EVALUATING NEW HAY ENTERPRISES

Dr. Curt Lacy
Extension Economist-Livestock

THE UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURAL & ENVIRONMENTAL SCIENCES

TWO COMMON QUESTIONS

1. Should I start producing _____ as an alternative crop. Corollary = “I’m thinking about getting in the hay business.”
2. Is it economical to purchase _____ (piece of equipment, additional land, etc.)

NEW ENTERPRISE EVALUATION

KEY CONSIDERATIONS FOR NEW ENTERPRISES

- Economic considerations
  - Will it make money in the long-term (profitability)?
  - Will it cash-flow (liquidity)?
- Other practical matters
  - The new enterprise as compared to what?
  - See yesterday's discussion on product selection.
  - Can you sell all of the production?
  - What is the market for less than perfect production?
- Enterprise budgets make an excellent starting place

PROFITABILITY ≠ CASH FLOW

- Profitability is an indicator of the long-term sustainability of an enterprise.
- Indicates whether or not an enterprise can cover all costs including variable, fixed, capital and management.
- Exam profitability before proceeding to cash-flow analysis.

PROFITABILITY ≠ CASH FLOW

- Cash-flow is a short-term measure
- Indicates if income is greater than outflow.
- Does not necessarily indicate profitability → a business can have positive cash flow buy selling assets and draining the savings account.
- A business can be profitable and not cash-flow. However, it cannot have negative cash-flow (in the long-run) and be profitable.
- A successful venture must be profitable and liquid (positive cash-flow)!!

EXAMPLE FARM

- 135 acres currently in row-crop production
- Center-pivot irrigation
- Sprig 25 acres 4 years and 35 acres 5th year
- Yield & Price Assumptions
  - 3.50 tons Horse Quality Hay - $280/ton
  - 0.75 ton Medium Quality Hay - $125/ton
  - 0.75 ton Low Quality Hay - $100/ton

ENTERPRISE BUDGET

- Projection of costs and returns associated with the production of an enterprise for some future period, such as the coming year.
- An Enterprise is a crop or animal that can be grown to produce a product or products.
- Can have many different budgets for a given enterprise based on various levels of production and types of technology.

COMPONENTS OF A BUDGET

- Income - Cash and non-cash returns
  - Product Sales
    - Premium Quality
    - Medium Quality
    - Other Quality
- Expense
  - Variable
    - Feed
    - Seed
    - Fertilizer
    - Vet
    - Labor
    - Operating Interest

VARIABLE COSTS

- Costs that vary or fluctuate with
  - Size or level of production (number of head, acres, etc.)
  - Production practices chosen (type of field and tillage operations)
- During the production period, variable costs become fixed or sunken cost once incurred, almost all costs are fixed at the end of the production period.
- All costs are variable in the long-run (looking at several production periods).
- ***Return above variable cost is a good indicator of a farm's ability to meet cash obligations.***

COMPONENTS OF A BUDGET-CONT'D

- Expense
  - Fixed
    - Economic or non-cash costs
      - Depreciation
      - Interest
      - Taxes and Insurance
      - Land Charge
      - Profit or Return to Management
    - Cash costs
      - Principal & Interest Payments
      - Machinery Taxes and Insurance
      - Real Estate Taxes
      - Miscellaneous Overhead
      - Family Living

FIXED COSTS

- Do not change with the level of production.
- They are incurred or remain the same no matter the level of production.
- May be cash or non-cash in nature.
- Includes depreciation (or payments), taxes, insurance and interest on machinery, equipment, and buildings investment.
- *Return above total cost is a good indicator of a farm's ability to meet all obligations and produce a profit from the particular enterprise (long term viability).*

FARM-LEVEL EXPENSES

- Some expenses are easier to aggregate at the farm-level
  - Fuel
  - Repairs
  - Family living
  - Taxes and insurance
- If that is the case, use only variable costs you can identify and aggregate everything else at the farm level

ANALYZING PROFITABILITY AND LIQUIDITY

EXAMPLE - Perennial Peanut Hay Projected Revenue and Costs Once Established

Revenue	Unit	Amount/Unit	Price/Unit	Total/acre	Grand Total
Horse Quality Hay	tons	3.50	$ 280.00	$ 980.00	$ 132,300.00
Medium Quality Hay	tons	0.75	$ 200.00	$ 150.00	$ 20,250.00
Lower Quality Hay	tons	0.75	$ 100.00	$ 75.00	$ 10,125.00
Other Income		0.00	$ -	$ -	$ -
Totals		**5.00**		**$ 1,205.00**	**$ 162,675.00**
Variable Costs					
Fertilizer					
3-7-28 (spread)	Lbs	1250.00	$ 0.16	$ 196.88	$ 26,578.13
Sulfur	Lbs	25.00	$ 0.40	$ 10.00	$ 1,350.00
Other	Lbs	0.00	$ -	$ -	$ -
Lime	tons	0.25	$ 24.00	$ 6.00	$ 810.00
Herbicides					
2,4-D amine	Pints	1.00	$ 1.52	$ 1.52	$ 205.20
Velpar	Quarts	2.00	$ 13.75	$ 27.50	$ 3,712.50
Irrigation (If Dryland enter 0 in Amount/Unit)	Acre inch	4.00	$ 14.37	$ 57.49	$ 7,760.95
Fuel	Gallons	30.95	$ 2.25	$ 69.64	$ 9,401.06
Repairs	Acre	1.00	$ 27.09	$ 27.09	$ 3,657.15
Supplies	Acre	1.00	$ 7.50	$ 7.50	$ 1,012.50
Hay Labor	Hours	10.80	$ 10.00	$ 108.00	$ 14,580.00
Interest	%	$ 255.81	7.50%	$ 19.19	$ 2,590.03
Total Variable Costs				$ 530.80	$ 71,657.52
Returns Over Variable Costs				***$ 674.20***	***$ 91,017.48***
Fixed Costs					
Prorated Establishment Costs (includes all costs until stand fully established)				$ 52.93	$ 7,146.19
Equipment Fixed Cost				$ 143.83	$ 19,416.56
Building Fixed Cost				$ 33.48	$ 4,520.00
Irrigation Fixed Cost				$ 101.95	$ 13,763.17
Management	% of VC	$ 530.80	5%	$ 26.54	$ 3,582.88
Total Fixed Costs				**$ 358.73**	**$ 48,428.80**
Total Costs				**$ 889.53**	**$ 120,086.32**
Returns Above Total Costs				***$ 315.47***	***$ 42,588.68***

IMPACT OF PERCENTAGE OF HORSE QUALITY HAY ON NET INCOME/ACRE

%Horse Hay	Revenue/acre	Net Income/Acre
100%	$ 1,400.00	$ 510.47
75%	$ 1,190.63	$ 301.10
67%	$ 1,123.63	$ 234.10
50%	$ 981.25	$ 91.72
33%	$ 838.88	$ (50.65)
0%	$ 562.50	$ (327.03)

ANALYZING LIQUIDITY (CASH-FLOW)

YIELD ASSUMPTIONS AND RESULTING REVENUE, VARIABLE COSTS AND RETURNS OVER VARIABLE COSTS (ROVC)

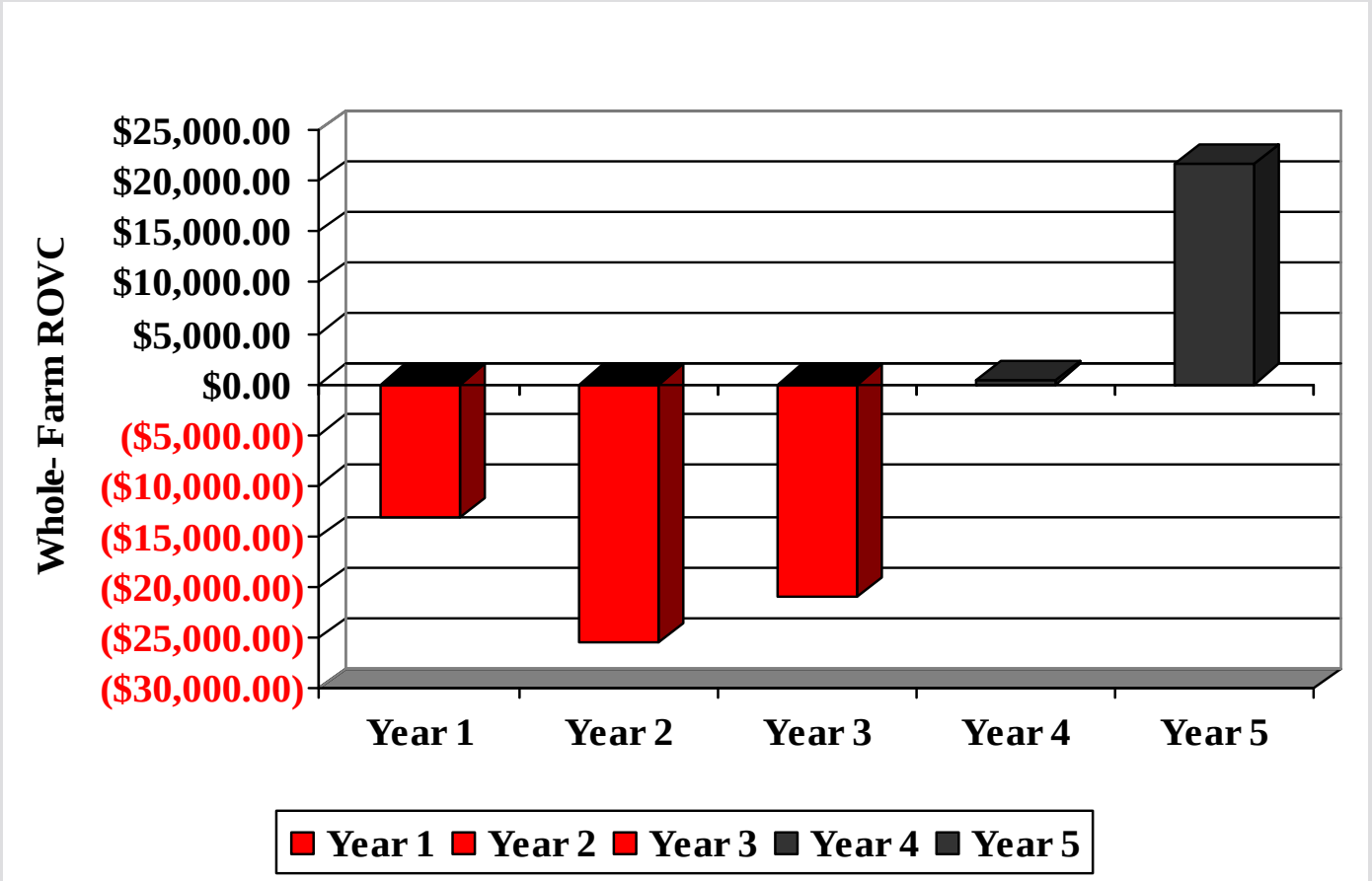
Year	Yield (tons)/Quality	Revenue ($/Acre)	Variable Costs ($/Acre)	ROVC ($/Acre)
Year 1	0 merchantable production	$0.00	$529.35	($529.35)
Year 2	1.0 ton/High Quality .75 ton/Medium Quality .75 ton/Low Quality	$505.00	$467.42	$37.58
Years 3-5	3.50 tons/High Quality 0.75 tons/Medium Quality 0.75 tons/Low Quality	$1,205.00	$532.27	672.73

High quality = $280/ton

Medium Quality = $125/ton

Low Quality = $100/ton

ACCUMULATED ROVC FOR PPH



GOOD STUFF TO KNOW

- Gross Margin = Revenue – Variable Costs
- Returns to Land and Labor are calculated by assuming $0 cost for that input and dividing Gross Margin by the units used.
- Returns to Land
  - = Gross Margin if no land charge
  - =(Gross Margin + Land Cost) if land charge included
- Returns to Labor
  - = (Gross Margin + labor cost)/hours of labor utilized
- Return on Capital
  - = Gross Margin/amount of capital required (total variable expenses)

PARTIAL BUDGETING

PARTIAL-BUDGETING AS A DECISION-AID

- Partial budgeting examines making only one change in an operation:
  - Enterprise mix
  - Technology adoption
  - Equipment investment
  - Etc., etc. ,
- Partial budgets include:
  - Additional revenue
  - Reduced cost
  - Additional expense
  - Reduced income

PARTIAL-BUDGETING AS A DECISION-AID

- Partial budgeting is useful for evaluating:
  - Purchases of new pieces of equipment
  - Replacing older equipment with newer equipment
  - Construction of facilities
  - Purchase of additional land
  - Evaluating rent vs. lease of land

Generic Partial Budgeting Form

Additional Costs	**Additional Revenue**
Reduced Revenue	**Reduced Costs**
Total additional costs +reduced revenue = A	**Total additional revenue +reduced costs = B**

Total Profit = B-A

EXAMPLE AS DETERMINED BY CLASS

While attending the SE Hay Convention a hay producer looks at the published hay budgets and considers replacing 100 acres of his existing mixed grass hay field with a hybrid Bermuda.

Current – Mixed grass
Yield = 4.50 t/ac
Price = $75/ton as round bales
Variable cost = $340/ac

Proposed – hybrid Bermuda
Yield = 6.0 t/ac
Price = $150/ton as round and square bales
Variable cost = $471/acre
Purchase baler = $6,261/yr

Completed Partial Budgeting Form for Example

Additional Costs	Additional Revenue
Future VC = $47,100 Baler Pmt. = $ 6,261 -Current VC = $34,000 Net Add'l VC = $19,361	Future Income = $90,000 -Current Income = $33,750 Net Add'l Income = $56,250
Reduced Revenue	**Reduced Costs**
Total additional costs +reduced revenue = $19,361	**Total additional revenue +reduced costs = B**

Total Profit = $36,689

OTHER ITEMS

Projected profit = $36,889

Breakeven price = $\frac{Additional\ Cost\ of\ \$19{,}361}{600\ tons\ production}$ = $61.48

Can he afford to forego the revenue from this 100 acres during the two years it takes to kill the existing stand and start the new one?

Since there were NEGATIVE returns over direct cost for the current situation YES!

If there had been positive returns we would have had to conduct more analysis.

SUMMARY

- When evaluating new enterprises consider both profitability and liquidity.
- Profitability is an indicator of long-term sustainability.
- Liquidity (cash-flow) is a short-term concept that refers to income being greater than outflow.
- Partial budgeting can be a very useful tool for analyzing isolated changes in an operation.

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More budgets and decision-aids can be downloaded at

www.secattleadvisor.com

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