													
Insurance													
Property Tax													
Debt payments													
Utilities & Supplies													
Farmstead Rental													
Income Tax													
Family Living													
TOTAL													

Sources of Information for Cash Outflows

1. Farm records, including income tax returns, will provide year totals of cash outflows. Most farm record-keeping systems track cash outflows by categories on a monthly basis. For instance, a cash expense ledger would record in which months fuel was purchased.

2. If you are adding a crop to a usual wheat-barley-fallow rotation, you may want to use an enterprise budget to determine what inputs would be purchased and when. What will you spend for seed for field peas and when?

3. You may have planned to make certain conservation improvements in the coming year. You will need to note when you expect to pay for contracted services.

4. Your loan agreements will indicate when principal and interest payments are to be made.

Sheet 2. Cash Outflows

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Seed, C+T				*300*	*1,260*				*930*				*$2,490*
Equip. Rental				*1,200*									*1,200*
Chemicals				*4,930*	*535*	*11,100*			*2,700*				*19,265*
Fertilizer				*4,560*	*16,080*				*3,710*				*24,350*
Fuel				*6,560*		*2,400*	*4,410*		*4,340*				*17,710*
Repairs	*2,400*		*5,740*	*3,780*					*3,960*		*1,440*		*17,320*
Crop Insurance					*8,400*					*5,245*			*13,645*
Insurance			*750*						*750*				*1,500*
Property Tax					*4,500*						*4,800*		*9,300*
Debt payments											*48,970*		*48,970*
Utilities & Supplies	*300*	*300*	*300*	*300*	*300*	*300*	*300*	*300*	*300*	*300*	*300*	*300*	*3,600*
Farmstead Rental										*12,000*			*12,000*
Income Tax			*13,500*										*13,500*
Family Living	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*2,500*	*30,000*
TOTAL	*$5,200*	*$2,800*	*$22,790*	*$24,130*	*$33,575*	*$16,300*	*$7,210*	*$2,800*	*$19,190*	*$20,045*	*$58,010*	*$2,800*	*$214,850*

Parts of a Cash Flow Budget
(continued)

3. Net cash flow and determination of credit needs

   a. The difference between monthly cash inflows and outflows reflects either a cash surplus or shortage for the month. Cash surpluses are available for use in subsequent months and are carried forward as a beginning cash balance. Cash shortfalls reflect the need for credit in that month.

   b. Monthly operating loan needs are accumulated to determine the overall amount of operating credit needed during the year. An interest calculation is made on a monthly basis to determine the monthly and accumulated operating interest amounts.

Sheet 3. Net Cash Flows and Operating Credit Needs

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Cash inflow													
Cash outflow													
Surplus or deficit													
Balance 1st of month													
Cash available													
Borrowing for balance													
Interest payment on operating loan													
Principal payment on operating loan													
Balance end of month													
Accumulated operating loan													
Interest this month													
Accumulated interest on operating loan													

C:\Extension\JOHNSON\Whole Farm Budget Dec 99\WFB 99 Cash Flow.wpd

Sheet 3. Net Cash Flows and Operating Credit Needs

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Cash inflow	*24,467*		*41,990*							*50,387*	*112,030*		*$228,874*
Cash outflow	*5,200*	*2,800*	*22,790*	*24,130*	*33,575*	*16,300*	*7,210*	*2,800*	*19,190*	*20,045*	*58,010*	*2,800*	*214,850*
Surplus or deficit	*19,267*	*(2,800)*	*19,200*	*(24,130)*	*(33,575)*	*(16,300)*	*(7,210)*	*(2,800)*	*(19,190)*	*30,342*	*54,020*	*(2,800)*	
Balance 1st of month	*6,500*	*25,767*	*22,967*	*42,167*	*18,037*	*0*							
Cash available	*25,767*	*22,967*	*42,167*	*18,037*	*(15,538)*	*(16,300)*							
Borrowing for balance													
Interest payment on operating loan													
Principal payment on operating loan													
Balance end of month	*25,767*	*22,967*	*42,167*	*18,037*	*0*	*0*							
Accumulated operating loan					*15,538*	*31,838*							
Interest this month					*116*	*239*							
Accumulated interest on operating loan					*116*	*355*							

Sheet 3. Net Cash Flows and Operating Credit Needs

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Cash inflow	*24,467*		*41,990*							*50,387*	*112,030*		*$228,874*
Cash outflow	*5,200*	*2,800*	*22,790*	*24,130*	*33,575*	*16,300*	*7,210*	*2,800*	*19,190*	*20,045*	*58,010*	*2,800*	*214,850*
Surplus or deficit	*19,267*	*(2,800)*	*19,200*	*(24,130)*	*(33,575)*	*(16,300)*	*(7,210)*	*(2,800)*	*(19,190)*	*30,342*	*54,020*	*(2,800)*	
Balance 1st of month	*6,500*	*25,767*	*22,967*	*42,167*	*18,037*	*0*	*0*	*0*	*0*	*0*	*30,342*	*21,446*	
Cash available	*25,767*	*22,967*	*42,167*	*18,037*	*(15,538)*	*(16,300)*	*(7,210)*	*(2,800)*	*(19,190)*	*30,342*	*84,362*	*18,646*	
Borrowing for balance	*0*	*0*	*0*	*0*	*15,538*	*16,300*	*7,210*	*2,800*	*19,190*	*0*	*0*	*0*	
Interest payment on operating loan	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1,878*		
Principal payment on operating loan	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*61,038*	*0*	
Balance end of month	*25,767*	*22,967*	*42,167*	*18,037*	*0*	*0*	*0*	*0*	*0*	*30,342*	*21,446*	*18,646*	
Accumulated operating loan	*0*	*0*	*0*	*0*	*15,538*	*31,838*	*39,048*	*41,848*	*61,038*	*61,038*	*0*	*0*	
Interest this month	*0*	*0*	*0*	*0*	*116*	*239*	*293*	*314*	*458*	*458*	*0*	*0*	
Accumulated interest on operating loan	*0*	*0*	*0*	*0*	*116*	*355*	*648*	*962*	*1,420*	*1,878*	*0*	*0*	

Cash Summary

$6,500	From Beginning Balance Sheet
228,874	Cash Inflows
-214,850	Cash Outflows
-1,878	Interest on Operating Loan
$18,646	Ending Cash Balance

	January	February	March	April	May	June	July	August	Sept	October	November	December	
Crop Sales Income	0	2	3	4	5	6	7	8	9	10	11	12	Total
Winter wheat fallow sales			22680.00							20520.00			43200
Recrop winter wheat sales			8100.00							5400.00			13500
Spring wheat sales											97020.00		97020
Barley sales			11210.00								15010.00		26220
AMTA payments--wheat	22325.00												22325
Livestock Sales Income	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
													0
													0
Other													0
Other													0
Other													0
Other													0
Capital Asset Sales	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
Other													0
Other													0
Other													0
Other													0
Other													0
Cash From Government Program Payments	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
AMTA payments--barley	2142.00												2142
MLA payments--2000										24467.00			24467
Other													0
Other													0
Cash rents/Leases	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
Machinery													0
Land													0
Other													0
Other Sources of $$	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
Patronage refunds													0
Custom work													0
State gas refund													0
Insurance Paymts													0
Tax refunds													0
Misc. Income													0
Other													0
Other													0
Other													0
Loan Proceeds & Other Inflows	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
Operating Loan Advances													0
Short Term Notes													0
Long Term Loan Advances													0
Other Loan Proceeds & Advances													0
Non Farm Inflows	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
Wages, Salaries													0
Other Nonfarm Inflows													0
	----J----	----F----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
Total Cash Inflows	24467	0	41990	0	0	0	0	0	0	50387	112030	0	228874

Total Cash Inflows	24467	0	41990	0	0	0	0	0	0	50387	112030	0	228874
Crop Expenses	J	F	M	A	M	J	JULY	A	S	O	N	D	
Seed, clean and treat				300.00	1260.00				930.00				2490
Equipment rental				1200.00									1200
Chemicals				4930.00	535.00	11100.00			2700.00				19265
Fertilizer				4560.00	16080.00				3710.00				24350
Other													0
Other													0
Other													0
Other													0
Other													0
Other													0
Other													0
Livestock Expenses	J	F	M	A	M	J	JULY	A	S	O	N	D	
Breeding Livestock:													
Purchased Feed													0
Artificial Insem.													0
Health													0
Supplies													0
Marketing													0
Other													0
Other													0
Growing and Finishing Livestock	J	F	M	A	M	J	JULY	A	S	O	N	D	
Purchase Cost - Per Head													0
Purchase Cost - Per Cwt													0
Purchase Feed													0
Health													0
Supplies													0
Marketing													0
Other													0
Other													0
Other Operating Expenses													
Fuel, Oil, Lub				6560.00		2400.00	4410.00		4340.00				17710
Repairs	J	F	M	A	M	J	JULY	A	S	O	N	D	
Mach. & Equip.	2400.00		5740.00	3780.00					3960.00		1440.00		17320
Bldngs & Impro.													0
****Hired Labor**													0
Farm Taxes	J	F	M	A	M	J	JULY	A	S	O	N	D	
Real Estate					4500.00						4800.00		9300
Personal Prop.													0
Other													0
Farm Insurance			750.00						750.00				1500
****Utilities**													0
Crop Mrktng & Storage													0
Misc. Farm Exp.													0
Other (Supplies)	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	3600
Crop Insurance					8400.00					5245.00			13645
Farmstead Rental										12000.00			12000
Planned PIK Cert Pur.													0
Rent/Lease Exp.	J	F	M	A	M	J	JULY	A	S	O	N	D	
Land Rent													0
Mach & Building													0
Grazing Fees													0
****Machine Hire**													0
Planned Capital Asset Purchases	J	F	M	A	M	J	JULY	A	S	O	N	D	
Planned Purchases													0
Other													0
Other													0
Principal and Interest Payments													
Loan Payments (Yearly)											48970.00		48970
Loan Payments (Monthly)													0
Term Loan Payments													0
Interest on Term Loans													0
Operating Loan Payment													0
Interest on Operating Loan													0
Accounts Payable													0
Total Farm Cash Outflows	J	F	M	A	M	J	JULY	A	S	O	N	D	
	2700	300	6790	21630	31075	13800	4710	300	16690	17545	55510	300	171350

Total Farm Cash Outflows	2700	300	6790	21630	31075	13800	4710	300	16690	17545	55510	300	171350
Non Farm Expense													
Family living	2500.00	2500.00	2500.00	2500.00	2500.00	2500.00	2500.00	2500.00	2500.00	2500.00	2500.00	2500.00	30000
Food/Cloths/etc.													0
Rent/Mortgage													0
Auto													0
Other													0
Income & SS			13500.00										13500
	----J-----	----F-----	----M----	----A----	----M----	----J----	---JULY---	----A----	----S----	----O----	----N----	----D----	
Total Non-Farm Cash Outflows	2500	2500	16000	2500	2500	2500	2500	2500	2500	2500	2500	2500	43500

		J	F	M	A	M	J	JULY	A	S	O	N	D	
Total Non-Farm Cash Outflows		2500	2500	16000	2500	2500	2500	2500	2500	2500	2500	2500	2500	43500
Total Cash Inflows	A	24467	0	41990	0	0	0	0	0	0	50387	112030	0	A
Total Cash Outlays	B	5200	2800	22790	24130	33575	16300	7210	2800	19190	20045	58010	2800	214650 B
Surplus or Deficit (A-B)	C	19267	-2800	19200	-24130	-33575	-16300	-7210	-2800	-19190	30342	54020	-2800	$20,524 C
Begining Cash Bal. (From Row H) (Except for First Month)	D	6500	25767	22967	42167	18037	0	0	0	0	0	0	21663	D
Cash Available (C + D)	E	25767	22967	42167	18037	-15538	-16300	-7210	-2800	-19190	30342	54020	18863	151125 E
Borrow to Maintain Balance B.O.M. (Min + E)	F	0	0	0	0	15538	16300	7210	2800	19190	0	0	0	61038 F
Payment on operating loan (Only If Row F = 0) (Pay Interest First)	G	0	0	0	0	0	0	0	0	0	30342	32357	0	62699 G
Balance E.O.M. (If Row F > 0, Min.) Otherwise (Row E - G)	H	25767	22967	42167	18037	0	0	0	0	0	0	21663	18863	H
Accumulated Operating Loan (See Below)	I	0	0	0	0	15538	31838	39048	41848	61038	32116	0	0	I
Operating Loan Interest This Month (I * Int.)	J	0	0	0	0	117	239	293	314	458	241	0	0	J
Accumulated Interest On operating Loan (Prev. K + J)	K	0	0	0	0	117	355	648	962	1420	241	0	0	K

MONTANA STATE UNIVERSITY - BOZEMAN

FARM and RANCH MANAGEMENT DECISION SUPPORT SOFTWARE

Website:
www.montana.edu/wwwextec/software/software.htm

Spreadsheet Templates

Due to the time and effort required to convert spreadsheets from one format to another, older spreadsheets in Lotus and Quattro Pro will no longer be supported. As an old spreadsheet is updated in Excel, the Lotus and Quattro Pro versions will be removed from this list.

All DOS version were removed on 10-10-99. Thank you for your continued use of these templates. If you have questions or comments, please send me an e-mail (see bottom of this page).

Select (click on) the type of spreadsheet you have from this list.

Excel for Windows, version 5.0 or greater.	Quattro Pro for Windows, version 5.0 or greater.
Lotus for Windows, version 4.0 or greater.	Lotus for DOS, version 2.x or greater (WK1 file format).

If you have Microsoft Works or a similar spreadsheet for DOS or Windows, select the Lotus for DOS templates. Most of the these will load into a Windows based spreadsheet like Microsoft Works.

Excel for Windows Templates, version 5.0 or greater.	
To down load a file, hold down the shift key and click on the file name. Specify the drive and directory where you wish the file to be stored on your machine.	
BEPRICES	This file allows the calculation of break-even prices for a wide range of starting prices and costs of gain for feeder livestock.
CALFWINT	Calculates the profitability of putting calves on feed through the winter period. Updated November of 1998
CAPINV	Uses capital investment analysis to analyze alternative potential investments.
NEW 8/13/99 CashFlow Simple	This is a simple cash flow statement that does not require the user to information on supporting schedules which is then transferred from the schedule to the cash flow statement. See below for a more detailed versison of a cashflow, with schedules.
CCFS	Combines the COWCOST, CALFWINT, and GRASSFAT programs into one program that analyzes the economic profitability of the three phases of commercial beef production faced by cow calf producers in the north west. Calculates percentage share for leases based on cost contributions approach, if desired. Updated October 10, 1999. Also converted to Excel 97
COSTPROD	Allows a producer to calculate the cost of production for small grain crops. He must know what his machinery costs are. See MACHCOST, CUSTBRKE, and MACHINES to calculate machinery costs.
COWCOST	Calcualates the ownership and operating costs for a commercial beef enterprise.

CROPLEAS	Calculates lease arrangements using a contributions approach to leasing. This program calculates Crop Share, Cash, and Flexible Cash Lease rates. Updated October 10, 1999. Also converted to Excel 97
CUSTBRKE	Calculates the cost of owning and operating machinery for one powered piece of equipment and up to two pulled implements. It also calculates the break-even acreage a producer must have in order to own a piece of machinery and the custom rate a producer would charge if he were to use a piece of machinery to custom farm for someone else.
FFSGEXAM	This program illustrates the linkages between the beginning and ending balance sheet, the cash flow statement and the income statement. This is concept software only and is intended for users who want to learn how integrated financial statements work.
GRASSFAT	Calculates the profitability of putting steers or heifers on summer pasture. Calculates the break-even prices necessary to cover all production costs and also calculates the break-even purchase price with a given sales price. Can be used in conjunction with CALFWINT to estimate break-even prices necessary for yearlings.
HERD	Calculates performance statistics for beef herds of up to 145 cows. Follows Beef Improvement Federation performance guidelines. Calculates one year of performance statistics and does not keep cow histories.
LEASPURC	The program looks at the economic considerations for three options for accomplishing a particular task, out right purchase, straight lease or a lease with an option to buy and renting. The net present value of these three options are compared to determine the lowest cost option. Updated in October 1999. Also converted to Excel 97
MACHCOST	Calculates the cost to own and operate 1 piece of machinery. It can be any pulled implement or powered equipment.
MACHINES	Calculates the cost of production for up to 9 enterprises with full calculation of the cost of owning and operating machinery.
NEW 8/1/99 MARGIN	This is a simple spreadsheet that will help producers understand margin accounting when trading futures contracts. It is designed to show the basic steps in margin accounting but is not detailed enough to show all possible transactions that can take place in a margin account. Requires Excel 97 or newer.
NEW 8/1/99 MKTGRAIN	A spread sheet that will allow you to analyze the price protection available from using the futures and options markets for small grains. This spreadsheet can also be used as an educational tool to learn how the futures and options markets work. Allows individuals to calculate cost of production calculations and includes basis data for Montana calves from 1992 to present. Requires Excel 97 or newer.
NEW 8/1/99 MKTLVSTK	A spread sheet that will allow you to analyze the price protection available from using the futures and options markets for livestock. This spreadsheet can also be used as an educational tool to learn how the futures and options markets work. Allows individuals to calculate cost of production calculations and includes basis data for Montana small grains. Requires Excel 97 or newer.
NOXSWEED	Economic analysis of weed control for weeds that take a long period of time to eliminate. Uses a capital investment analysis to analyze the economic feasibility of controlling noxious weeds on range land. Financial feasibility is not covered by this program.

PARTBUD	This program is a general purpose partial budget. Allows both economic and financial analysis of small changes in an operation to determine profitability and financial feasibility.
STRGRAIN	Calculates the cost and break-even prices for storing grain for six different storage periods for both existing and new on farm storage and for commercial storage.
TRUCKS	Calculates the number of hours of use for individual trucks given the way they are used on a particular operation.
TVMSHEET	This program combines the four programs that deal with the time value of money. The programs deal 1) annuities where you know what you want at some point in the future and you must calculated how to reach that goal, 2) you know what you have currently to invest (fixed sum or an annuity) and you want to know how much it will be in the future, 3) detailed loan amoritization schedules, 4) quick comparisons of various loan amoritization scenarios. (Updated 9-26-98)
VARICOST	This program calculates the variable cost of production for small grain crops. Useful for short run decisions.
WFBUDGET	This program allows the specification of production intentions for an entire operation. It includes three simple plans, a Land Use Plan, a Livestock Plan and a Livestock Feed Plan.
Note: BSBEGIN, BSEND, CASHFLOW, OWNREQTY, and RATIOS are designed for use as a package of templates. They contain links to transfer information from one template to another to provide a "rigoruous" financial performance analysis. These templates can however be used individually if the "linked" information is not desired.	
NEW 8/11/99 Financial Statements	The five financial statement spreadsheets listed directly below (BSBegin, BSEnd, CashFlow, OwnrEqty, and Ratios) are combined into one spreadsheet. This file is rather large, 630K, but eliminates a lot of hassle with using five separate files that are linked together. It is not available in another spreadsheet like the other spreadsheets listed here.
BSBEGIN	Allows producers to prepare a beginning balance sheet by entering their information into schedules. The schedule information is then transferred to a balance sheet automatically. Additional miscellaneous information can be entered directly into the balance sheet. Calculates deferred taxes on both current and non-current assets. This program can be used by itself or in conjunction with BSEND, CASHFLOW, OWNREQTY, and RATIOS. If used in conjunction with the other programs listed, a complete historical financial analysis is obtained. Conforms to the Farm Financial Standards Guidelines (FFSG).
BSEND	Allows the user to prepare an ending balance sheet from schedules. The schedule information is then transferred to the balance sheet automatically. Calculates deferred taxes for current and non-current assets and liabilities. Conforms to the Farm Financial Standards Guidelines (FFSG). See also BSBEGIN and CASHFLOW.
CASHFLOW	Allows a farmer or rancher to prepare a cash flow statement by filling in schedules. Any miscellaneous information that does not fit into a schedule can be entered directly into the cash flow statement. This program also includes an Income Statement. Information shared with the Cash Flow statement is transferred directly to the Income Statement. Both cash and accrual income are calculated. Accrual adjustment requires beginning and ending balance sheet information. See BSBEGIN and BSEND. Updated November 98

Partial Budgeting

Definition and Use of a Partial Budget

1. A Partial Budget is a planning tool used to calculate the expected change in net returns for a proposed change in the farm business.

   The change may involve more than one enterprise.

   Only the changes in costs and returns are considered, not total costs and returns.

2. Examples of decisions that could be evaluated with a partial budget are:

   Changes in crop enterprises.

   Possible actions to be taken due to the loss of a fall-planted crop.

Specifying the Particular Changes

1. Care must be taken to identify all the enterprises, activities and variables that will be impacted by the proposed change. For example: If the partial budget is used to analyze potential enterprise changes, all the variables need to be specified, including family supplied resources such as labor, management and capital.

2. Four Basic Questions:

   a. What new or additional income will be received?

   b. What current costs will be reduced or eliminated?

   c. What new or additional costs will be incurred?

   d. What current income will be reduced?

3. Partial Budget Format

Partial Budget

Estimating the change in annual net farm returns from: _____

_____

I. Net Returns Increasing Changes

A. Added Returns

_____ _____

_____ _____

B. Reduced Costs

_____ _____

_____ _____

Subtotal I _____

II. Net Returns Reducing Changes

A. Reduced Returns

_____ _____

_____ _____

B. Added Costs

_____ _____

_____ _____

Subtotal II _____

Estimated Change in Net Farm Returns (I minus II) _____

Identifying Additional Income and Reduced Costs

1. Additional Income:

   a. Additional income would be expected from a new enterprise, or the expansion of an existing enterprise.

   b. Only the extra income from the change is listed—not total income from the farm.

   c. Accurate estimates of both price and yield are necessary.

Identifying Additional Income and Reduced Costs (continued)

2. Reduced costs:

   a. Both operating and ownership costs may be reduced by the proposed change.

   b. If the proposed change involves eliminating equipment or breeding livestock, depreciation, opportunity costs, taxes and insurance costs would be reduced.

   c. Reduced costs associated with lower labor requirements must be carefully evaluated. Costs will be reduced only
   if less total labor is hired or the released labor can be used in another activity.

Identifying Additional Costs and Reduced Income

1. Additional Costs:

   a. If the proposed change involves the acquisition of additional machinery, equipment, the additional costs will include both operating and ownership costs.
   (Before the purchase both costs are variable.)

   b. Operating and ownership costs should be estimates of average annual costs.

   c. A WORD OF CAUTION!
   What does the use of average annual ownership costs imply about the longevity of the proposed change?

Identifying Additional Costs and Reduced Income (continued)

2. Reduced Income:

   a. The proposed change may reduce income if it involves eliminating an enterprise, reducing an enterprise, or cause a reduction in yield or production levels.

   b. Accurate estimates of both yields and prices are necessary.

Partial Budget Example

Joe Average has examined his winter wheat crop and has determined that a substantial portion of the stand has suffered winter kill. He is undecided if he should reseed the affected acreage to spring wheat or to retain the winter crop and accept substantial reductions in yield. To provide a basis for decision making, he has assembled the following information, in part based on his expectations:

1. If not reseed, the winter damaged wheat crop will probably yield around 18 bushels per acre.

2. If reseeded to spring wheat, a 32-bushel yield can be expected.

Partial Budget Example
(continued)

3. The expected price for winter wheat is $2.70/bu. The expected price for spring wheat is $3.30/bu.

4. Seedbed preparation and seeding would require three additional field operations:

    a. Cultivation, at a cost of $3.05 per acre for fuel, lube and repairs.
    b. Fertilizer application, at a cost of $2.55 per acre for fuel, lube and repairs.
    c. Seeding at a cost of $4.30 per acre for fuel, lube, repair and labor.

Partial Budget Example
(continued)

5. Reseeding also will require two additional material inputs:
   a. Seed (60lbs @ $5.00/bushel)
   b. Fertilizer (50lbs @ $200.00/ton)

6. Operating loans are obtained at 9% interest. The operating loan for the costs of reseeding would be needed for 6 months.

Does it pay to reseed Spring Wheat?

Partial Budget

Estimating the change in annual net farm returns from: _____

___*Reseed damaged winter wheat crop to spring wheat*_____

I. Net Returns Increasing Changes

A. Added Returns

_*32bu spring wheat @ $3.30/bu*_____	___*$105.60*_____
_____	_____

B. Reduced Costs

_____	_____
_____	_____
Subtotal I	___*$105.60*_____

II. Net Returns Reducing Changes

A. Reduced Returns

_*18bu winter wheat @ $2.70/bu*_____	___*$48.60*_____
_____	_____

B. Added Costs

*Machinery costs for cultivation, drill, fert. spread*__	___*$9.90*_____
*Seed*_____	___*$5.00*_____
*Fertilizer*_____	___*$5.00*_____
_____	_____
*Interest*_____	___*$0.90*_____
Subtotal II	__*$69.40*_____

Estimated Change in Net Farm Returns (I minus II) __*$36.20*_____

Partial Budget Form

For:

Positive Effects ($ per Year)				Negative Effects ($ per Year)		
	Added Returns	Profitibility	Cash Flow	**Added Costs**	Profitibility	Cash Flow
1						
2						
3						
4						
5						
6						
7						
8						
9						
10				##		
	Total Added Returns			Total Added Costs		
	Reduced Costs	Profitibility	Cash Flow	**Reduced Returns**	Profitibility	Cash Flow
1						
2						
3						
4						
5						
6						
7						
8						
9						
10				##		
	Total Reduced Costs			Total Reduced Returns		
	Total Positive Effects			**Total Negative Effects**		

Financial Analysis

1 Change in annual profit:

Total Positive Effect (Profit Column)		A		
Minus:				
Total Negative Effect (Profit Column)		B	(A-B)	#1

2 Average Annual Rate of Return on Investment:

Annual Profit or (Loss) From Line #1		C		
Plus:				
Interest Cost (ON INVESTMENTS) From Profit Column		D		
Divided By:				
Dollars Invested		E	((C+D)/E)x100 =%	#2

3 After-tax Cash Available for Annual Retirement of Principal:

Total Positive Effect (Cash Flow Column)		F		
Minus:				
Total Negative Effect (Cash Flow Column)		G		
Minus:				
Change in Profit		H		
Times:				
Marginal Tax Rate (Combined State and Federal)		I	[(F-G)-(H x I)]	#3

4 Years to Recover Debt:

Loan Amount		Divided by	Line #3	Equals:	#4

Partial Budget Form

For: Reseed winter wheat to spring wheat

Positive Effects ($ per Year)				Negative Effects ($ per Year)		
Added Returns	Profitability	Cash Flow		**Added Costs**	Profitibility	Cash Flow
32 bu spring wheat/$3.30	105.60		1	machinery operating costs	9.90	
			2	seed	5.00	
			3	fertilizer	5.00	
			4	interest	0.90	
			5			
			6			
			7			
			8			
			9			
			##			
Total Added Returns	105.60	0.00		Total Added Costs	20.80	0.00

Reduced Costs	Profitibility	Cash Flow		**Reduced Returns**	Profitibility	Cash Flow
			1	18 bu winter wheat/$2.70	48.60	
			2			
			3			
			4			
			5			
			6			
			7			
			8			
			9			
			##			
Total Reduced Costs	0.00	0.00		Total Reduced Returns	48.60	0.00

Total Positive Effects	105.60	0.00	**Total Negative Effects**	69.40	0.00

Financial Analysis

Change in annual profit:

Total Positive Effect (Profit Column)	105.60	A			
Minus:					
Total Negative Effect (Profit Column)	69.40	B	(A-B)	36.20	#1

Average Annual Rate of Return on Investment:

Annual Profit or (Loss) From Line #1	36.20	C			
Plus:					
Interest Cost (ON INVESTMENTS) From Profit Column	0.00	D			
Divided By:					
Dollars Invested	0.00	E	((C+D)/E)x100 =%	#N/A	#2

After-tax Cash Available for Annual Retirement of Principal:

Total Positive Effect (Cash Flow Column)	0.00	F			
Minus:					
Total Negative Effect (Cash Flow Column)	0.00	G			
Minus:					
Change in Profit	36.20	H			
Times:					
Marginal Tax Rate (Combined State and Federal)		I	[(F-G)-(H x I)]	0.00	#3

Years to Recover Debt:

Loan Amount	0.00	Divided by	Line #3	0.00	Equals:	#N/A	#4

MONTANA STATE UNIVERSITY - BOZEMAN

FARM and RANCH MANAGEMENT DECISION SUPPORT SOFTWARE

Website:
www.montana.edu/wwwextec/software/software.htm

Spreadsheet Templates

Due to the time and effort required to convert spreadsheets from one format to another, older spreadsheets in Lotus and Quattro Pro will no longer be supported. As an old spreadsheet is updated in Excel, the Lotus and Quattro Pro versions will be removed from this list.

All DOS version were removed on 10-10-99. Thank you for your continued use of these templates. If you have questions or comments, please send me an e-mail (see bottom of this page).

Select (click on) the type of spreadsheet you have from this list.

Excel for Windows, version 5.0 or greater.	Quattro Pro for Windows, version 5.0 or greater.
Lotus for Windows, version 4.0 or greater.	Lotus for DOS, version 2.x or greater (WK1 file format).

If you have Microsoft Works or a similar spreadsheet for DOS or Windows, select the Lotus for DOS templates. Most of the these will load into a Windows based spreadsheet like Microsoft Works.

Excel for Windows Templates, version 5.0 or greater.	
To down load a file, hold down the shift key and click on the file name. Specify the drive and directory where you wish the file to be stored on your machine.	
BEPRICES	This file allows the calculation of break-even prices for a wide range of starting prices and costs of gain for feeder livestock.
CALFWINT	Calculates the profitability of putting calves on feed through the winter period. Updated November of 1998
CAPINV	Uses capital investment analysis to analyze alternative potential investments.
New 8/13/99 CashFlow Simple	This is a simple cash flow statement that does not require the user to information on supporting schedules which is then transferred from the schedule to the cash flow statement. See below for a more detailed versison of a cashflow, with schedules.
CCFS	Combines the COWCOST, CALFWINT, and GRASSFAT programs into one program that analyzes the economic profitability of the three phases of commercial beef production faced by cow calf producers in the north west. Calculates percentage share for leases based on cost contributions approach, if desired. Updated October 10, 1999. Also converted to Excel 97
COSTPROD	Allows a producer to calculate the cost of production for small grain crops. He must know what his machinery costs are. See MACHCOST, CUSTBRKE, and MACHINES to calculate machinery costs.
COWCOST	Calcualates the ownership and operating costs for a commercial beef enterprise.

CROPLEAS	Calculates lease arrangements using a contributions approach to leasing. This program calculates Crop Share, Cash, and Flexible Cash Lease rates. Updated October 10, 1999. Also converted to Excel 97
CUSTBRKE	Calculates the cost of owning and operating machinery for one powered piece of equipment and up to two pulled implements. It also calculates the break-even acreage a producer must have in order to own a piece of machinery and the custom rate a producer would charge if he were to use a piece of machinery to custom farm for someone else.
FFSGEXAM	This program illustrates the linkages between the beginning and ending balance sheet, the cash flow statement and the income statement. This is concept software only and is intended for users who want to learn how integrated financial statements work.
GRASSFAT	Calculates the profitability of putting steers or heifers on summer pasture. Calculates the break-even prices necessary to cover all production costs and also calculates the break-even purchase price with a given sales price. Can be used in conjunction with CALFWINT to estimate break-even prices necessary for yearlings.
HERD	Calculates performance statistics for beef herds of up to 145 cows. Follows Beef Improvement Federation performance guidelines. Calculates one year of performance statistics and does not keep cow histories.
LEASPURC	The program looks at the economic considerations for three options for accomplishing a particular task, out right purchase, straight lease or a lease with an option to buy and renting. The net present value of these three options are compared to determine the lowest cost option. Updated in October 1999. Also converted to Excel 97
MACHCOST	Calculates the cost to own and operate 1 piece of machinery. It can be any pulled implement or powered equipment.
MACHINES	Calculates the cost of production for up to 9 enterprises with full calculation of the cost of owning and operating machinery.
NEW 8/1/99 MARGIN	This is a simple spreadsheet that will help producers understand margin accounting when trading futures contracts. It is designed to show the basic steps in margin accounting but is not detailed enough to show all possible transactions that can take place in a margin account. Requires Excel 97 or newer.
NEW 8/1/99 MKTGRAIN	A spread sheet that will allow you to analyze the price protection available from using the futures and options markets for small grains. This spreadsheet can also be used as an educational tool to learn how the futures and options markets work. Allows individuals to calculate cost of production calculations and includes basis data for Montana calves from 1992 to present. Requires Excel 97 or newer.
NEW 8/1/99 MKTLVSTK	A spread sheet that will allow you to analyze the price protection available from using the futures and options markets for livestock. This spreadsheet can also be used as an educational tool to learn how the futures and options markets work. Allows individuals to calculate cost of production calculations and includes basis data for Montana small grains. Requires Excel 97 or newer.
NOXSWEED	Economic analysis of weed control for weeds that take a long period of time to eliminate. Uses a capital investment analysis to analyze the economic feasibility of controlling noxious weeds on range land. Financial feasibility is not covered by this program.

PARTBUD	This program is a general purpose partial budget. Allows both economic and financial analysis of small changes in an operation to determine profitability and financial feasibility.
STRGRAIN	Calculates the cost and break-even prices for storing grain for six different storage periods for both existing and new on farm storage and for commercial storage.
TRUCKS	Calculates the number of hours of use for individual trucks given the way they are used on a particular operation.
TVMSHEET	This program combines the four programs that deal with the time value of money. The programs deal 1) annuities where you know what you want at some point in the future and you must calculated how to reach that goal, 2) you know what you have currently to invest (fixed sum or an annuity) and you want to know how much it will be in the future, 3) detailed loan amoritization schedules, 4) quick comparisons of various loan amoritization scenarios. (Updated 9-26-98)
VARICOST	This program calculates the variable cost of production for small grain crops. Useful for short run decisions.
WFBUDGET	This program allows the specification of production intentions for an entire operation. It includes three simple plans, a Land Use Plan, a Livestock Plan and a Livestock Feed Plan.
Note: BSBEGIN, BSEND, CASHFLOW, OWNREQTY, and RATIOS are designed for use as a package of templates. They contain links to transfer information from one template to another to provide a "rigoruous" financial performance analysis. These templates can however be used individually if the "linked" information is not desired.	
8/11/99 Financial Statements	The five financial statement spreadsheets listed directly below (BSBegin, BSEnd, CashFlow, OwnrEqty, and Ratios) are combined into one spreadsheet. This file is rather large, 630K, but eliminates a lot of hassle with using five separate files that are linked together. It is not available in another spreadsheet like the other spreadsheets listed here.
BSBEGIN	Allows producers to prepare a beginning balance sheet by entering their information into schedules. The schedule information is then transferred to a balance sheet automatically. Additional miscellaneous information can be entered directly into the balance sheet. Calculates deferred taxes on both current and non-current assets. This program can be used by itself or in conjunction with BSEND, CASHFLOW, OWNREQTY, and RATIOS. If used in conjunction with the other programs listed, a complete historical financial analysis is obtained. Conforms to the Farm Financial Standards Guidelines (FFSG).
BSEND	Allows the user to prepare an ending balance sheet from schedules. The schedule information is then transferred to the balance sheet automatically. Calculates deferred taxes for current and non-current assets and liabilities. Conforms to the Farm Financial Standards Guidelines (FFSG). See also BSBEGIN and CASHFLOW.
CASHFLOW	Allows a farmer or rancher to prepare a cash flow statement by filling in schedules. Any miscellaneous information that does not fit into a schedule can be entered directly into the cash flow statement. This program also includes an Income Statement. Information shared with the Cash Flow statement is transferred directly to the Income Statement. Both cash and accrual income are calculated. Accrual adjustment requires beginning and ending balance sheet information. See BSBEGIN and BSEND. Updated November 98