Financial Evaluation Tools for your Seafood Business

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Agenda

- Excel Basics
- Pricing
- Break-Even Analysis
- Partial Budgeting
- Profitability
- Cost Formulation

Setting your price

- Variable and Fixed Costs
- Perception, Unique Selling Proposition, Can I Charge a Premium
- Breakeven Quantity
- Breakeven Price

Balance Sheet

Assets = Liabilities + Owner's Equity

Assets	
Current Assets	
Checking/Savings	$500.00
Investments	$10,000.00
Long-Term Assets	
Real Estate	$100,000.00
Boat	$50,000.00
Nets/other equipment	$5,000.00
Total	$165,500.00

Liabilities and Owners Equity	
Current Liabilities	
Notes Payable	$20,000.00
Accounts Payable	$3,000.00
Total Liabilities	$23,000.00
Owners Equity/Net Worth	
New Worth	$142,500.00
Total	$165,500.00

Break-Even Analysis

What is a break-even analysis: A tool used to determine economic feasibility

- Revenue = Costs
- No Profit / No Loss
- Level of Sales to Cover Costs
- Helps quantify level of production needed for a new venture

Break-Even Graph

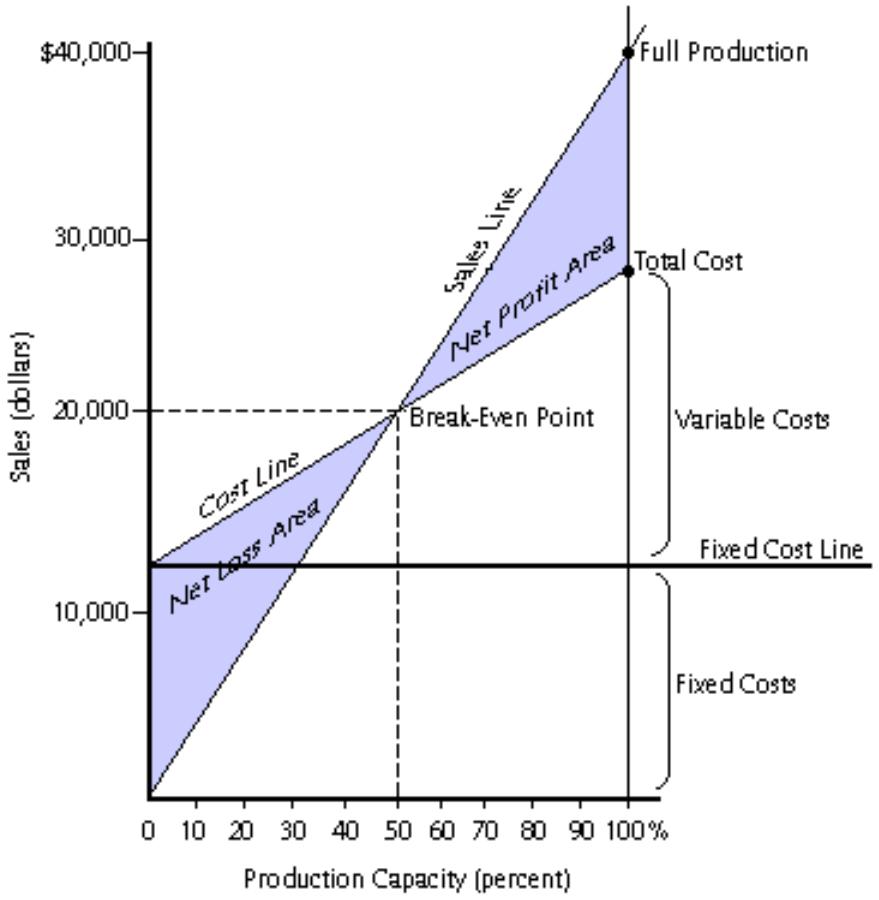

Figure 1
A Break-Even Graph

Break-Even Analysis

- Based on two types of Costs:
  - Fixed Costs-Overhead expenses that do not change with the level of output
    - Boat Payment
    - Annual License and Insurance Fees
    - Annual Maintenance
  - Variable Costs-Change with the level of output
    - Fuel
    - Labor
    - Ice

Break-Even Example

A fisherman from Marshallberg, NC using a skimmer rig harvests 8,000 lbs of shrimp annually. Shrimp are sold ex-vessel wholesale for $1.80/lb. The fisherman estimates the average variable cost per lb is $.75 and his average annual fixed costs are $10,000.

4 Break-Even Components

- Projected Unit Sales = 8,000 lbs of shrimp
- Average Per Unit Sales Price = $1.80/lb
- Average Per Unit Variable Costs = $.75/lb
- Average Annual Fixed Costs = $10,000/yr

Break-Even Equations

- **Break-Even Units**= Avg Annual Fixed Cost / (Avg per unit Sales Price – Avg per unit Variable Cost)
- **Break-Even Sales**= Annual Fixed Cost / (1-(Avg per unit Variable Cost / Avg per unit Sales Price))
- **Break-Even Price**= Per unit variable cost + (Total fixed costs / Projected unit sales)

Calculate Break-Even Units

Break-Even Units=

Avg Annual Fixed Cost /

(Avg per unit Sales Price – Avg per unit Variable Cost)

Break-Even Units= $10,000/($1.80-$.75)

= 9,524 lbs of shrimp

Calculate Break-Even Sales

Break-Even Sales=

Annual Fixed Cost / (1-(Avg per unit Variable Cost / Avg per unit Sales Price))

Break-Even Sales= $10,000/(1-($.75/$1.80)) = $17,142.86

Calculate Break-Even Price

Break-Even Price= Per unit variable cost + (Total fixed costs / Projected unit sales)

Break-Even Price= $.75 + ($10,000 / 8,000 lbs) = $2.00/lb

Calculate Break-Even Using Excel

A fisherman runs a soft crab shedding system in addition to his other fishing activities. He estimates that he will sell 400 dozen soft crabs in a season. His average selling price is $2.50/crab. He estimates that electricity, labor, and filter materials costs will be $.40/crab. His boat payments and other annual payments related to crab shedding equal $8,000.

Benchmarking

Benchmarking is a process to evaluate parts of your operation each season.

- **Crabbing vs. Shrimping**

Partial Budgeting

Partial Budgeting is used to evaluate changes to your business

- Tracks changes in income and expenses that result from a change in practice.
- Not necessary to calculate expenses that are the same for either practice
- Example: Commodity Wholesale Market vs. Niche Market

Partial Budgeting Example

A channel netter from Cedar Island recently learned that locally marketed seafood can receive a price premium of $2.00/lb over ex-vessel wholesale prices. The fisherman estimates that it will cost him $.75/lb extra to pack his product and $.35/lb on marketing materials. No other expenses will be incurred.

Partial Budget Formula

Net Change in Income + Net Change in Expenses = Net Change in Profit

$2.00/lb + ($-.75+$-.35) = $.90/lb increase in profit with new marketing strategy

Developing a Pricing Plan

- **Higher Price Objective**
  - The product is difficult to copy

    Ex. Fresh Stump Sound Oysters
  - To substantiate a quality image positioning

    Example: Locally Harvested Fresh North Carolina Seafood

Profitability

- Is my operation profitable to survive the next 5-10 years?
- Am I marketing a quality product at a price that is competitive with industry prices?
- Does my business have a reputation of being honest, fair, and considerate of the customer?
- Should new technology be implemented?
- How should I change my product mix to yield the highest profit?

SOUTH CAROLINA SHRIMP TRAWLING OPERATION - PROFITABILITY ANALYSIS CALENDER YEAR

Clemson University Economic Survey of Shrimp Trawling Industry 2002

ITEM		REVENUE OR COST		TOTAL
CASH INCOME*	**SAMPLE BOAT**			**SAMPLE**
SHRIMP 2002 season avg AVG PRICE	$1.71	**SAMPLE 70 FT**		$205,200
Season Catch IN LBS (200 days @ 600 LBS/day)	120,000	**BOAT**		
Total Shrimp Revenue :		$205,200.00		
GROSS REVENUE FROM OTHER FISH USING SHRIMP VESSEL		$0.00		$0
PROFITS FROM OYSTER, CRABS, OTHER FISH,CLAMS: **NOT USING SHRIMP VESSEL**		$0.00		
*Total Cash Income **before deductions** : ice, fuel, crew share, or other deductions				
		TOTAL CASH INCOME :		**$205,200**
PERCENT OF LANDINGS AT SC DOCK: 100.00%		**SAMPLE 70 FT**		
NUMBER OF DAYS SHRIMPED IN 2002: _ 200				
OPERATING CASH EXPENSES : GENERAL VARIABLE COSTS	**UNIT Cost YRS**	**BOAT**		
ICE (20 Blks/week@$10 PER BLOCK for 30 weeks)	$10.00	$6,000	1.00	$6,000
FUEL(15,000 GALLONS PER YEAR@ $1 PER GALLON)	$1.00	$15,000	1.00	$15,000
OIL (150 GALLONS PER YEAR @$6/ GALLON)	$6.00	$900	1.00	$900
GROCERIES (PAID BY Captain $100 per week- 30 wks- 2 crew+ Cpt)	UNIT	$3,000	1.00	$3,000
PACKING ($ .25 per pound)	$0.25	$30,000	1.00	$30,000
CREW SHARES/WAGES(20% of Gross Revenues)	20%	$41,040	1.00	$41,040
DOCK ADVANCES FOR MISCELLANEOUS	UNIT	$0	1.00	$0
Captain's Labor(20% of Gross Revenue)	20%	$41,040	1.00	$41,040
UTILITIES (e.g. DOCK ELECTRICITY, WATER, ETC.)	UNIT	$1,000	1.00	$1,000
TRAWL CABLE AND LINE	$3,000.00 3	$1,000	1.00	$1,000
CHAIN	$450.00 2	$225	1.00	$225
PUMPS (Bilge, Deck, etc)	$600.00 1	$600	1.00	$600
Bag Webbing	$1,000.00 2	$500	1.00	$500
BUSINESS CAR AND TRUCK EXPENSES (1000mi/mo/6mo@.31/mi.)	$0.31	$1,860	1.00	$1,860
LEASE EXPENSES (e.g. OFFICE SPACE, VESSELS, ETC.)	UNIT	$0	1.00	$0
PROFESSIONAL FEES (e.g. LEGAL, ACCOUNTANT, ETC.)	UNIT	$300	1.00	$300
JOB RELATED INSURANCE **CREW ONLY**	UNIT	$0	1.00	$0
TIE UP FEES AT DOCK ($1/boat foot / month –12months - 70 ft boat)	$1.00	$840	1.00	$840
OPERATING CASH EXPENSES : REPAIR AND MAINTENANCE		**SAMPLE**	**YOUR BOAT**	**SAMPLE**
ELECTRONICS (ANNUAL REPAIR)	$1,000.00 1	$1,000	1.00	$1,000
ANNUAL Repaint -Bottom	$2,000.00 1	$2,000	1.00	$2,000
Fiberglass bottom	$10,000.00 5	$2,000	1.00	$2,000
ANNUAL Repaint - Rest of Boat	$1,000.00 1	$1,000	1.00	$1,000
NETS ANNUAL REPAIR	$1,000.00 1	$1,000	1.00	$1,000
ENGINE (ANNUAL EQUIVALENT OVERHAUL)	$12,000.00 3	$4,000	1.00	$4,000
FREEZER (ANNUAL REPAIR/MAINT)	$0.00 1	$0	1.00	$0
General repair – welding, etc)	$1,500.00 1	$1,500	1.00	$1,500
Zinc collars for railway	$300.00 1	$300	1.00	$300
OTHERS: RAILWAY, LIFT EXPENSES (twice a year)	$2,000.00 1	$2,000	1.00	$2,000
OPERATING CASH EXPENSES : ANNUAL REPLACEMENT COSTS*				
NEW ELECTRONICS PURCHASED IN 2002	$1,000.00 1	$1,000	1.00	$1,000
NEW DOORS & SLEDS	$2,200.00 1	$2,200	1.00	$2,200
NEW BRD'S PURCHASED IN 2002(4 @ $45)	$180.00 1	$180	1.00	$180
NEW TED'S PURCHASED IN 2002(4 nets, 2 per net @ $300)	$2,400.00 1	$2,400	1.00	$2,400
Main NETS PURCHASED IN 2002(2 @ $2100 -Spectra)	$4,200.00 1	$4,200	1.00	$4,200
Small Nets/ Tri-net Doors (1@ $150)	$150.00 1	$150	1.00	$150
Baskets/ deck equip/ scoops, shovels	$500.00 1	$500	1.00	$500
Boots(three people)	$150.00 1	$150	1.00	$150
Rain Gear (three people)	$300.00 2	$150	1.00	$150
Floats(20@ $9)	$180.00 3	$60	1.00	$60

Cost Formulation

The cost formulation program is used to calculate profit margins.

- Adjust formulas to optimize profit for value added products
- Track costs of ingredient pricing

Value-Added Product Cost Formulation Spreadsheet

For Questions Contact: Brian Efland, NC Sea Grant Program, 252.222.6314, brian_efland@ncsu.edu

Based on 2 Pound Batch Size or 908 grams

Directions- Enter ingredient name (yellow cells), cost (blue cells) and percentage (pink cells) of a 2 pound batch.
The total ingredient cost will be calculated in the green cell. Adjust ingredient percent to minimize cost.

Ingredients	Cost Per Gram	Ingredient Percent	Grams	Ounces	Total Ingredient Cost
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
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			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
			0	0	$0.00
		0.0%	0	0	

% Difference= 100.0%

Total Ingredient Cost $0.00

Cost Formulation Excel Example

Sue is working on a value-added shrimp butter product. She would like to know what her total cost will be based on a 2 lb batch size. Sue's ingredient costs are:

- Shrimp for $3/lb
- Old Bay for $1.50/lb
- Butter for $1.00/lb