

Partial Budgets

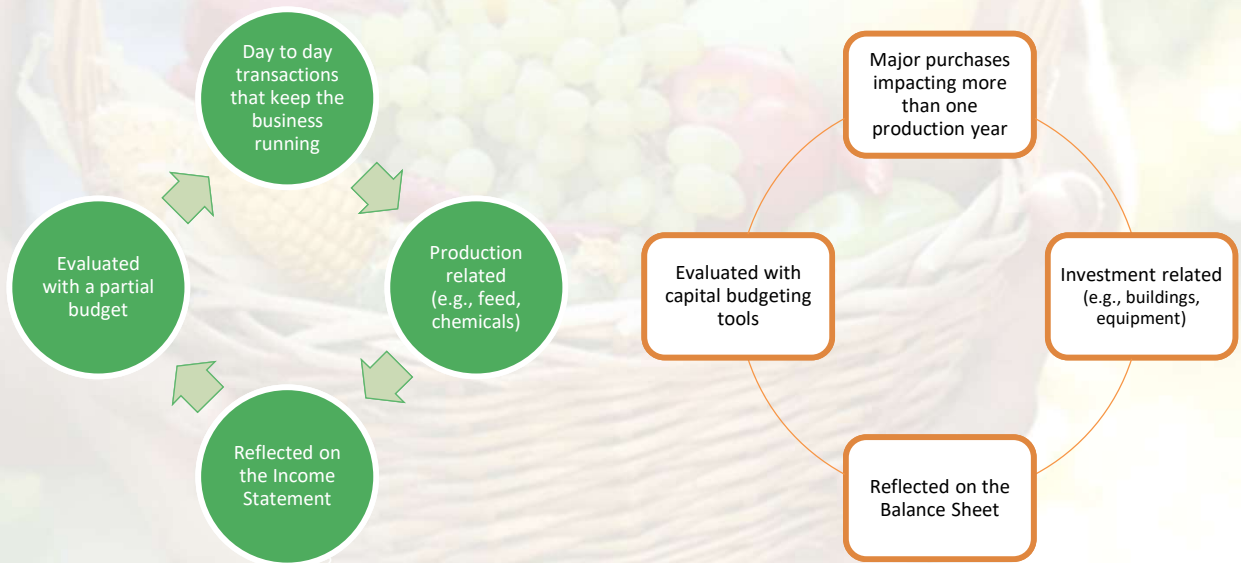


Evaluating Operational Changes



OPERATIONS

CAPITAL



MICHIGAN STATE UNIVERSITY | Extension

OPERATIONS

Income Statement

Farm Income
Crop sales
Milk sales
Livestock sales
-- Cash Expenses
Fertilizer expense
Seed expense
Feed expense
Breeding expense
-- Depreciation Expense
= Net Farm Income

CAPITAL

Balance Sheet

Assets	Liabilities
Cash	Unpaid bills
Crop inventory	Operating loans
Raised Livestock	Equipment loans
Equipment	Land loans
Buildings	Equity
Land	Contributed Capital
	Retained Earnings

3

MICHIGAN STATE UNIVERSITY | Extension

OPERATIONS

Income Statement

Farm Income
Crop sales
Milk sales
Livestock sales
-- Cash Expenses
Fertilizer expense
Seed expense
Feed expense
Breeding expense
-- Depreciation Expense
= Net Farm Income

CAPITAL

Balance Sheet

Assets	Liabilities
Cash	Unpaid bills
Crop inventory	Operating loans
Raised Livestock	Equipment loans
Equipment	Land loans
Buildings	Equity
Land	Contributed Capital
	Retained Earnings

Handled within one year

←

4

MICHIGAN STATE UNIVERSITY | Extension

OPERATIONS

Income Statement

Farm Income
Crop sales
Milk sales
Livestock sales
-- Cash Expenses
Fertilizer expense
Seed expense
Feed expense
Breeding expense
-- Depreciation Expense
= Net Farm Income

Handled
within
one year

CAPITAL

Balance Sheet

Assets	Liabilities
Cash	Unpaid bills
Crop inventory	Operating loans
Raised Livestock	Equipment loans
Equipment	Land loans
Buildings	Equity
Land	Contributed Capital
	Retained Earnings

5

MICHIGAN STATE UNIVERSITY | Extension

OPERATIONS

Income Statement

Farm Income
Crop sales
Milk sales
Livestock sales
-- Cash Expenses
Fertilizer expense
Seed expense
Feed expense
Breeding expense
-- Depreciation Expense
= Net Farm Income

CAPITAL

Balance Sheet

Assets	Liabilities
	Equity

\$100K

6

OPERATIONS

CAPITAL

Income Statement

Balance Sheet

Farm Income	
Crop sales	
Milk sales	
Livestock sales	
-- Cash Expenses	
Fertilizer expense	
Seed expense	
Feed expense	
Breeding expense	
-- Depreciation Expense	
= Net Farm Income	\$100K

Assets	Liabilities
Cash + \$100K	
	Equity

7



OPERATIONS

CAPITAL

Income Statement

Balance Sheet

Farm Income	
Crop sales	
Milk sales	
Livestock sales	
-- Cash Expenses	
Fertilizer expense	
Seed expense	
Feed expense	
Breeding expense	
-- Depreciation Expense	
= Net Farm Income	\$100K

Assets	Liabilities
Cash + \$100K	
	Equity
	Retained Earnings + \$100K

8



MICHIGAN STATE UNIVERSITY | Extension

OPERATIONS

Income Statement

Farm Income
Crop sales
Milk sales
Livestock sales
-- Cash Expenses
Fertilizer expense
Seed expense
Feed expense
Breeding expense
-- Depreciation Expense
= Net Farm Income

CAPITAL

Balance Sheet

Assets	Liabilities
Cash	Unpaid bills
Crop inventory	Operating loans
Raised Livestock	Equipment loans
Equipment	Land loans
Buildings	Equity
Land	Contributed Capital
	Retained Earnings

Investment lasts more than 1 year →

9

MICHIGAN STATE UNIVERSITY | Extension

OPERATIONS

Income Statement

Farm Income
Crop sales
Milk sales
Livestock sales
-- Cash Expenses
Fertilizer expense
Seed expense
Feed expense
Breeding expense
-- Depreciation Expense
= Net Farm Income

10

OPERATIONS

Income Statement

Farm Income
 Crop sales
 Milk sales
 Livestock sales

-- Cash Expenses
 Fertilizer expense
 Seed expense
 Feed expense
 Breeding expense

-- Depreciation Expense

= Net Farm Income

Partial Budgeting is a tool to evaluate operational changes.

11



OPERATIONS

Income Statement

Farm Income
 Crop sales
 Milk sales
 Livestock sales

-- Cash Expenses
 Fertilizer expense
 Seed expense
 Feed expense
 Breeding expense

-- Depreciation Expense

= Net Farm Income

Partial Budgeting is a tool to evaluate operational changes.

We look at benefits and costs of making an operational change.

12



OPERATIONS

Income Statement

Farm Income
 Crop sales
 Milk sales
 Livestock sales

-- Cash Expenses
 Fertilizer expense
 Seed expense
 Feed expense
 Breeding expense

-- Depreciation Expense

= Net Farm Income

Partial Budgeting is a tool to evaluate operational changes.

We look at **benefits** and costs of making an operational change:

- **Increased revenues**
- **Decreased expenses**

13



OPERATIONS

Income Statement

Farm Income
 Crop sales
 Milk sales
 Livestock sales

-- Cash Expenses
 Fertilizer expense
 Seed expense
 Feed expense
 Breeding expense

-- Depreciation Expense

= Net Farm Income

Partial Budgeting is a tool to evaluate operational changes.

We look at benefits and **costs** of making an operational change:

- Increased revenues
- Decreased expenses
- **Decreased revenues**
- **Increased expenses**

14



OPERATIONS

Income Statement

Farm Income
 Crop sales
 Milk sales
 Livestock sales

-- Cash Expenses
 Fertilizer expense
 Seed expense
 Feed expense
 Breeding expense

-- Depreciation Expense

= Net Farm Income

Capital Exception Rule

Sometimes operational changes require replacing capital assets.

Then we include operational costs associated with capital, such as:

- Depreciation
- Interest
- Taxes
- Insurance



Partial Budget Format

Title:	
BENEFITS	COSTS
Increased Revenues	Decreased Revenues
Decreased Costs	Increased Costs
Net Result	



Partial Budget Format



Title:	
BENEFITS	COSTS
Increased Revenues	Decreased Revenues
Decreased Costs	Increased Costs
Net Result	



Partial Budget Format



Title:	
BENEFITS	COSTS
Increased Revenues	Decreased Revenues
Decreased Costs	Increased Costs
Net Result	



Partial Budget Format

Title:	
BENEFITS	COSTS
Increased Revenues	Decreased Revenues
Decreased Costs	Increased Costs
Net Result	



Partial Budget Format

Title:	
BENEFITS	COSTS
Increased Revenues	Decreased Revenues
Decreased Costs	Increased Costs
Net Result	

Variable costs change with a change in production.

Fixed costs do not change with production.

Note: costs typically fixed may increase or decrease with an operations management change.
 EX: depreciation
 farm utilities
 fixed labor



Partial Budget Format

Title:	
BENEFITS	COSTS
Increased Revenues	Decreased Revenues
Decreased Costs	Increased Costs
Net Result	



Partial Budget Format

Title: Spraying for Phytophthora in pumpkins (1 acre)	
BENEFITS	COSTS
Increased Revenues \$642.97 – pumpkin sales <i>Total: \$642.97</i>	Decreased Revenues Increased Costs \$ 311.19 – chemicals \$ 36.00 – application \$ 295.78 – harvest <i>Total: \$642.97</i>
Decreased Costs	
Net Result	
	\$0/acre

Price is \$100.00 per tote

What yield do I need to break-even?

→ $\$642.97/ac \div \$100 = 6.43$ totes

- Cost of spraying:**
- Chemistry: *Ridomil Gold Bravo, Presidio, Revus*
 - Application (3 trips x \$12/acre)
 - Harvest (\$46/tote)



Partial Budget Format

Increases pumpkin production 7 totes per acre. Price is \$100.00 per tote.
 → 7 totes × \$100 = \$700.00/ac

Title: Spraying for Phytophthora in pumpkins (1 acre)	
BENEFITS	COSTS
Increased Revenues \$700 – pumpkin sales Total: \$700	Decreased Revenues Increased Costs \$ 311.19 – chemicals \$ 36.00 – application \$ 322.00 – harvest Total: \$669.19
Decreased Costs	
Net Result \$30.81/acre	

Cost of spraying:

- Chemistry: *Ridomil Gold Bravo, Presidio, Revus*
- Application (3 trips x \$12/acre)
- Harvest (\$46/tote)



Partial Budget Format

Increases pumpkin production 14 totes per acre. Price is \$100.00 per tote.
 → 14 totes × \$100 = \$1,400.00/ac

Title: Spraying for Phytophthora in pumpkins (1 acre)	
BENEFITS	COSTS
Increased Revenues \$1,400 – pumpkin sales Total: \$1,400	Decreased Revenues Increased Costs \$ 311.19 – chemicals \$ 36.00 – application \$ 644.00 – harvest Total: \$991.19
Decreased Costs	
Net Result \$408.81/acre	

Cost of spraying:

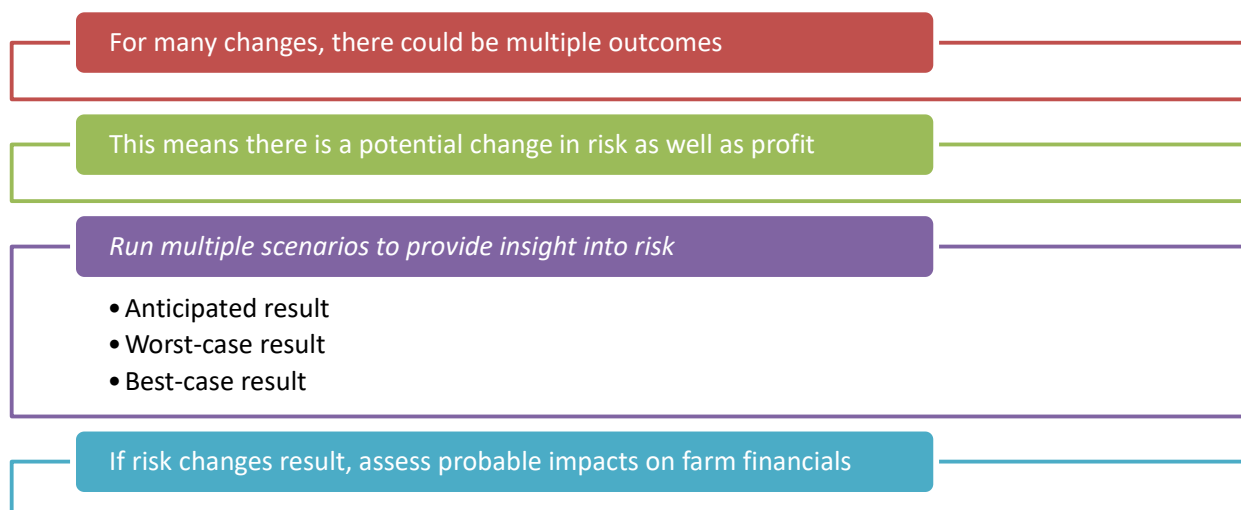
- Chemistry: *Ridomil Gold Bravo, Presidio, Revus*
- Application (3 trips x \$12/acre)
- Harvest (\$46/tote)



Assessing Management Labor in Decision Making



Assessing Risk in Decision Making



Partial Budget Format

Increase 20% of production to grade of U.S. Fancy from U.S. No 1.
 Production is 695.64 bushels per acre.
 "Fancy" premium is \$8.35 per bushel more than U.S. No 1
 (USDA RMA insurance rate)
 → 695.64 bushels × 20% × \$8.35/bushel = \$1,161.72/acre

Title: More Apples grading at U.S. Fancy (1 acre)	
BENEFITS	COSTS
Increased Revenues \$1,161.72/acre (20% more U.S. Fancy) Total: \$1,161.72	Decreased Revenues Increased Costs \$ 400.00 – labor \$ 56.45 – chemicals \$ 22.69 – fertilizer \$ 434.78 – harvest Total: \$913.92
Decreased Costs	
Net Result	
\$247.80/acre	

Labor = thinning 20 hrs x \$20/hr = \$400
 Chemicals = thinning products
 Fertilizer = cost of nitrogen
 Harvest = 25% more time harvesting to secure quality
 \$0.625/bushel x 695.64

Anticipated Results



Partial Budget Format

Increase 16% of production to grade of U.S. Fancy from U.S. No 1.
 Production is 695.64 bushels per acre.
 "Fancy" premium is \$8.35 per bushel more than U.S. No 1
 (USDA RMA insurance rate)
 → 695.64 bushels × 16% × \$8.35/bushel = \$929.39/acre

Title: More Apples grading at U.S. Fancy (1 acre)	
BENEFITS	COSTS
Increased Revenues \$929.39/acre (16% more U.S. Fancy) Total: \$929.39	Decreased Revenues Increased Costs \$ 400.00 – labor \$ 56.45 – chemicals \$ 22.69 – fertilizer \$ 434.78 – harvest Total: \$913.92
Decreased Costs	
Net Result	
\$15.47/acre	

← Costs Stay The Same

Best-case Results



Partial Budget Format

Increase 0% of production to grade of U.S. Fancy from U.S. No 1.

Production is 695.64 bushels per acre.

“Fancy” premium is \$8.35 per bushel more than U.S. No 1
(USDA RMA insurance rate)

→ 695.64 bushels × 0% × \$8.35/bushel = \$0/acre

Title: More Apples grading at U.S. Fancy (1 acre)	
BENEFITS	COSTS
Increased Revenues \$0/acre (0% more U.S. Fancy) Total: \$0	Decreased Revenues Increased Costs \$ 400.00 – labor \$ 56.45 – chemicals \$ 22.69 – fertilizer \$ 434.78 – harvest Total: \$913.92
Net Result	
-\$913.92/acre	

Worst-case Results

← Costs Stay The Same



Assessing Other Intangible Aspects



Not all relevant changes impact profit directly:

- Change in family or leisure time
- Changes in stress level
- Need for increased or specialized knowledge
- Safety and/or ease of equipment use

→ Adds an *‘is it worth it?’* frame to decision making



