AEB 0067
October 2021

LIVESTOCK ECONOMICS: COMPARING THE RETURNS AND COSTS OF PRODUCING BEEF CATTLE BETWEEN THREE SIZES OF COW-CALF ENTERPRISES IN THE INTERMOUNTAIN REGION OF NORTHEAST OREGON

Courtney Anderson, Leticia Henderson and Clark Seavert

Oregon State University OSU Extension Service

Livestock Economics: Comparing the Returns and Costs of Producing Beef Cattle between Three Sizes of Cow-Calf Enterprises in the Intermountain Region of Northeast Oregon

Courtney Anderson, Leticia Henderson, and Clark Seavert*

Introduction

Producers are familiar with the risks inherent in agriculture. However, it seems like a continuous struggle for livestock producers to manage the market, production, financial, human resource, and legal risks in the past decade. These risks can be in a single issue or as part of several complex issues, including market prices, feed costs, regulatory, labor and water cost and availability, predation, meat substitutes, and supply and demand of beef products to list a few. To mitigate these risks, owners of cow-calf enterprises must commit considerable time and financial resources to succeed in the livestock industry.

The cattle industry is essential to Oregon's economy and rural areas, such as northeastern Oregon. Based on the 2017 USDA NASS Census of Agricultural (Table 1), approximately 30 percent of all farms in Oregon sell cattle and calves, with a market value of almost $1B, which is about 20 percent of the total market value of agriculture in the state. On a percentage basis, it is important to note that 16 percent of the state's cattle and calves inventory are in three counties in northeastern Oregon, with more medium-sized operations between 100 to 499 head and fewer operations with less than 49 head, Table 1. The percentage of larger-sized operations in northeastern Oregon is more prominent because of many factors, including the vast amount of state and federal rangelands to graze livestock, available climate, irrigation water for hay production, etc. Although economies of size play a large part in potential profits, large-scale operations also have greater financial risk.

This study is intended for producers, industry leaders, and policymakers to analyze the economic and financial consequences of managing a cow-calf herd. We also discuss how this information used with decision tools can assist producers in making management decisions to increase profitability.

Table 1. USDA 2017 Census of Agriculture Livestock Data for the State of Oregon and Northeastern Oregon.

Number of Farm/Ranches, by Herd Size				
Size	Oregon	% of Total	NE Oregon[1]	% of Total
1-49	9,701	84.6%	481	58.6%
50-99	655	5.7%	119	14.5%
100-199	458	4.0%	102	12.4%
200-499	431	3.8%	86	10.5%
>500	218	1.9%	33	4.0%
Total	11,463	100.0%	821	100.0%
Percent of NE Oregon to State			7.2%	

Inventory of Cattle and Calves, by Herd Size				
Head	Oregon	% of Total	NE Oregon[1]	% of Total
1-49	89,684	16.6%	7,533	8.9%
50-99	43,497	8.1%	8,366	9.9%
100-199	63,627	11.8%	14,621	17.3%
200-499	131,846	24.5%	24,359	28.8%
>500	210,048	39.0%	29,697	35.1%
Total	538,702	100.0%	84,576	100.0%
Percent of NE Oregon to State			15.7%	

[1]NE Oregon includes Baker, Union, and Wallala counties

In a publication of this type, it is impossible to cover all combinations of variables, costs, and benefits combinations in cow-calf production. An common approach is to reflect the typical production practices common in the Intermountain Region of Northeast Oregon. For the following analysis, there are three beef cattle operations: Smaller ranches with 150 cows, medium herds with 300 cows, and larger herds modeled at 400 cows. However, there were consistencies in herd composition and characteristics across all three ranch types. These assumptions are:

1) **Herd characteristics.** Production flowcharts for each herd size show the conception, birth, weaning, death, and cull rates associated with managing a cowherd in northeastern Oregon, shown in Figures 1a, 1b, and 1c, page 11, 15, and 19, respectively.

*Courtney Anderson, former student, Department of Applied Economics, Oregon State University; Leticia Henderson, former Extension faculty and now a Lecturer in the Department of Agricultural and Applied Economics, University of Wyoming; and Clark Seavert, Department of Applied Economics, Oregon State University.

2) Timing of calving season. Bulls are turned out late April – late May for a February – March calving period. The bull to cow ratio is 25:1, although this value will vary significantly depending on terrain, pasture size, and bull age.
3) Cow death and culls**.** Ranches experience a two percent cow death loss and cull 16 percent of the breeding herd each year. Culling practices center on open cows, the age and condition of the cow.
4) Conception, birth, and calf death rates. A 95 percent conception rate and a 98 percent birth rate are assumed. By weaning, three percent of the calves are also lost.
5) Replacement heifers. Ranches raise their own replacement heifers by retaining 40 percent of the heifer calf crop; 80 percent of those heifers retained will enter the breeding herd. Across all ranch sizes, 93 percent of exposed cows and heifers will produce a calf.
6) Bull replacement. Approximately six percent of the bulls are replaced each year due to death and age. Replacement bulls will cost $4,000 each.
7) All ranches maintain six horses for labor. Replacement horses have a value of $2,000 each.
8) **Returns to the owner.** Calves are weaned between 7 to 8 months of age. Steer calves will weigh 550 pounds and heifers 525 pounds when marketed. Yearling heifers weigh 850 pounds, cull cows at 1,250 pounds, and cull bulls at 1,800 pounds. Prices received are $1.65, $1.60, $1.10, $0.65, and $0.85 per pound for steer calves, heifers calves, yearling heifers, cull cows, and cull bulls, respectively.
9) **Land.** The market value of owned land is $3,500 per acre.
10) **Grazing.** Cow-calf pairs graze for approximately two months on private land at the cost of $25 per AUM. Then, they feed for an additional five months on federal range at a fee of $1.35 per AUM.
11) **Purchased feed and supplements.** Purchasing hay costs $180 per ton, and preconditioning calves $6 per head. Mineral block salt for the herd and salt for calves are purchased at $1,000 and $270 per ton, respectively.
12) **Marketing**. Brand inspection and industry check-offs are $1.00 and $1.50 per head, respectively. An additional four percent for marketing fees apply to all sales.
13) **Vet and medicines**. An annual per head cost of $18 is assumed to manage herd health.
14) **Seasonal Labor.** During the haying season, calving, and winter feeding, additional hired labor costs $4,500, $6,000, and $6,000 for each size of operation, respectively.
15) **Fuel**. Gasoline, off-road, and on-road diesel costs are $3.75, $2.90, and $3.25 per gallon.
16) **Interest**. The interest rate on operating funds is six percent, which is a cash expense. Producers borrow one-half of these cash expenses for six months.
17) All medium- and long-term assets are assumed to be owned without debt and treated as a fixed non-cash opportunity cost to the owner. Thus, the compensation rate for these opportunity costs is four percent for machinery, land three percent, and livestock two and a half percent. The resulting dollar values for the opportunity costs for livestock are in Tables 2a, 2b, and 2c on pages 13, 17, and 21.
18) **Other assumptions**. Other assumptions for variable, cash fixed, and non-cash fixed costs are listed in Table 2, page 9.
19) **Omitted from this study**. Not included in this study is a return to management, owner labor, family living withdrawals, an accounting for all regulatory costs, annual price and yield volatility, price inflation, and local, state, and federal income taxes paid by the owner.

150-head operation assumptions

20) **Feed and supplements.** The quantity of purchased minerals, salts, and supplements shown in Table 2 are essential to maintain herd health for 150 mature cows and heifers, 28 replacement heifers, and six bulls.
21) **Land ownership.** The ranch owns 200 acres, consisting of a house, barn, shed, other outbuildings, pasture, etc.
22) **Hay production.** From mid-November to mid-May, the herd requires 420 tons of purchased hay.
23) **Repairs, supplies, and utilities.** Materials for fence repairs have an annual cost of $750.

Ranch supplies and utilities have yearly assessments of $7,000 each, or $14,000 annually.

24) **Full-time Labor.** A single-family provides most of the labor for this size of operation.
25) **Machinery and Equipment**. The machinery and equipment reflect the typical machinery complement of a 150-head cow-calf operation. A detailed breakdown of machinery values is in Appendix A, Table 3a, page 13, and estimated machinery costs in Table 4a, page 14.

300-head operation assumptions

26) **Feed and supplements.** The quantity of purchased minerals, salts, and supplements shown in Table 2 are essential to maintain herd health for 300 mature cows and heifers, 55 replacement heifers, and 12 bulls.
27) **Land ownership.** The ranch owns 600 acres, consisting of two houses, a barn, sheds, other outbuildings, pasture, and irrigated land for hay production.
28) **Hay production.** From mid-November to mid-May, the herd requires 839 tons of hay produced on this ranch.
29) **Repairs, supplies, and utilities.** Materials for fence repairs have an annual cost of $1,000, ranch supplies and utilities are $10,000 each, or $20,000 annually.
30) **Irrigation and water assessment.** Electricity for irrigating hay is $15,000 annually, with an additional $15,000 for water assessment.
31) **Full-time Labor.** Two families provide most of the labor for this size of operation.
32) **Machinery and Equipment**. The machinery and equipment reflect the typical machinery complement of a 300-head cow-calf operation. A detailed breakdown of machinery values is in Appendix B, Table 3b, page 17, estimated machinery costs in Table 4b, page 18, and hay equipment costs in Table 5b, page 18.

400-head operation assumptions

33) **Feed and supplements.** The quantity of purchased minerals, salts, and supplements shown in Table 2 are essential to maintain herd health for 400 mature cows and heifers, 73 replacement heifers, and 16 bulls.
34) **Land ownership.** The ranch owns 750 acres, consisting of two houses, a barn, sheds, other outbuildings, pasture, and irrigated land for hay production.
35) **Hay production.** From mid-November to mid-May, the herd requires 1,118 tons of hay produced on this ranch.
36) **Repairs, supplies, and utilities.** Materials for fence repairs have an annual cost of $1,000, and ranch supplies and utilities are $12,000 each, or $24,000 annually.
37) **Irrigation and water assessment.** Electricity for irrigating hay is $15,000 annually, with an additional $15,000 for water assessment.
38) **Full-time Labor.** Two families provide most of the labor for this size of operation.
39) **Machinery and Equipment**. The machinery and equipment reflect the typical machinery complement of a 400-head cow-calf operation. A detailed breakdown of machinery values is in Appendix C, Table 3c, page 21, estimated machinery costs in Table 4c, page 22, and hay equipment costs in Table 5c, page 22.

Results of producing calves in a 150-head cow-calf operation

Economic costs and returns

The gross income, variable, and fixed costs for producing calves in a 150-head cow-calf operation are in Table 3, page 10. The gross returns are $117,833 (or $786 per cow when these gross returns are divided by 150). Gross returns are from sale of 68 head of steer calves, 41 heifer calves, five yearling heifers, 20 cull cows, and one cull bull. Total variable cash costs are $174,999 ($1,167 per cow) for a return over variable costs of -$57,166 (-$381 per cow).

The major cost components related to total variable cash costs are purchased feed at 43 percent, followed by supplies, utilities, and repairs at 33 percent. The remaining six cost items make up 24 percent of the total variable cash costs.

Total fixed costs are $80,604 ($537 per cow) resulting in a net return for this operation of -$137,770, or -$918 per cow).

For detailed returns and costs, refer to Table 3a, page 12.

Results of producing calves in a 300-head cow-calf operation

Economic costs and returns

The gross income, variable, and fixed costs for producing calves in a 300-head cow-calf operation are in Table 3, page 10. The gross returns are $233,673 ($779 per cow when these gross returns are divided by 300). Gross returns are from sale of 134 head of steer calves, 74 heifer calves, 11 yearling heifers, 45 cull cows, and two cull bulls. Total variable cash costs are $171,807 ($573 per cow) for a return over variable costs of $61,866 ($206 per cow).

The major cost components related to total variable cash costs are supplies, utilities, and repairs at 40 percent, followed by irrigation expenses and other and miscellaneous expenses at 17 and 16 percent, respectively. The remaining five cost items make up 27 percent of the total variable cash costs.

Total fixed costs are $169,021 ($563 per cow) resulting in a net return for this operation of -$107,155, or -$357 per cow).

For detailed returns and costs, refer to Table 3b, page 16.

Results of producing calves in a 400-head cow-calf operation

Economic costs and returns

The gross income, variable, and fixed costs for producing calves in a 400-head cow-calf operation are in Table 3, page 10. The gross returns are $312,968 ($782 per cow when these gross returns are divided by 400). Gross returns are from sale of 179 head of steer calves, 99 heifer calves, 15 yearling heifers, 60 cull cows, and three cull bulls. Total variable cash costs are $204,862 ($512 per cow) for a return over variable costs of $108,105 ($270 per cow).

The major cost components related to total variable cash costs are supplies, utilities, and repairs at 39 percent, followed by other and miscellaneous, irrigation expenses, and grazing fees at 17, 15, and 13 percent, respectively. The remaining four cost items make up 16 percent of the total variable cash costs.

Total fixed costs are $192,904 ($482 per cow) resulting in a net return for this operation of -$84,799, or -$212 per cow).

For detailed returns and costs, refer to Table 3c, page 20.

Conclusion

The results should not surprise anyone familiar with the livestock industry; a few observations are:

1. It is essential in smaller-sized operations for one or both spouses to work off the farm to supplement the family's income and receive health insurance and other benefits.
2. Economies of size make a difference to an operation's ability to spread costs over more cow numbers but not necessarily generate long-term profitability.
3. A prudent investor would not consider investing in a cow-calf enterprise without anticipating an increased value in the land or supplemental income sources, such as establishing a solar or wind farm.

There are three key concepts to consider in the livestock industry: profits, profitability, and financial feasibility. The following discussion of these concepts links economic theory and financial analysis to the outcomes of this study, in order to provide insights for producers in their efforts to determine management strategies for long-term business success.

Profit Maximization Theory and Measuring Profitability

There are many choices that can affect operating costs and potential for generating sale revenues when owning a cow-calf enterprise. A few of them include managing:

1. Feed costs.
2. Predators.
3. Conception rates of the cowherd
4. Calving rates
5. Weaning weights
6. Sale weights

What is often misunderstood is that there is an absolute either/or trade-off in order to maximize profits. This misunderstanding results in ranchers concluding that the only way to increase profits is to avoid or cut costs. There are two flaws to this reasoning. First, in some situations, it may be necessary to increase operating costs in order to increase profits. This is possible as long as these increases in input costs result in an increase in sales revenues. The second flaw in this cost minimizing "penny-wise, pound-foolish" mental trap is related to attitudes about risks. Spending more money on more costly inputs may increase perceived and/or actual risks. Hence, many producers are good at minimizing costs but are not able to maximize profits because they are not making investments in technology / genetics / quality or scale (expansion). It is logical for producers to be risk averse, but if done in excess it can impede the adoption of much-needed investments. The enterprise will not be able to compete with other producers who do make the investments and associated changes. Therefore, the risk aversion may actually end up creating more risk than there otherwise would be. This can lead ranchers to focus on avoiding or reducing expenses when they should be seeking profit-maximizing strategies by investing dollars in:

1. Introducing quality genetics into the cowherd.
2. Increasing weight gain conversion rates.
3. Technologies, techniques, and facilities to increase efficiencies, lower per-unit costs, or increased revenues.

Economic theory suggests investing dollars as long as marginal revenues are greater than marginal costs. A few examples would be investing in the following, as long as the producer applies the profit maximization theory:

1. Quality sires.
2. Artificial insemination.
3. Purchasing higher quality bred heifers vs. raising heifers.
4. Feeding supplements and minerals for higher calf weights.
1. Facilities that provide shelter to increase calving and weaning rates and market weights.

As the adage goes, sometimes it takes money to make money!

Another mental trap is thinking only in terms of on-going costs and concluding that all is well as long as there are profits (defined as sales revenues minus operating costs is a positive, so greater than zero). But this reasoning does not take into account the profitability of the cow-calf operation. As with most beef cattle investments, there both are up-front investments and ongoing costs. The financial metric of net present value captures the total up-front investments and stream of future net cash flows of a potential investment in order to measure profitability. While profit is an absolute measure of a positive gain from an investment, profitability is the profit relative to the size of the investment. For example, compare two investments when both earn $1,000 in profits. One of these investments was for $10,000, and the other was for $100,000. The $10,000 investment had better profitability, even though both investments generated equal amounts of profits. Profitability measures the efficiency of the investment to generate profit, as in an internal rate of return. Unlike profit, profitability is a relative measure of the rate of return expected on capital investments, or the size of the return, compared to what could have been earned from an alternative investment (opportunity cost). Therefore, projecting the returns from new technology can generate a profit but not necessarily provide long-term profitability.

Addition through Subtraction

It is common for cattle producers to cull their herds hard during times of drought to save feed costs. However, there are times that producers hang on to old, unproductive cows or raise their replacement heifers having marginal qualities that drain annual net incomes. These strategies can lead to an overall older cow herd, low conception rates, and lower weaning weights.

A two-prong approach could benefit beef producers: addition through subtraction and applying financial management principles to existing resources to purchase replacement heifers and cows when droughts subside or introduce better genetics into a cowherd. The addition through subtraction concept suggests selling old, unproductive cows when the revenues from their calves do not exceed cash variable costs, which could result in lower than usual cow numbers. However, this strategy allows producers to allocate resources to better-performing cows in the herd, applying the profit maximization theory described above. Many times, this allocation of resources can increase overall net farm income.

The other strategy analyzes the business's financial strength and the returns on the money invested in the cow-calf operation; it establishes benchmarks to key financial ratios and performance measures to determine if one can and should make the funds available to invest in bred heifers and cows to build herds or introduce better genetics into a herd. Over the long run, these two strategies can create opportunities to increase cow numbers faster with more productive cows with heavier market calves, resulting in increased net farm incomes.

Applying Theory to Study Results

The results in this study reveal several potential economic and financial impacts on beef producers. To use this information in an analysis, a cost-benefit analysis of increasing the sales weight of steer and heifer calves by five percent and increasing conceptions rates one percent (from 95 to 96 percent) could impact profits. Although we will rely on the producer to estimate the many options to obtaining higher weights and conception rates, calculating the benefits will provide one piece of the puzzle in this type of analysis.

The second analysis will focus on the high opportunity costs of owning long-term assets to manage a cow-calf enterprise. A sensitivity analysis will illustrate these impacts by modifying return on investment (ROI) rates to 0 percent for machinery, livestock, land ownership, including 0 percent ROI for all three assets simultaneously.

Cost-benefit analysis: One example to illustrate the usefulness of a cost and benefit analysis is increasing the sale weight of steer and heifer calves by five percent. Although selling more pounds of calves and subtracting the additional marketing costs is a straightforward analysis, it shows a range of increasing revenues from $4,400 to about $12,000 annually, depending on the herd size. The producer can then develop a plan to increase calf weight with their options, such as increasing supplement minerals and salts, higher quality feeds, etc.

However, when increasing conception rates by one percent, the analysis is a little more complex. As calf numbers increase, so do the costs for feed, minerals, salt, and preconditioning calves. The number of calves to sell is not linear because calving, weaning, and death loss rates will also impact the number of calves sold. However, after these adjustments, the producer can expect an increase in annual revenues of $860 to $3,400, depending on herd size. So whatever the producer can do to increase conception rates for less than the potential revenues, annual net incomes will increase (Figure 1, page 10).

Sensitivity analysis: When considering all economic costs before modifying the ROIs, the net returns show that neither of the three cow-calf enterprises creates long-term profitability. The net returns for a 150-head cow-calf enterprise is -$138,000, -$107,000 for a 300-head, and -$85,000 for a 400-head operation Figure 2, page 10.

A sensitivity analysis demonstrates how opportunity costs impact the ownership of medium- and long-term assets with the following four scenarios:

1. Modifying the opportunity costs for machinery from four to zero percent results in net returns increasing, but still negative net returns for all three: -$120,000 for a 150-head cow-calf enterprise, -$83,000 for a 300-head, and -$60,000 for a 400-head operation.
2. Modifying the opportunity costs for livestock ownership from two and a half to zero percent results in the net returns increasing, but remain negative net returns for all operations: -$132,000 for a 150-head cow-calf enterprise, -$95,000 for a 300-head, and -$69,000 for a 400-head operation.
3. Modifying the opportunity costs for the investment in land from three to zero percent results in the net returns increasing for all three size operations, but again all negative net returns: -$116,000 for a 150-head cow-calf enterprise, -$44,000 for a 300-head, and -$6,000 for a 400-head operation.
4. Modifying the opportunity costs for all medium- and long-term investments in machinery, livestock, and land to zero percent. This scenario results in significant increases to net returns; however, continued negative net returns for the two smaller operations but the 400-head operation showing a positive net return: -$93,000 for 150-head, -$8,800 for a 300-head cow-calf operation and, a positive $35,000 for a 400-head operation.

This sensitivity analysis clearly shows the impact opportunity costs have on the three livestock enterprises and the importance of economies of size.

Takeaways from this study

Livestock producers understand the risks involved in ranching, recognizing they could make more money in alternative investments of similar risk and receiving a much higher return on their investment. Another takeaway is the importance of spouses working off the ranch. In addition, if the producer accounted for their time, effort, and money to mitigate regulations of all types, the results of this study would even be more dire.

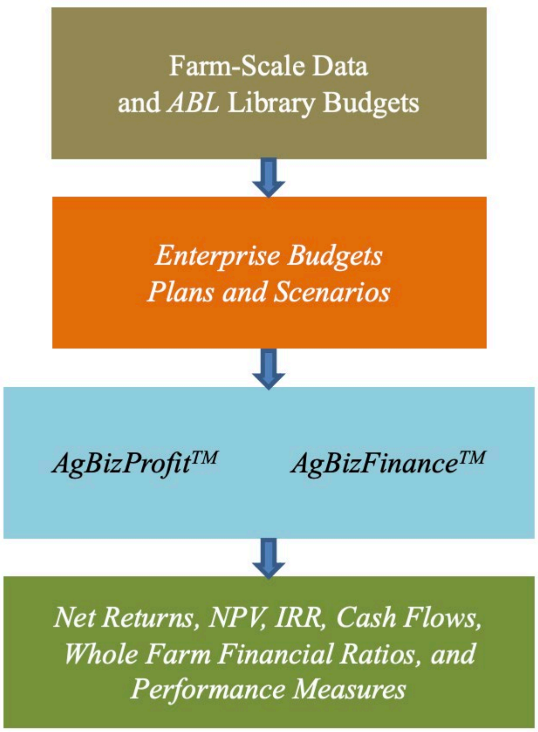
One main criticism of university cost studies is they do not reflect a specific grower's costs for their farm. In addition, they include too many economic costs and assumptions that some producers do not have. The following section will discuss how growers can use the *AgBiz Logic* decision tool to modify the information from this study as their own.

Using AgBizLogic™ to Analyze Different Price and Yield Scenarios

Using different price and yield scenarios can provide producers with a greater appreciation of the financial risk involved in livestock production. Numerous factors and unforeseen events can impact conception, calving, and weaning weights, market prices, losses from predators, and challenges to finding qualified labor, which this study ignores.

AgBiz Logic™ (*ABL*) is an online decision tool that considers economic and financial factors when analyzing investments. The following schematic shows the data flow and results from the ABL decision tool. Grower farm-level data is collected from the tax form Schedule F (Form1040) to generate enterprise budgets. Enterprise budgets from universities, industry, and USDA-ERS are stored in the ABL

Library for grower use when returns and inputs are unknown (brown). Enterprise budgets are sequenced in ABL plans and adjusted for inflation, discount rates, and beginning and ending investment values which provide the basis for a capital investment analysis (orange). Scenarios consist of several plans that can be compared and required for the ABL tools (blue) to calculate the economic and financial outputs (green).



The *AgBizProfit™* module enables users to make competent capital investment decisions by measuring an investment's profitability based on its Net Present Value, Internal Rate of Return, and cash flow breakeven.

The module *AgBizFinance™* empowers producers to make whole-farm investment decisions based on 20 financial ratios and performance measures. With this program, users input their current balance sheet information, loans, and capital leases.

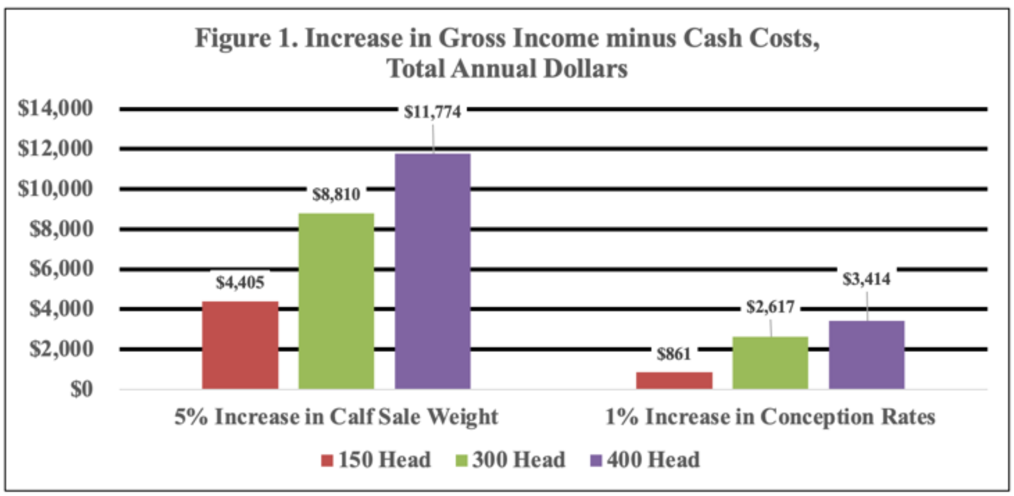
AgBizFinance uses this information with plans and scenarios to generate up to 10-years of proforma cash flow statements, balance sheets, and income statements. As a result, producers can evaluate how livestock management strategies can impact their short- and long-term finances and how best to fund capital investments.

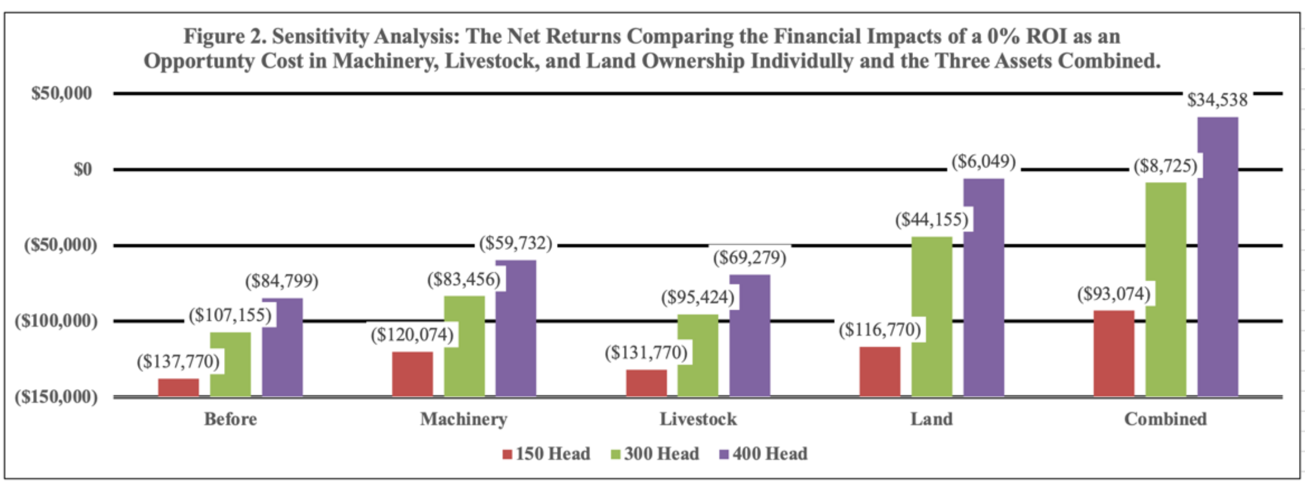
These *AgBizLogic* decision tools can be accessed at https://www.agbizlogic.com currently at no cost. Also, budgets from this study will be available in the *ABL* Library.

The authors recommend that before investing in any medium- and long-run assets that producers use *AgBiz Logic* modules to thoroughly analyze the profitability and financial feasibility of potential investments under varying price and yield scenarios.

Table 2. Input Assumptions for Variable and Fixed Costs, by Herd Size.			
Cost Item	150 Head	300 Head	400 Head
Private land - Pasture ($/AUM)		25.00	
Private land - Pasture, months		2.00	
Federal range ($/AUM)		1.35	
Federal range, months		5.00	
Purchased hay, tons	421.00	NA	NA
Purchased hay ($/tons)		180.00	
Hay grown for feed, tons	NA	900.00	1,200.00
Grown hay fed, tons	NA	840.00	1,119.00
Precondition calves ($/head)		6.00	
Minerals, Block salt ($/ton)		1,000.00	
Minerals, Block salt, tons	1.00	2.00	3.00
Minerals, calves ($/ton)		200.00	
Minerals, calves, tons	2.00	4.00	5.50
Seasonal labor, ($ annually)	4,500.00	6,000.00	6,000.00
Fence repair material ($ annually)	750.00	1,000.00	1,000.00
Supplies ($ annually)	7,000.00	10,000.00	12,000.00
Utilities ($ annually)	7,000.00	10,000.00	12,000.00
Irrigation - electricity ($ annually)	NA	15,000.00	15,000.00
Water Assessment ($ annually)	NA	15,000.00	15,000.00
Vet & medicine ($/head)		18.00	
Brand inspection ($/head)		1.00	
Check off ($/head)		1.50	
Bull purchase ($/head)		4,000.00	
Horse purchase ($/head)		2,000.00	
Marketing fees (%)		4.00	
Accounting & legal ($ annually)	2,000.00	4,000.00	4,000.00
Miscellaneous ($ annually)	5,000.00	10,000.00	12,000.00
Property Taxes ($ annually)	2,500.00	4,500.00	4,500.00
Property Insurance ($ annually)	4,000.00	14,000.00	14,000.00
Gasoline price ($/gallon)		3.75	
Off-road diesel price ($/gallon)		3.25	
On-road diesel price ($/gallon)		2.90	
Interest rate - operating capital (%)		6.00	
Interest rate - livestock ownership (%)		2.50	
Interest rate - machinery ownership (%)		4.00	
Interest rate - land ownership (%)		3.00	
Interest rate - hay grown for feed (%)	NA	3.00	3.00
Land value ($/acre)		3,500.00	
Land ownership per ranch, acres	200.00	600.00	750.00
Percent of operating capital borrowed		50.00	
Months to borrow operating capital		6.00	

Table 3. Incomes, Variable and Fixed Costs per Cow Calf Operation									
	150 Head			300 Head			400 Head		
Gross Income	Total Herd	*% of Category*	Per Head	Total Herd	% of Category	Per Head	Total Herd	*% of Category*	Per Head
Steer Calves	$60,803	*52%*	$405	$121,605	52%	$405	$162,443	*52%*	$406
Heifer Calves	31,080	*26%*	207	62,160	27%	207	83,160	*27%*	208
Yearling Heifers	6,545	*6%*	44	10,285	4%	34	14,025	*4%*	35
Cull Cows	17,875	*15%*	119	36,563	16%	122	48,750	*16%*	122
Cull Bulls	1,530	*1%*	10	3,060	1%	10	4,590	*1%*	11
Total GROSS Income	$117,833		$786	$233,673		$779	$312,968		$782
Variable Costs									
Grazing and Pasture Fees	$9,994	*6%*	$67	$20,072	12%	$67	$26,735	*13%*	$67
Purchased Feed	75,735	*43%*	505	0	0%	0	0	*0%*	0
Minerals and Other Supplements	2,024	*1%*	13	4,048	2%	13	5,768	*3%*	14
Hired Labor	4,500	*3%*	30	6,000	3%	20	6,000	*3%*	15
Supplies, Utilities, Fuel, Repairs, etc	57,814	*33%*	385	67,880	40%	226	80,209	*39%*	201
Irrigation - Electricity & Assessmen	0	*0%*	0	30,000	17%	100	30,000	*15%*	75
Vet and Medicines	2,736	*2%*	18	5,490	3%	18	7,308	*4%*	18
Marketing Costs and Fees	5,299	*3%*	35	10,512	6%	35	14,076	*7%*	35
Other and Miscellaneous Costs	16,897	*10%*	113	27,804	16%	93	34,767	*17%*	87
Total VARIABLE Costs	$174,999		$1,167	$171,807		$573	$204,862		$512
Gross Income minus Variable Costs	($57,166)		($381)	$61,866		$206	$108,105		$270
Total FIXED Costs	$80,604		$537	$169,021		$563	$192,904		$482
Total Net Returns	($137,770)		($918)	($107,155)		($357)	($84,799)		($212)





APPENDIX A
150-Head Cow Calf Enterprise

Figure 1a. 150-Head Operation, Production Flowchart.

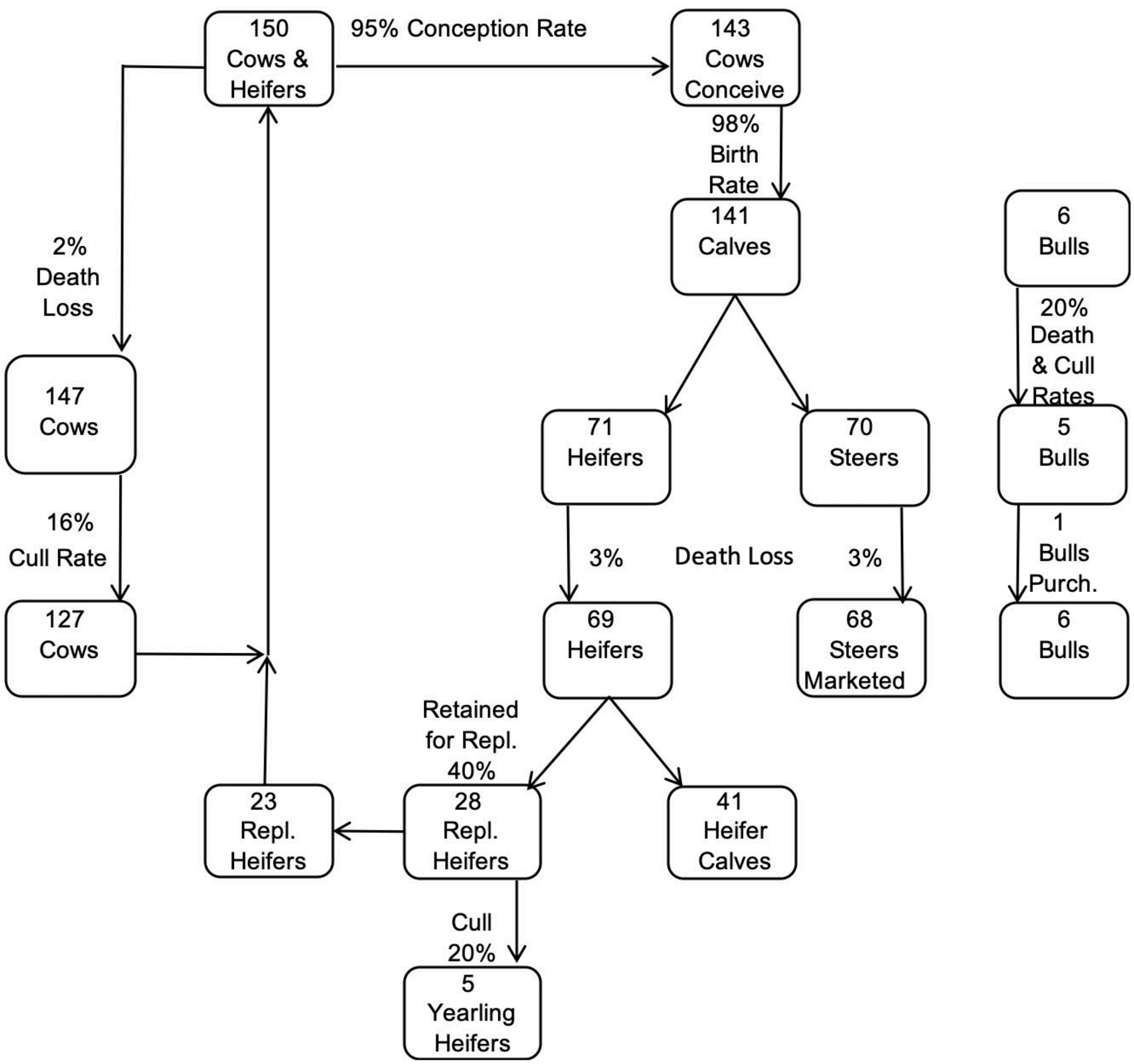


Table 1a. (150-Head Operation). Economic Costs and Returns.

GROSS INCOME	Quantity			Unit	$/Unit	Total	Per Cow
Steer Calves	67	hd	5.50	cwt	$165.00	$60,803	$405.35
Heifer Calves	37	hd	5.25	cwt	160.00	31,080	207.20
Yearling Heifers	7	hd	8.50	cwt	110.00	6,545	43.63
Cull Cows	22	hd	12.50	cwt	65.00	17,875	119.17
Cull Bulls	1	hd	18.00	cwt	85.00	1,530.00	10.20
Total GROSS Income						$117,833	$785.55

VARIABLE CASH COSTS Description	Quantity	Unit	$/Unit	Total	Per Cow
Private Land - Pasture	2.00	month	$25.00	$8,805	$58.70
Federal Range	5.00	month	1.35	1,189	7.92
Purchased Hay	420.75	ton	180.00	75,735	504.90
Precondition Calves	104.00	head	6.00	624	4.16
Block Salt	2.00	ton	200.00	400	2.67
Minerals, calves	1.00	ton	1,000.00	1,000	6.67
General Labor	1.00	month	4,500.00	4,500	30.00
Machinery & Equipment: fuel, lube & repairs		annual		43,064	287.09
Fence Repair Material		annual		750	5.00
Supplies		annual		7,000	46.67
Utilities		annual		7,000	46.67
Vet & Medicine	**152.00**	head	18.00	2,736	18.24
Brand Inspection	385.00	head	1.00	385	2.57
Check Off	134.00	head	1.50	201	1.34
Bull Purchase	1.00	head	4,000.00	4,000	26.67
Horse Purchase	0.40	head	2,000.00	800	5.33
Marketing Fees	4.00	percent	117,832.50	4,713	31.42
Accounting & Legal		annual		2,000	13.33
Miscellaneous		annual		5,000	33.33
Interest: Operating Capital	6.00	month	169,901.63	5,097	33.98
Total VARIABLE COSTS				$174,999	$1,166.66

FIXED CASH COSTS		Total	Per Cow
Property Taxes	annual	$2,500	$16.67
Property Insurance	annual	4,000	26.67
Total CASH Costs		$6,500	$43.33
GROSS INCOME minus VARIABLE AND FIXED CASH COSTS		($63,666)	($424.44)
NON-CASH Costs			
Machinery and Equipment - Depreciation & Interest		$23,277	$155.18
Pickup & ATV, etc. - Depreciation & Interest		23,827	158.85
Interest (Livestock Opportunity Costs)		6,000	40.00
Land Interest Charge		21,000	140.00
Total NON-CASH Costs		$74,104	$494.03
Total FIXED COSTS		$80,604	$537.36
Total of All Costs		$255,603	$1,704.02
Net Projected Returns		($137,770)	($918.47)

Table 2a. 150-Head Operation, Livestock Opportunity Costs.				
Livestock	Opportunity Cost per Head	# Head	Opportunity Cost by Class of Livestock	Opportunity Cost per Cow
Bulls	$100.00	6	$600.00	$4.00
Cows	33.75	128	4,320.00	28.80
Horses	50.00	6	300.00	2.00
Replacement Heifers	32.50	24	780.00	5.20
Total			$6,000.00	$40.00

Table 3a. 150-Head Operation, Machinery & Livestock Cost Assumptions.						
Machinery & Livestock	Size & Number	Condition	Market Value	Annual Use for Farm		Expected Life (yrs)
Tractor	4 Wheel Dr 160 hp	Newer	$98,000	200	hours	15
Tractor & Loader	4 Wheel Dr 80 hp	Used	45,000	200	hours	10
Pickup	1 Ton 4X4	Newer	62,000	15,000	miles	8
Pickup	3/4 Ton 4X4	Used	35,000	15,000	miles	6
ATV	Utility Style	Newer	6,000	2,000	miles	4
Side-by-Side	2-Person	Newer	8,000	2,000	miles	4
Feeder/Mixer Truck		Used	35,000	2,000	miles	10
Gooseneck Flatbed	25'	Used	8,000	1	year	10
Stock Trailer	16'	Used	7,500	1	year	10
Mineral Feeders			300	NA		10
Feed Bunks			44,000	NA		20
Corrals, chute, etc			34,000	NA		20
Hay Shed	350 Ton		10,000	NA		30
Shop/Shed	40' x 20'		15,000	NA		30
Bulls	6		4,000	NA		4
Cows	128		1,350	NA		9
Replacement Heifers	24		1,300	NA		11
Horses	6		2,000	NA		15

Table 4a. 150-Head Operation, Machinery & Livestock Cost Calculations.									
		-------- Costs per Hour, Mile or Year --------							
		-- Variable Costs --		-- Fixed Costs --			------ Cost per Cow ------		
Machine	Size	Fuel & Lube	Repairs & Maint.	Deprec-iation	Interest	Total Cost	Variable	Fixed	Total
		----------------- Costs per Hour -----------------							
Tractor	4 Wheel Dr 160 hp	$29.90	$0.88	$26.41	$23.35	$80.55	$41.04	$66.35	$107.40
Tractor & Loader	4 Wheel Dr 80 hp	14.95	0.27	16.82	11.27	43.31	20.29	37.46	57.75
		----------------- Costs per Mile -----------------							
Pickup	1 Ton 4X4	$0.36	$0.21	$0.47	$0.16	$1.19	$56.64	$62.07	$118.71
Pickup	3/4 Ton 4X4	0.36	0.19	0.35	0.16	1.06	55.34	50.57	105.91
ATV	Utility Style	3.59	0.12	0.68	0.56	4.95	49.52	16.51	66.03
Side-by-Side	2-Person	2.16	0.12	0.90	0.56	3.74	30.35	19.51	49.86
Feeder/Mixer Truck		0.86	0.41	1.23	0.44	2.94	17.02	22.18	39.20
		----------------- Costs per Year -----------------							
Tractor Implements		NA	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Gooseneck Flatbed		NA	240.00	600.00	200.00	1,040.00	1.60	5.33	6.93
Stock Trailer		NA	225.00	562.50	187.50	975.00	1.50	5.00	6.50
Mineral Feeders		NA	9.00	22.50	7.50	39.00	0.06	0.20	0.26
Feed Bunks		NA	880.00	1,650.00	1,100.00	3,630.00	5.87	18.33	24.20
Corrals, chute, etc		NA	680.00	1,275.00	850.00	2,805.00	4.53	14.17	18.70
Hay Shed		NA	200.00	250.00	250.00	700.00	1.33	3.33	4.67
Shop/Shed		NA	300.00	375.00	375.00	1,050.00	2.00	5.00	7.00

APPENDIX B
300-Head Cow Calf Operation

Figure 1b. 300-Head Operation, Production Flowchart.

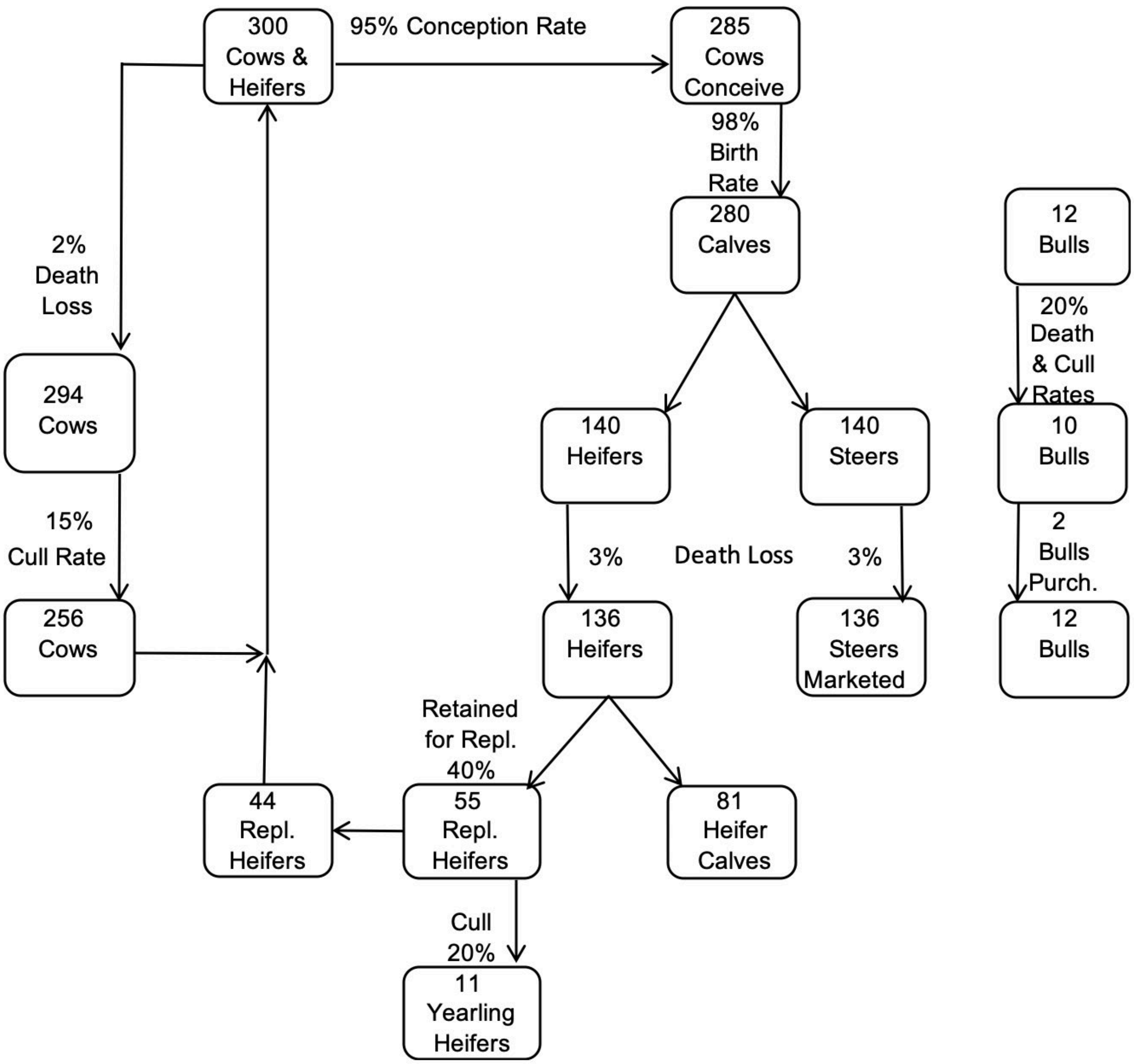


Table 1b. 300-Head Operation, Economic Costs and Returns.

GROSS INCOME	Quantity			Unit	$/Unit	Total	Per Cow
Steer Calves	134	hd	5.50	cwt	$165.00	$121,605	$405.35
Heifer Calves	74	hd	5.25	cwt	160.00	62,160	207.20
Yearling Heifers	11	hd	8.50	cwt	110.00	10,285	34.28
Cull Cows	45	hd	12.50	cwt	65.00	36,563	121.88
Cull Bulls	2	hd	18.00	cwt	85.00	3,060	10.20
Total GROSS Income						$233,673	$778.91

VARIABLE CASH COSTS Description	Quantity	Unit	$/Unit	Total	Per Cow
Private Land - Pasture	2.00	month	$25.00	$17,685	$58.95
Federal Range	5.00	month	1.35	2,387	7.96
Precondition Calves	208.00	head	6.00	1,248	4.16
Block Salt	4.00	ton	200.00	800	2.67
Minerals, calves	2.00	ton	1,000.00	2,000	6.67
General Labor	1.00	month	6,000.00	6,000	20.00
Machinery & Equipment: fuel, lube & repairs		annual		46,880	156.27
Fence Repair Material		annual		1,000	3.33
Supplies		annual		10,000	33.33
Utilities		annual		10,000	33.33
Water Assessment		annual		15,000	50.00
Irrigation - Electricity		annual		15,000	50.00
Vet & Medicine	**305.00**	head	18.00	5,490	18.30
Brand Inspection	766.00	head	1.00	766	2.55
Check Off	266.00	head	1.50	399	1.33
Bull Purchase	2.00	head	4,000.00	8,000	26.67
Horse Purchase	0.40	head	2,000.00	800	2.67
Marketing Fees	4.00	percent	233,672.50	9,347	31.16
Accounting & Legal		annual		4,000	13.33
Miscellaneous		annual		10,000	33.33
Interest: Operating Capital	6.00	month	166,802.44	5,004	16.68
Total VARIABLE COSTS				$171,807	$572.69

FIXED CASH COSTS		Total	Per Cow
Property Taxes	annual	$4,500	$15.00
Property Insurance	annual	14,000	46.67
Total CASH Costs		$18,500	$61.67
GROSS INCOME minus VARIABLE AND FIXED CASH COSTS		$43,366	$144.55

NON-CASH Costs		
Machinery and Equipment - Depreciation & Interest	$40,372	$134.57
Pickup & ATV - Depreciation & Interest	35,090	116.97
Interest - (Hay Opportunity Cost)	328	1.09
Interest - (Livestock Opportunity Costs)	11,731	39.10
Land Interest Charge	63,000	210.00
Total NON-CASH Costs	$150,521	$501.74
Total FIXED COSTS	$169,021	$563.40
Total of All Costs	$340,828	$1,136.09
Net Projected Returns	($107,155)	($357.18)

Table 2b. 300-Head Operation, Livestock Opportunity Costs.				
Livestock	Opportunity Cost per Head	# Head	Opportunity Cost by Class of Livestock	Opportunity Cost per Cow
Bulls	$100.00	12	$1,200.00	$4.00
Cows	33.75	255	8,606.25	28.69
Horses	50.00	6	300.00	1.00
Replacement Heifers	32.50	50	1,625.00	5.42
Total			$11,731.25	$39.10

Table 3b. 300-Head Operation, Machinery & Livestock Cost Assumptions.						
Machinery & Livestock	Size & Number	Condition	Market Value	Annual Use for Farm		Expected Life (yrs)
Tractor	4 Wheel Dr 160 hp	Newer	$98,000	200	hours	15
Tractor & Loader	4 Wheel Dr 80 hp	Used	56,000	200	hours	10
Tractor & Loader	4 Wheel Dr 80 hp	Used	45,000	200	hours	10
Swather	16' Self-propelled	Newer	84,000	39	hours	15
Baler	1,200 LB Square	Newer	72,000	25	hours	15
Pickup	1 Ton 4X4	Newer	75,000	15,000	miles	8
Pickup	3/4 Ton 4X4	Used	35,000	15,000	miles	6
ATV	Utility Style	Used	6,000	2,000	miles	4
Side-by-Side	2-Person	Newer	8,000	2,000	miles	4
Feeder/Mixer Truck		Newer	155,000	2,000	miles	10
Tractor Implements	Rake, disc, etc.	Used	3,600	1	year	15
Gooseneck Flatbed	25'	Newer	13,000	1	year	10
Stock Trailer	16'	Used	7,500	1	year	10
Mineral Feeders			300	NA		10
Feed Bunks			33,000	NA		20
Corrals, chute, etc			34,000	NA		20
Hay Shed	690 Ton		20,000	NA		30
Shop/Shed	40' x 20'		15,000	NA		30
Bulls	12		4,000	NA		4
Cows	250		1,350	NA		9
Replacement Heifers	50		1,300	NA		11
Horses	6		2,000	NA		15

Table 4b. 300-Head Operation, Machinery & Livestock Cost Calculations.

Machine	Size	Fuel & Lube	Repairs & Maint.	Deprec-iation	Interest	Total Cost	Variable	Fixed	Total
		-------- Costs per Hour, Mile or Year --------					------ Cost per Cow ------		
		-- Variable Costs --		-- Fixed Costs --					
		----------------- Costs per Hour -----------------							
Tractor	4 Wheel Dr 160 hp	$29.90	$0.88	$26.41	$23.35	$80.55	$20.52	$33.18	$53.70
Tractor & Loader	4 Wheel Dr 80 hp	14.95	0.34	20.93	14.03	50.25	10.19	23.31	33.50
Tractor & Loader	4 Wheel Dr 80 hp	14.95	0.27	16.82	11.27	43.31	10.15	18.73	28.88
Swather	16' Self-propelled	0.32	0.15	110.09	20.02	130.58	0.06	16.79	16.85
Baler	1,200 LB Square	NA	0.08	146.09	18.47	164.64	0.01	13.71	13.72
		----------------- Costs per Mile -----------------							
Pickup	1 Ton 4X4	$0.36	$0.21	$0.56	$0.16	$1.28	$28.32	$35.91	$64.23
Pickup	3/4 Ton 4X4	0.36	0.19	0.35	0.16	1.06	27.67	25.28	52.95
ATV	Utility Style	3.59	0.12	0.68	0.70	5.09	24.76	9.18	33.93
Side-by-Side	2-Person	2.16	0.12	0.90	0.56	3.74	15.18	9.76	24.93
Feeder/Mixer Truck		0.86	0.41	5.43	1.00	7.70	8.51	42.84	51.35
		----------------- Costs per Year -----------------							
Tractor Implements		NA	$72.00	$180.00	$90.00	$342.00	$0.24	$0.90	$1.14
Gooseneck Flatbed		NA	260.00	975.00	325.00	1,560.00	0.87	4.33	5.20
Stock Trailer		NA	150.00	562.50	187.50	900.00	0.50	2.50	3.00
Mineral Feeders		NA	6.00	22.50	7.50	36.00	0.02	0.10	0.12
Feed Bunks		NA	660.00	1,237.50	825.00	2,722.50	2.20	6.88	9.08
Corrals, chute, etc		NA	680.00	1,275.00	850.00	2,805.00	2.27	7.08	9.35
Hay Shed		NA	400.00	500.00	500.00	1,400.00	1.33	3.33	4.67
Shop/Shed		NA	300.00	375.00	375.00	1,050.00	1.00	2.50	3.50

Table 5b. 300-Head Operation, Estimated Per Acre Cost of Haying Operations with Power-Unit.

Operation	Power Unit	Acres per hour	Labor cost	Fuel & Lube	Repairs & Maint.	Deprec-iation	Interest	Total cost per acre
				----------------- **Machine Costs** -----------------				
				--- **Variable Costs** ---		----- **Fixed Costs** -----		
Swather	Self-propelled	7.27	$4.13	$2.06	$0.03	$11.64	$2.75	$20.60
Baler	4 Wheel Dr 160 hp	7.27	4.13	4.11	0.14	19.08	4.47	31.92

APPENDIX C
400-Head Cow Calf Operation

Figure 1c. 400-Head Operation, Production Flowchart.

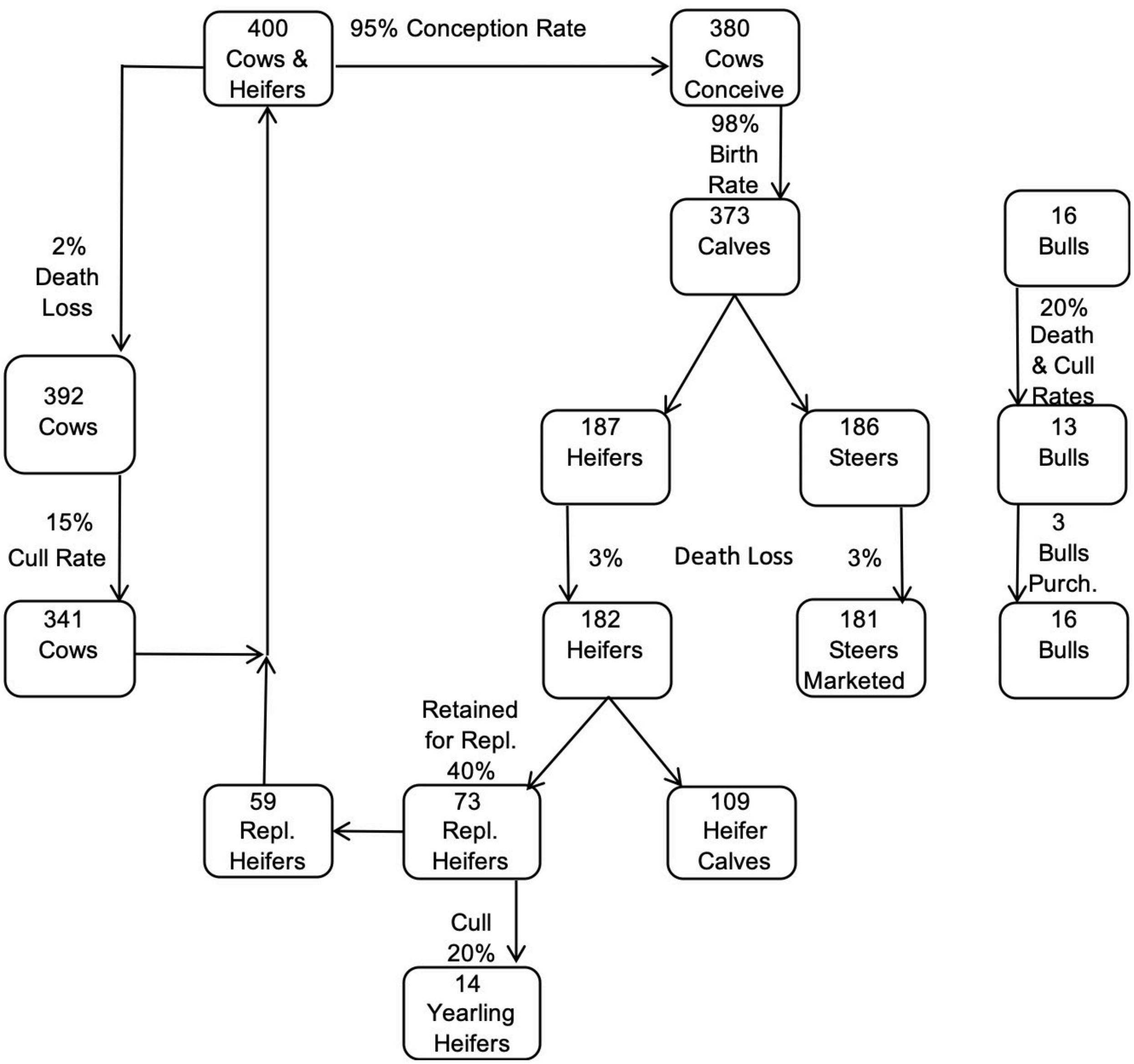


Table 1c. 400-Head Operation, Economic Costs and Returns.

GROSS INCOME	Quantity			Unit	$/Unit	Total	Per Cow
Steer Calves	179	hd	5.50	cwt	$165.00	$162,443	$406.11
Heifer Calves	99	hd	5.25	cwt	160.00	83,160	207.90
Yearling Heifers	15	hd	8.50	cwt	110.00	14,025	35.06
Cull Cows	60	hd	12.50	cwt	65.00	48,750	121.88
Cull Bulls	3	hd	18.00	cwt	85.00	4,590	11.48
Total GROSS Income						$312,968	$782.42
VARIABLE CASH COSTS Description	Quantity			Unit	$/Unit	Total	Per Cow
Private Land - Pasture	2.00			month	$25.00	$23,555	$58.89
Federal Range	5.00			month	1.35	3,180	7.95
Precondition Calves	278.00			head	6.00	1,668	4.17
Block Salt	5.50			ton	200.00	1,100	2.75
Minerals, calves	3.00			ton	1,000.00	3,000	7.50
General Labor	1.00			month	6,000.00	6,000	15.00
Machinery & Equipment: fuel, lube & repairs				annual		55,209	138.02
Fence Repair Material				annual		1,000	2.50
Supplies				annual		12,000	30.00
Utilities				annual		12,000	30.00
Water Assessment				annual		15,000	37.50
Irrigation - Electricity				annual		15,000	37.50
Vet & Medicine	406.00			head	18.00	7,308	18.27
Brand Inspection	1,023.00			head	1.00	1,023	2.56
Check Off	356.00			head	1.50	534	1.34
Bull Purchase	3.00			head	4,000.00	12,000	30.00
Horse Purchase	0.40			head	2,000.00	800	2.00
Marketing Fees	4.00			percent	312,967.50	12,519	31.30
Accounting & Legal				annual		4,000	10.00
Miscellaneous				annual		12,000	30.00
Interest: Operating Capital	6.00			month	198,895.43	5,967	14.92
Total VARIABLE COSTS						$204,862	$512.16
FIXED CASH COSTS						Total	Per Cow
Property Taxes				annual		$4,500	$11.25
Property Insurance				annual		14,000	35.00
Total CASH Costs						$18,500	$46.25
GROSS INCOME minus VARIABLE AND FIXED CASH COSTS						$89,605	$224.01
NON-CASH Costs							
Machinery and Equipment - Depreciation & Interest						$43,252	$108.13
Pickup & ATV - Depreciation & Interest						36,440	91.10
Interest - (Hay Opportunity Cost)						441	1.10
Interest (Livestock Opportunity Costs)						15,520	38.80
Land Interest Charge						78,750	196.88
Total NON-CASH Costs						$174,404	$436.01
Total FIXED COSTS						$192,904	$482.26
Total of All Costs						$397,766	$994.42
Net Projected Returns						($84,799)	($212.00)

Table 2c. 400-Head Operation, Livestock Opportunity Costs.				
Livestock	Opportunity Cost per Head	# Head	Opportunity Cost by Class of Livestock	Opportunity Cost per Cow
Bulls	$100.00	16	$1,600.00	$4.00
Cows	33.75	340	11,475.00	28.69
Horses	50.00	6	300.00	0.75
Replacement Heifers	32.50	66	2,145.00	5.36
Total			$15,520.00	$38.80

Table 3c. 400-Head Operation, Machinery & Livestock Cost Assumptions.						
Machinery & Livestock	Size & Number	Condition	Market Value	Annual Use for Farm		Expected Life (yrs)
Tractor	4 Wheel Dr 160 hp	Newer	$98,000	200	hours	15
Tractor & Loader	4 Wheel Dr 80 hp	Used	56,000	200	hours	10
Tractor & Loader	4 Wheel Dr 80 hp	Used	45,000	200	hours	10
Swather	16' Self-propelled	Newer	84,000	52	hours	15
Baler	1,200 LB Square	Newer	72,000	33	hours	15
Pickup	1 Ton 4X4	Newer	75,000	15,000	miles	8
Pickup	3/4 Ton 4X4	Used	35,000	15,000	miles	6
ATV (2)	Utility Style	Newer	12,000	4,000	miles	4
Side-by-Side	2-Person	Newer	8,000	2,000	miles	4
Feeder/Mixer Truck		Newer	155,000	2,000	miles	10
Tractor Implements	Rake, disc, etc.	Used	3,600	1	year	15
Gooseneck Flatbed	25'	Newer	13,000	1	year	10
Stock Trailer	20'	Newer	12,500	1	year	10
Stock Trailer	16'	Used	7,500	1	year	10
Mineral Feeders			300	NA		10
Feed Bunks			44,000	NA		20
Corrals, chute, etc			34,000	NA		20
Hay Shed	915 Ton		26,500	NA		30
Shop/Shed	40' x 20'		15,000	NA		30
Bulls	16		4,000	NA		4
Cows	334		1,350	NA		9
Replacement Heifers	66		1,300	NA		11
Horses	6		2,000	NA		15

Table 4c. 400-Head Operation, Machinery & Livestock Cost Calculations.										
		-------- Costs per Hour, Mile or Year --------								
		-- Variable Costs --		-- Fixed Costs --			------ Cost per Cow ------			
Machine	Size	Fuel & Lube	Repairs & Maint.	Deprec-iation	Interest	Total Cost	Variable	Fixed	Total	
		----------------- Costs per Hour -----------------								
Tractor	4 Wheel Dr 160 hp	$29.90	$0.88	$26.41	$23.35	$80.55	$15.39	$24.88	$40.27	
Tractor & Loader	4 Wheel Dr 80 hp	14.95	0.34	20.93	14.03	50.25	7.64	17.48	25.12	
Tractor & Loader	4 Wheel Dr 80 hp	14.95	0.27	16.82	11.27	43.31	7.61	14.05	21.66	
Swather	16' Self-propelled	0.32	0.20	82.57	20.02	103.10	0.07	13.23	13.30	
Baler	1,200 LB Square	NA	0.11	109.57	18.47	128.14	0.01	10.67	10.68	
		----------------- Costs per Mile -----------------								
Pickup	1 Ton 4X4	$0.36	$0.21	$0.56	$0.16	$1.28	$21.24	$26.93	$48.17	
Pickup	3/4 Ton 4X4	0.36	0.19	0.35	0.16	1.06	20.75	18.96	39.71	
ATV (2)	Utility Style	3.59	0.12	0.68	0.35	4.74	37.14	10.26	47.39	
Side-by-Side	2-Person	2.16	0.12	0.90	0.56	3.74	11.38	7.32	18.70	
Feeder/Mixer Truck		0.86	0.41	5.43	1.00	7.70	6.38	32.13	38.51	
		----------------- Costs per Year -----------------								
Tractor Implements		NA	$72.00	$180.00	$90.00	$342.00	$0.18	$0.68	$0.86	
Gooseneck Flatbed		NA	260.00	975.00	325.00	1,560.00	0.65	3.25	3.90	
Stock Trailer		NA	250.00	937.50	312.50	1,500.00	0.63	3.13	3.75	
Stock Trailer		NA	150.00	562.50	187.50	900.00	0.38	1.88	2.25	
Mineral Feeders		NA	6.00	22.50	7.50	36.00	0.02	0.08	0.09	
Feed Bunks		NA	880.00	1,650.00	1,100.00	3,630.00	2.20	6.88	9.08	
Corrals, chute, etc		NA	680.00	1,275.00	850.00	2,805.00	1.70	5.31	7.01	
Hay Shed		NA	530.00	662.50	662.50	1,855.00	1.33	3.31	4.64	
Shop/Shed		NA	300.00	375.00	375.00	1,050.00	0.75	1.88	2.63	

Table 5c. 400-Head Operation, Estimated Per Acre Cost of Haying Operations with Power-Unit.								
				---------------- Machine Costs ----------------				
				--- Variable Costs ---		**----- Fixed Costs -----**		
Operation	**Power Unit**	**Acres per hour**	**Labor cost**	**Fuel & Lube**	**Repairs & Maint.**	**Deprec-iation**	**Interest**	**Total cost per acre**
Swather	Self-propelled	7.27	$4.13	$2.06	$0.04	$8.41	$2.75	$17.38
Baler	4 Wheel Dr 160 hp	7.27	4.13	4.11	0.14	14.79	4.47	27.64