

Key Performance Indicator Targets for Ranch Operations

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Key Performance Indicators (KPI)

- Performance Measures of Key Activities happening as a result of your management.
- Is management fulfilling the goals of the ownership.
- Tracked over time.



Key Performance Indicators

- Production KPI follows Beef Cow-calf SPA
- Financial KPI's follow Farm Financial Standards Council approach for accrual financial statements.
- It is important to calculate them correctly.



Key Performance Indicators

- Need to balance the use of KPIs.
- To focus on one, at the expense of another, will not improve the overall performance of the ranch.



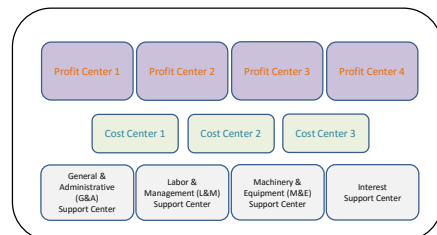
KPI Targets

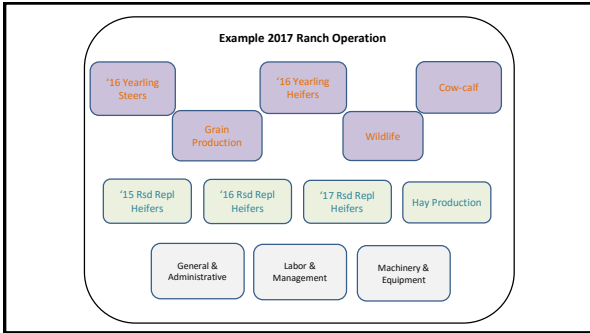


- Start at the ranch level, and move specifically to each activity such as cow-calf, yearlings, farming, wildlife, fixed costs, etc. Evaluate the overall as well as the pieces. Targets have been identified through analysis of individual ranches (Cow-calf SPA, Managerial Ranch Accounting, etc.), experience, and research.



My Ranch Operation






KPI Targets




- Production KPIs
- Financial KPIs
- Integrated KPIs
- There are an unlimited number of “other” KPIs. Each ranch should determine those activities that are critical to your ranch's success and determine the best method to calculate a performance.
- Others are not any less important



Start at the Overall View




- **Caution: The dark side of “Benchmarking”**
Now, Refer to Handout Material
- #1: Stocking rate compared to carrying capacity (Number of Breeding Females)
- #2: Liquidity – usually not a problem, but does point out the lack of paycheck frequency. Current Ratio: Target greater than 2.0.

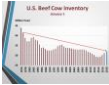

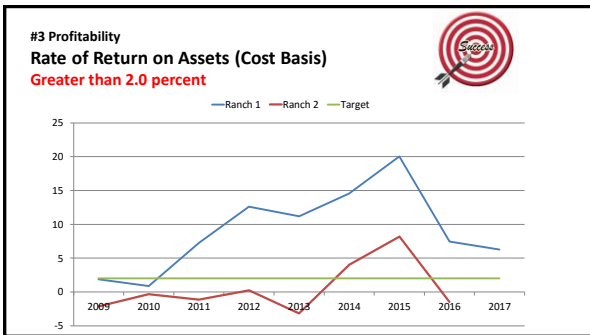


#3 Profitability

Rate of Return on Assets (Cost Basis)

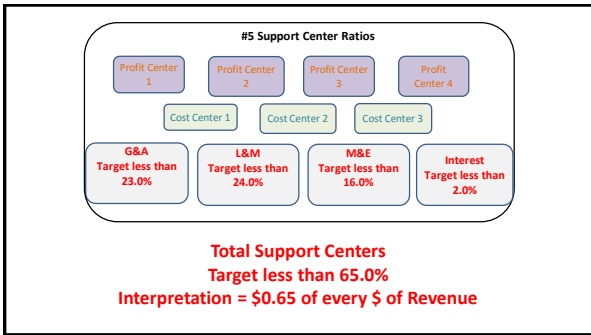


- **Greater than 2.0 percent**
 - This should be the bottom line for ranch owners
 - This KPI should be measured over time.
 - Net ranch income (plus interest paid) divided by total assets
 - This is the driving force behind the long-term decline in breeding cow numbers.

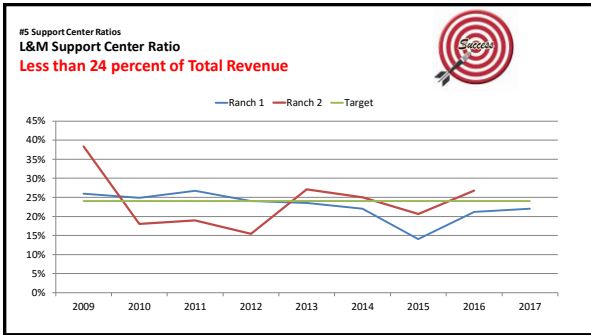
#5 Support Center Ratios

- Ranching is an asset-intensive business where “Fixed Costs” must be minimized.
- Text book definition of DIRT1 5 (Fixed Costs).
 - I have added 1 more.
- These four support centers isolate these fixed costs.



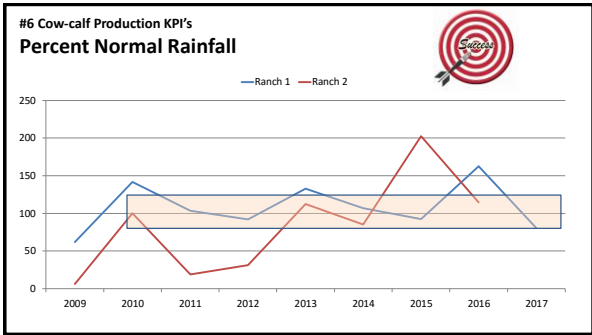
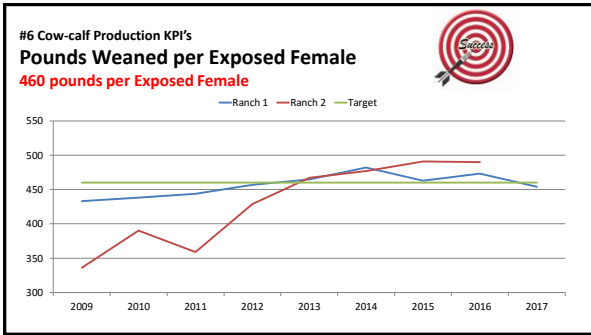
#5 Support Center Ratios L&M Support Center Ratio

- **Less than 24 percent of Total Revenue**
 - One of the most variable expenses
 - Hired Management versus Owned Labor
 - Include salaries, wages, taxes, benefits, chuck, and BOD.
 - For every dollar of ranch revenue, the ranch is spending \$0.24 of that dollar to pay L&M.
 - Total L&M divided by Total Revenue generated on the ranch

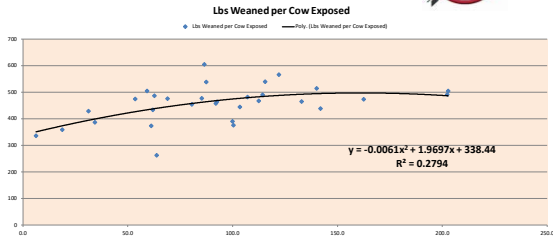


#6 Cow-calf Production KPI's Pounds Weaned per Exposed Female

- **460 pounds per Exposed Female**
 - Should be a KPI for any ranch that owns breeding cows with the intent of weaning calves.
 - Product of weaning percentage and weaning weights
 - Total pounds weaned divided by all females that were exposed and intended to be bred.



Percent Normal Rainfall Effect on Pounds Weaned per Cow Exposed



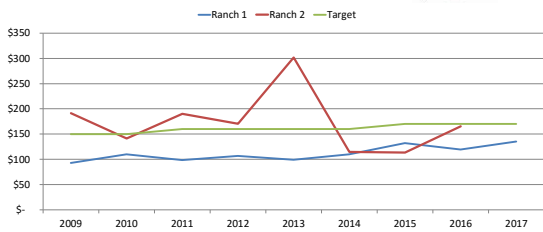
#7 Cow-calf Financial KPI's Cost per Cwt. of Weaned Calf



- **Less than \$170 per Cwt.**
 - IMO: The most important number for ranch management
 - Incorporates:
 - Productivity
 - Total expenses it took to get that production
 - Every ranch has different resources; this KPI shows how efficiently those resources are being used to create productivity.
 - Total expenses (less "other revenue") divided by total pounds weaned.

#7 Cow-calf Financial KPI's Cost per Cwt. of Weaned Calf

Less than \$170 per Cwt.



#7 Cow-calf Financial KPI's Revenue per Breeding Female

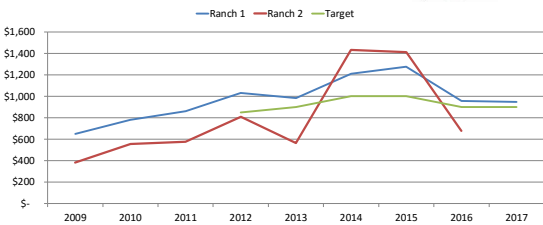


- **Greater than \$900 per Breeding Female**
 - Not just the value of sold weaned calves
 - Total revenue from weaned calf sales, retained calf values, gains/losses on the sales of breeding stock, and the accrual adjustments on inventories.
 - To compare, it should not include sales from other ranch enterprises
 - Hay sales
 - This target can and will move.



#7 Cow-calf Financial KPI's Revenue per Breeding Female

Greater than \$900 per Breeding Female

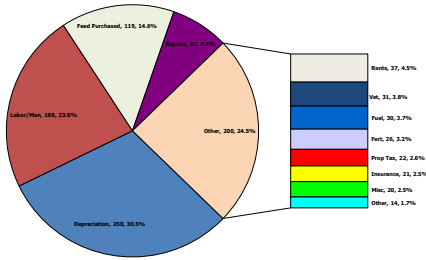


#8 Cow-calf Expenses KPI Total Cost per Female

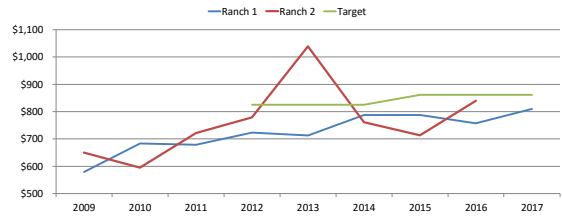


- **Less than \$861 per Female**
 - Top three (usually) account for 50%
 - Depreciation
 - Labor & Management
 - Feed Costs
 - Variable expenses
 - Repairs & Maintenance
 - Interest
 - Fertilizer

Long Term Average Expense Breakdown per Female (\$906)



#8 Cow-calf Expenses KPI Total Expenses per Female Less than \$861 per Female



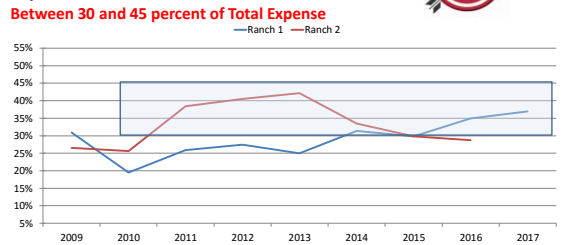
#10 Cow-calf Nutritional Expense Nutrition Base Expense as a Percent of Total Expenses

- Between 30 and 45 percent of Total Expense

- Reproduction is the most important factor in ranch productivity, thus, herd nutrition is imperative.
- No two ranches have the same resources.
- Identify three types
 - Expenditures for purchased nutrition
 - Expenses associated with raising nutrition
 - Costs associated with grazing
- These three divided by Total Expense



Financial KPI Nutrition Base Expense as a Percent of Total Expense Between 30 and 45 percent of Total Expense



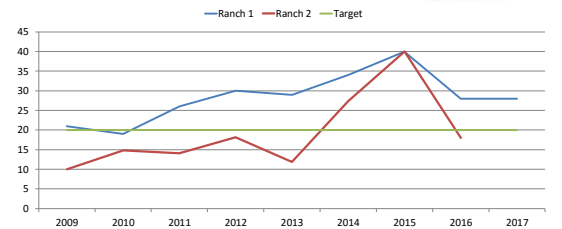
#3 Profitability Asset Turnover Ratio (Cost Basis)

- Greater than 20 percent

- Given the highly capitalized nature of ranching, it is vital for the manager to generate the greatest possible net income from the ranch assets.
- This KPI details how many revenue dollars each dollar of asset is creating.
- Target: Every dollar of asset is generating \$0.20 of revenue (or, for every \$1 Million; then \$200K).
- Seems low, but that demonstrates the nature of ranching



#3 Profitability Asset Turnover Ratio (Cost Basis) Greater than 20 percent



KPI targets Not Common to All Ranches

- Hay Production Cost per Ton
 - Less Than \$150/ton
- Cost of Gain on Small Annual Pasture
- Bred Heifer Enterprise
- Others?



Key Performance Indicator Targets for Ranch Operations

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RANCH KPI - KEY PERFORMANCE INDICATORS

Key Performance Indicator	2018 Target	Long-Term Average	Your Name
1) Breeding Females	43	1,565	
	Herds	Inventory	
2) Liquidity			
Ending Current Ratio at Cost Value	Greater Than 2.0	367.1	
3) Profitability			
ROA at Cost Value	2.00%	1.94%	
Total Investment/Female at Market	\$5,000 to \$15,000	\$ 12,004	
Equity to Asset at Cost Value	Greater Than 50%	94.9%	
Asset Turnover Ratio at Cost (x:1)	Greater Than 0.20	0.21	
4) Operation Ratios			
Operating	Less Than 70.0%	73.2%	
Depreciation	Less Than 25.0%	27.8%	
Interest	Less Than 5.0%	0.5%	
Net Income from Operations	Greater Than 5.0%	-1.5%	
5) Support Center Ratios			
G&A	Less Than 23.0%	23.1%	
L&M	Less Than 24.0%	23.7%	
M&E	Less Than 16.0%	17.3%	
Interest	Less Than 2.0%	0.5%	
Total	Less Than 65.0%	64.5%	
6) Cow-calf Production KPI's			
Pregnancy	91.0%	88.2%	
Calving	86.0%	83.6%	
Weaning Percentage	83.0%	82.1%	
Weaning Weight	550	563	
Lbs Weaned per Cow Exposed	460	460	
Lbs Weaned per Acre Utilized		30.5	
Acres per Exposed Female		28.9	
Percent Normal Rainfall		98.1	
7) Cow-calf Financial KPI's			
Gross Revenue per Female	Greater Than \$900	\$944	
Unit Cost/Breakeven	Less Than \$170.00	\$171.95	
Average Price for Weaned Calves	\$185.00	\$169.52	
Cow-calf Labor & Management Ratio	Less Than 20.0%	20.9%	

RANCH KPI - KEY PERFORMANCE INDICATORS

Key Performance Indicator	2018 Target	Long-Term Average	Your Name 0
8) Cow-calf Expenses (per Female)			
Chemicals	\$8.00	\$13.80	
Custom Hire (Machine Work)	\$20.00	\$17.31	
Dep - Livestock	\$125.00	\$123.93	
Dep - M&E	\$60.00	\$60.37	
Dep - B&E	\$60.00	\$65.54	
Dep - Unallocated	\$0.00	\$0.00	
Feed Purchase	\$105.00	\$119.07	
Fertilizer & Line	\$30.00	\$26.11	
Freight & Trucking	\$4.00	\$5.06	
Gasoline, Fuel, & Oil	\$30.00	\$29.98	
Insurance	\$20.00	\$20.55	
Hired Labor & Management	\$185.00	\$188.07	
Rents or Leases	\$30.00	\$36.80	
Repairs & Maintenance	\$60.00	\$60.74	
Seed & Plants	\$3.00	\$2.89	
Supplies	\$13.00	\$17.47	
Property Taxes	\$20.00	\$21.64	
Utilities	\$18.00	\$17.63	
Veterinary & Breeding	\$30.00	\$31.23	
Professional Fees	\$17.00	\$15.52	
Miscellaneous	\$18.00	\$20.26	
Net Accrual Expense Adjustments	\$0.00	\$5.88	
Interest Expense	\$5.00	\$6.41	
Family Living Withdrawals	\$0.00	\$0.00	
9) Total Costs (per Female)	\$861.00	\$906.18	
10) Cow-calf Nutritional Expense as a % of Total Expense			
	Between 30% & 45%	37.1%	
11) Total Costs per Calf Weaned			
	Below \$1,000.00	\$1,051.52	
12) Hay Production Cost/Ton			
	Less Than \$75.00	\$145.31	
13) Yearling Enterprise Cost of Gain			
		\$1.0465	

RANCH KPI - KEY PERFORMANCE INDICATORS

Explanations

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1) Breeding Females

While the number of females is largely determined by the manager, the land resources, weather, and the environment determine the underlying support for the inventory. The total inventory changes throughout the year and while each inventory at particular points in the year are important, for most KPI calculation, the January 1 inventory is the most important. Ranching is a capital-intensive business with high fixed costs. It is important to maintain as high an inventory to pay these fixed costs.

2) Liquidity

A. Ending Current Ratio at Cost Value

Calculation: *Current Assets divided by current liabilities*

Goal: Greater than 2.0

Comments: Ranchers have few "paydays", thus it is imperative that they have enough liquid assets to combat unforeseen events such as prolonged dry periods. A KPI greater than 2 suggest that a ranch has enough liquid assets to pay current obligations plus some unforeseen financial needs.

3) Profitability

A. Rate of Return on Assets (Cost Basis)

Calculation: *Net Ranch Income (plus interest expense for the year) divided by total average assets.*

Goal: Greater than 1.5%

Comments: Can use either the cost basis or the market basis of assets. When calculated correctly, this KPI can be compared to other industries or businesses. This KPI is most applicable to the owner of the ranch assets.

B. Total Investment per Breeding Female (Market Value)

Calculation: Total assets from a market-based balance sheet divided by the January 1 inventory of breeding females.

Goal: Between \$7,500 and \$12,500 per breeding female

Comments: Owned land is the major asset on most balance sheets. Due to market prices, it is almost impossible for breeding cows to pay for a ranch. This points to the

difficulty in new ranchers becoming involved in ranching and the desire of ranch heirs desiring to sell a family ranch.

C. Equity to Asset Ratio (Cost Basis)

Calculation: *Total owner equity (net worth) divided by total assets.*

Goal: Greater than 50%

Comments: This KPI illustrates the percent of the assets that are owned by ranch owners. Most lenders will not want finance an operation where they own more than the owners. It can be argued that this KPI should be calculated based upon market value of assets. Both values are important, but for different situations.

D. Asset Turnover Ratio (Cost Basis)

Calculation: *Total ranch revenue divided by total average assets.*

Goal: Greater than 0.20.

Comments: The asset turnover ratio illustrates how much revenue that each dollar of ranch asset is generating. With the goal of 0.20, every dollar of ranch asset would be generating \$0.20 of revenue.

4. Operation Ratios

Controlling expenses can be one of the most important exercises for ranch owners and managers, yet generating revenue allows for net income. Managers should target operating expenses at less than 75 percent of total revenue. Operating expenses include all expenses except interest and depreciation. If operating expenses are less than 75 percent the ranch's total revenue, the ranch can use the remaining 25 percent to 1) pay interest, 2) hold in escrow to cover depreciation expense, or 3) retain as net income. Clearly, a ranch will suffer a net loss if operating expenses plus interest expense and depreciation is greater than total revenue.

A. Operating Ratio

Calculation: *Total Expenses minus depreciation and minus interest paid divided by total revenue.*

Goal: Less than 70 percent.

B. Depreciation Ratio

Calculation: *Depreciation divided by total revenue.*

Goal: Less than 25 percent.

C. Interest Ratio

Calculation: *Interest divided by total revenue.*

Goal: Less than 5 percent.

D. Net Income from Operations Ratio

Calculation: *Net income from operations divided by total revenue.*

Goal: Greater than 5 percent.

5) Support Center Ratios

The support centers can be thought of as the “fixed costs” of an operation, and, as with any fixed costs, they must be absorbed into those activities that sell ranch products. They cannot be directly charged and they “support” the business. There are four Support Centers and they are always the same: *General and Administrative (G&A), Labor & Management (L&M), Machinery & Equipment (M&E), and Interest.* The total of these four support centers typically require 60 percent of the total revenue to be paid.

A. G&A Ratio

Calculation: *Total general and administrative expenses divided by total revenue.*

Goal: Less than 20 percent of total revenue.

Discussion: It is common to believe that this support center is a miscellaneous support center, but that is not the case. G&A typically amasses the expenses from the overall operation, but is not associated with L&M, M&E or Interest. Typical expenses sent to G&A would include professional fees (such as accounting, legal or consulting), liability insurance, supplies, etc. Furthermore, any expenses that are associated with buildings and improvements would be classified as G&A. These expenses would include fence repair, building repairs, building and improvement depreciation, and property insurance associated with buildings and improvements. Support centers can have some revenue. Insurance proceeds, such as drought insurance would be classified as G&A.

B. L&M Ratio

Calculation: *Total labor and management expenses divided by total revenue.*

Goal: Less than 20 percent of total revenue.

Discussion: Throughout the year, as the ranch pays its employees, the ranch would categorize the check written to salaries, wages, payroll taxes, etc. The point here is to isolate all expenses associated with the labor and management of the ranch. Most of these expenses are obvious, but some are not. A few that are not so obvious would be utilities paid on employees housing, board of directors’ travel costs to attend a board of directors meeting, employee meals, and contract labor. L&M is one of the largest and variable across ranches.

C. M&E Ratio

Calculation: *Total machinery and equipment expenses divided by total revenue.*

Goal: Less than 15 percent of total revenue.

Discussion: All expenses associated with vehicles, machinery and equipment would be isolated to this support center. The majority of the expenses would be fuel and repairs and maintenance, insurance, and supplies associated with VME. Two sets of transactions that are not common throughout the year would be M&E depreciation and the gain or loss associated with the selling of these

assets. This suggests that support centers can have revenue, although it probably would not be a large amount.

D. Interest Ratio

Calculation: Total interest paid divided by total revenue.

Goal: Less than 5 percent of total revenue.

Discussion: This support center aggregates the total interest paid on liabilities of the ranch. This would include interest on operating notes, short-term purchase of assets (such as stocker cattle), or long-term mortgage liabilities. While a little Interest can be a good thing, a large amount of interest can financially bring down any ranch. It is important to determine the total amount of interest paid by the ranch.

6) Cow-calf Production KPI's

A. Pregnancy Percentage

Calculation: *Number of breeding female's pregnancy-tested positive divided by the number of breeding females tested.*

Goal: Greater than 90.0%

Comments: Ranch productivity starts with the ability to get breeding females bred.

B. Calving Percentage

Calculation: *Number of calves born divided by number of breeding females intended to be bred.*

Goal: Greater than 85.0%

Comments: Data from production records and allows for the determination of where productive losses are occurring.

C. Weaning Percentage

Calculation: *Number of calves weaned divided by the number of breeding females intended to be bred.*

Goal: Greater than 83.0%

Comments: Data from production records and allows for the determination of where productive losses are occurring.

D. Weaning Weights

Calculation: Total payweight of *calves weaned divided by the total number of calves weaned.*

Goal: 550 pounds

Comments: While weaning weights are influenced by management (genetics, nutrition, etc.), the greatest influencer of weaning weights is weather. Days of age is the second greatest influencer. It is more important to get a calf of any weight (reproduction) than to worry about the weights of calves that are not born.

E. Pounds Weaned per Exposed Female

Calculation: *Total pounds of weaned calves divided by all females that were exposed and intended to be bred.*

Goal: 460 pounds

Comments: The most important production KPI. Data for this comes from the ranch's production records. It is a combination of weaning percentages and weaning weights.

F. Pounds Weaned per Acre Utilized

Calculation: *Total pounds of weaned calves divided by total number of acres utilized by the cow-calf enterprise.*

Goal: TBD

Comments: As costs continue to rise, it is imperative that a ranch manager weans as many pounds per acre as the land resources and weather allows.

G. Acres per Exposed Female

Calculation: *Total number of acres utilized by the cow-calf enterprise divided by the total number of breeding females.*

Goal: TBD

Comments: One of the most important decisions that a manager will make will be stocking rate.

H. Percent Normal Rainfall

Calculation: *Total fiscal year rainfall divided by average rainfall.*

Goal: TBD

Comments: Rancher do not control the rainfall but does control his actions prior to and in response to the amount of rainfall.

7) Cow-calf Financial KPI's

A. Gross Revenue per Female

Calculation: *Total revenue from weaned calf sales, gains/losses on the sales of breeding stock, and the accrual adjustments (value change) of the weaned calves that are kept in the herd as replacement cattle as of January 1.*

Goal: Varies, but should target greater than \$900 per female

Comments: Revenue is generated from a number of sources including the sale of weaned calves, the sale of culled breeding stock and inventory adjustments. The KPI goal should be greater than the total accumulated expenses per breeding female.

B. Unit Cost per Pound of Weaned Calves/Breakeven Price

Calculation: *Total Expenses (less non-calf revenue) divided by total pounds of weaned calves.*

Goal: Varies depending upon productivity levels and total costs.

Comments: While the ranch's productivity level will remain relatively constant, inflation of expenses will cause this KPI to rise over time. This KPI is where ranches compete against each other. Although every ranch has different resources for productivity, this KPI is comparable across all ranches. It is the culmination of what the ranch management does with its resources to create production.

C. Average Price per Weaned Calves

Calculation: *Total revenue from calf sales divided by pounds weaned of calves. For those calves that are retained into a following enterprise, a market price for like calves should be used.*

Goal: Varies each year; \$175.00 per cwt.

Comments: This is an indication of sales timing, type of calves, weight of calves, etc.

D. Labor and Management Expense as a Percent of Total Revenue

Calculation: *Total labor and management expense associated with the cow-calf enterprise divided by total ranch revenue.*

Goal: Less than 20%

Comments: Cow-calf labor and management expenses are usually a top three expense for any ranch, yet is also one of the most variable across ranches. Total labor and management expense will include salaries, payroll taxes, employee benefits (insurance, housing, etc.), and bonuses. It should also include contract labor such as day labor.

8. Cow-calf Expenses (per Female)

The purpose of these line-item KPI's are to identify which specific expense is out of line. The top four expenses are typically depreciation, Hired Labor & Management, Feed Purchase, and Repairs & Maintenance.

9. Total Costs (per Female)

Calculation: *Total expenses allocated to the cow-calf enterprise divided the total number of breeding females at the beginning of the fiscal year (normally January 1).*

Goal: Less than \$825 per female.

Comments: Total costs to run a breeding female continues to rise. Controlling costs is imperative.

10. Cow-calf Nutritional Expense as a Percent of Total Expense

Calculation: *Expenditures for purchased nutrition (forage, feed, salt, mineral supplement) plus expenses associated with raising nutrition (such as hay production), plus costs associated with grazing (fertilizer, brush/weed control) divided by total ranch expenses.*

Goal: Between 30 and 45 percent

Comments: Reproduction directly affects ranch profitability. Proper herd nutrition directly affects reproduction. Yet, no two ranches have the same natural resources, thus it is difficult to pinpoint an absolute figure for this KPI.

11. Total Costs per Calf Weaned

Calculation: *Total expenses allocated to the cow-calf enterprise divided the total number of calves weaned.*

Goal: Less than \$975 per calf weaned.

Comments: This takes into account both total costs to run a breeding female and the productivity of those females to produce calves.

12. Hay Production Cost per Ton

Calculation: *Total expenses allocated to the hay enterprise divided the total number of tons harvested.*

Goal: Below the lesser of \$150 per ton or the current market value of hay that can be purchased.

Comments: Not all ranches produce hay for the breeding herd. Those that do must know what the cost of production per ton of hay is. Caution must be used to incorporate the beginning and ending values of the hay inventories, sales and amounts fed to livestock.

13. Yearling Enterprise Cost of Gain

Calculation: *Total cost of the yearling enterprise minus the cost of the calves (transfer costs from previous enterprise).*

Goal: It is difficult to establish a goal for the yearling enterprise due to the various resources and locations of the grazing. The current cost of gain in the feedlot can be used as a reference for the goal. Currently, a goal would be less than \$0.75 per pound of gain.

Comments: The purpose of this KPI is to track, seamlessly, the weight gain of calves from weaning on the ranch (their weaning weights), then retained to a yearling enterprise. In most cases, this is a growing enterprise and not a feedlot enterprise where the ranch would sell carcass ready beef.