Putting Profit back in Ranching: Managing Cow Costs

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American GrazingLands Services
May, Idaho

Profit = Income - Costs

- You can increase income by:
  - Increasing units of production
  - Receiving higher price per unit
  - Adding enterprises
- Or by reducing costs
  - Overhead
  - Operating (or variable)

It is critical you know your unit cost of production!

What are overhead costs?
- Costs incurred whether you produce anything or not
  - Land ownership
  - Labor
  - Equipment depreciation
  - Facility depreciation
  - Utilities
  - Insurance
  - Taxes
  - Cow depreciation*

What are variable costs?
- Costs that change as production level changes
  - Livestock purchase
  - Feed
  - Vet
  - Fuel
  - Machine operating, repair, & maintenance
  - Trucking
  - Etc.

Estimated average cow costs - 2007

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Winter feed costs are the largest cost for most cow-calf producers!

Most farmers and ranchers have no idea what it cost to get to this point!

Profit = Income - Costs:
Understanding gross margin

- Gross margin is the difference between sale value and operating cost for each unit of production.
- Our goal should be to increase gross margin of every product we sell to >50%

Gross margin example

- If your variable costs for maintaining a cow are $350 annually and a calf sells for $600, the gross margin is $250
- The gross margin ratio is 42% ($250/$600)
- Profit will be increased more by reducing costs by $100 than increasing income by $100

Profit = Income - Costs:
Understanding overhead ratio

- Calculating overhead ratio
  - If total costs are $580/cow and operating costs are $350 and overheads account for $230 ....
  - Overhead ratio is 40% ($230/$580)....this ranch has a chance of surviving
- What percent of total costs are tied up in overheads?
- For sustainable ranching overhead ratio should be less than 50%
- Target should be about 33%

Profit = Income - Costs:
Understanding overhead ratio

- Until gross margin >50%, focus on cost management … Not increased production
The importance of cost management

Table 1. SPA measurements for Low, Medium and High Profit herds (Dunn, 2000)

<table>
<thead>
<tr>
<th></th>
<th>Low Profit</th>
<th>Medium Profit</th>
<th>High Profit</th>
</tr>
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<tbody>
<tr>
<td>Lbs weaned/cow exposed</td>
<td>413</td>
<td>455</td>
<td>455</td>
</tr>
<tr>
<td>Income/breeding female</td>
<td>$390.75</td>
<td>$423.08</td>
<td>$495.35</td>
</tr>
<tr>
<td>Cost/breeding female</td>
<td>$637.68</td>
<td>$386.87</td>
<td>$270.23</td>
</tr>
<tr>
<td>Net/breeding female</td>
<td>$247.02</td>
<td>$36.29</td>
<td>$225.13</td>
</tr>
<tr>
<td>Total investment/female</td>
<td>$1536</td>
<td>$1308</td>
<td>$1397</td>
</tr>
<tr>
<td>Return on Assets (%)</td>
<td>-15.5%</td>
<td>2.88%</td>
<td>18.16%</td>
</tr>
</tbody>
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What are overhead costs?
- Costs whether you produce anything or not
- Land ownership
- Labor
- Equipment depreciation
- Facility depreciation
- Utilities
- Insurance
- Taxes
- Cow depreciation

B & H Ranch example:
- Overheads
  - Labor $30,000
  - Equipment depreciation $20,000
  - Land charge $10,000
  - Facility depreciation $10,000
  - Utilities, taxes, insurance $10,000
  - Total overheads $80,000

What is the expected labor requirement for a cow herd?
- Extension service says 300-400 cows / FTE
- Highly successful ranches in US 700 cows
- Australian national standard 1500 cows
- Highly successful Australian stations 3000

What do you do?

These 3600 healthy, happy cows have received 90 days of hay in the last 37 years.

...Two men take care of this herd most of the year.
What equipment do you really need to own?

Overcapitalization in equipment & facilities breaks many ranches

Equipment depreciation is a real cost

... and must be accounted for in the budget

Facility depreciation is a real cost

... and it must be accounted for in the budget

What about cow depreciation?

It is a real cost....

... and it must be accounted for in the budget

Understanding cow depreciation

- The difference between purchase price and salvage value
- Spread over the calves a cow produces in her lifetime
- With interest charged
Cow depreciation: Overhead or operating cost?

- If you own a cow herd you incur depreciation, therefore it is an overhead.
- But it is incurred every year and must be paid for by the current calf crop, therefore it is an operating cost.
- However you classify cow depreciation, it is a real cost.

Cow depreciation example:

- Purchase cow for $1000
- Salvage value $500
- Difference $500
- Cow has 5 calves, so the charge is $100 per calf plus interest charge for the five years she tied up your money
- @ 8% interest annual charge is $125.23

What affects cow depreciation?

- Spread between replacement or purchase cost and salvage value
  - The greater the spread, the higher the annual depreciation charge
- Cow longevity
  - The more calves a cow produces in her lifetime, the more units over which to spread depreciation cost

What affects cow depreciation?

- Spread between replacement or purchase cost and salvage value
- Cow longevity
  - The more calves a cow produces in her lifetime, the more units over which to spread depreciation cost

How many calves does the average beef cow produce in her lifetime?

<table>
<thead>
<tr>
<th>% retained in herd</th>
<th>Number of calves in lifetime</th>
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<tbody>
<tr>
<td>95%</td>
<td>13.3</td>
</tr>
<tr>
<td>90%</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>85%</strong></td>
<td><strong>4.2</strong></td>
</tr>
<tr>
<td>80%</td>
<td>3.1</td>
</tr>
<tr>
<td>75%</td>
<td>2.4</td>
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Not as many as you think!
Effect of cow longevity on annual ownership cost

<table>
<thead>
<tr>
<th>% retained in herd</th>
<th>Number of calves in lifetime</th>
<th>Annual cow-cost with interest</th>
<th>Annual interest cost</th>
<th>Total interest</th>
<th>Lifetime income</th>
<th>Lifetime margin over cow cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>95%</td>
<td>13.3</td>
<td>$62.43</td>
<td>$24.84</td>
<td>$330.35</td>
<td>$6,650</td>
<td>$5,820</td>
</tr>
<tr>
<td>90%</td>
<td>6.5</td>
<td>$101.62</td>
<td>$24.70</td>
<td>$160.54</td>
<td>$3,250</td>
<td>$2,589</td>
</tr>
<tr>
<td>85%</td>
<td>4.2</td>
<td>$144.82</td>
<td>$25.78</td>
<td>$108.26</td>
<td>$2,100</td>
<td>$1,492</td>
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<tr>
<td>80%</td>
<td>3.1</td>
<td>$188.45</td>
<td>$27.16</td>
<td>$84.21</td>
<td>$1,550</td>
<td>$966</td>
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<td>75%</td>
<td>2.4</td>
<td>$237.18</td>
<td>$28.84</td>
<td>$69.22</td>
<td>$1,200</td>
<td>$631</td>
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How do you increase cow longevity?
- Select for functional type of cattle
- Reproductive efficiency in #1 genetic trait
- Selection for high milk EPD or high REA is selection against fertility

Cow nutritional requirements are seasonal: January calving
- Energy demand is highest at peak lactation
- 30 to 90 days post-calving

Lactation and energy demand: Winter calving
- Hard to maintain weight or gain weight during lactation without high quality feed
Lactation and energy demand:
Winter calving
- Extra energy required for lactation and gain typically comes from harvested forage with winter calving

Lactation response of winter calving cows
- Peak lactation May 13
- Calving date March 1

Day of the Year
- 0 2 4 6 8 10 12 14 16 18
- Daily Milk Yield (lb/head/day)
- Pasture Daily Growth Rate

How do you increase cow longevity?
- Select for functional type of cattle
- Appropriate nutrition for stage of production
- Minimize stress
  - Low stress handling techniques
  - Basic health program

What are variable costs?
- Costs that change as production level changes
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There is an economy of scale
- For this example variable costs are:
  - 50 cows $400
  - 100 " $390
  - 200 " $380
  - 300 " $370
  - 400 " $360
  - 500 " $350
B & H Ranch example: Overhead plus variable costs

What if overheads were reduced by 25%?

Alternatives to owning equipment

How can we reduce overheads?

Calf revenue figured at $500/cow annually

B&H Ranch example: Total costs and revenues

How can we reduce overheads?

Management-intensive Grazing is really about managing space and time.
Water development and subdivision fencing

This is a 2500 acre range unit split into 160 acre pastures for winter grazing
800 cows on each paddock for 5 to 7 days

2500 acre range unit

- 2004-5 with single water source and no subdivision fence: 450 cows for 40 days
- 2005-6 with stock water development but no subdivision: 800 cows for 45 days
- 2006-7 with subdivision 900 cows 80 days

Water development and subdivision fencing

- Center pivot for flexible paddocks

How can we reduce overheads?

- Get out of farming
- Increase land use efficiency
- Increase labor efficiency
What if variable costs were reduced by $100/cow?

Half the cow herd is now working towards making a profit!

How might variable costs be reduced by $100/cow?

- Let the cows harvest more of their own feed

Swath grazing

- Alberta research show $30-$40 savings per ton fed
- Our experience has been $45-50 savings/ton fed

Winter annual pastures planted in mid-summer can supply 200+ cow-days/acre.

- That can be carried forward into winter

...Sept thru Dec 2004, this field produced 292 cow-days/acre @ 39¢ per day
The same ranch had a hay feeding cost on other cows of $1.33 per day.

In winter of 2007-8, our hay feeding cost was $2.35 /cow/day.

What about labor for grazing?
- Use 2-3 day strip grazing for stockpiled pasture or swaths.

Labor requirements for conventional hay feeding:
- Feeding hay to 300 cows requires ten 1000-lb bales daily.
- Requires 40 to 120 minutes daily.
- As herd size increases, time requirement increases.
- Requires daily equipment operation.

Strip grazing increases utilization efficiency:
- 3-day strip graze provided 40% more grazing days per acre than 14-day strip graze.

Management needed to achieve target utilization rate:

<table>
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<th>Stockpiled pasture</th>
<th>Winter annual</th>
<th>Hay feeding</th>
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<tr>
<td>80 %</td>
<td>1-day strip graze</td>
<td>Ring feed 2-day</td>
<td></td>
</tr>
<tr>
<td>70 %</td>
<td>3-day strip graze</td>
<td>Ring feed 3-day Unroll daily</td>
<td></td>
</tr>
<tr>
<td>60 %</td>
<td>7-day strip graze</td>
<td>Ring feed 5-day</td>
<td></td>
</tr>
<tr>
<td>50 %</td>
<td>14-day strip graze</td>
<td>Unroll 2-day</td>
<td></td>
</tr>
<tr>
<td>40 %</td>
<td>Set stock</td>
<td>Cows are in the hay yard!</td>
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Effect of utilization rate on daily forage cost for stockpiled pasture, winter annual forage, and hay feeding:

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<td>$0.85</td>
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<td>70 %</td>
<td>$0.19</td>
<td>$0.61</td>
<td>$0.97</td>
</tr>
<tr>
<td>60 %</td>
<td>$0.23</td>
<td>$0.71</td>
<td>$1.13</td>
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<tr>
<td>50 %</td>
<td>$0.27</td>
<td>$0.85</td>
<td>$1.36</td>
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<tr>
<td>40 %</td>
<td>$0.34</td>
<td>$1.06</td>
<td>$1.69</td>
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**Strip grazing enhances rumen function in winter grazing**

- Cattle with free access will selectively graze best forage and leave you with lots of low digestibility residual.
- Strip grazing forces cattle to consume the good, the bad, and the ugly all together.

**What about labor for grazing?**

- Use 2-3 day strip grazing for stockpiled pasture or swaths.
- Use the right tools to minimize time requirement.

**One way of moving fence**

- 45 to 60 minutes to take down and put up ½ mile of polywire with step-in posts.
- An experienced hand can move 1000 ft of fence in 20 minutes!
435 ft up and down in 7 minutes!

A good geared reel

Step-in posts that go in hard ground

Long stretches may require other tools!

½ mile

Making allocation easy

435 ft

Making allocation easy

Use 50 ft post spacing...
then every post equals 1/2 acre
What about labor for grazing?

- Use 2-3 day strip grazing for stockpiled pasture or swaths
- Use the right tools to minimize time requirement
- 50 cows or 500 cows takes about the same amount of labor

What about labor?

- The livestock are ranch employees
- Make them work harder

Do you work for the cows, or do the cows work for you?

- Rustle her own grub
- Find the best bite of feed she can
- Deliver a live calf every 12 months
- Wean a healthy calf every year
- Stay healthy without a lot of fuss
- Stay in your herd at least 10 years
- Enjoy the weather where she lives

What is a cow’s job description?

- Provide livestock the opportunity to do their job
- Keep livestock where they are supposed to be
- Effectively market ranch products
- Provide standing pasture as many days of the year as possible

What is a rancher’s job description?

- Provide livestock the opportunity to do their job
- Keep livestock where they are supposed to be
- Effectively market ranch products
- Provide standing pasture as many days of the year as possible
What were the high labor demands?
- Making hay
- Feeding hay
- Nursemaiding cows
- Fence building and maintenance
- Irrigating

What is the expected labor requirement for a cow herd?
- Extension service says 300-400 cows / FTE
- Highly successful ranches in US 700 cows
- Australian national standard 1500 cows
- Highly successful Australian stations 3000

What do you do?

Managing cow cost summary:
- You can't manage costs until you know what they are.
  - A good record system is critical
  - Overheads
  - Operating

Managing cow cost summary:
- You can't manage costs until you know what they are.
- Attack the big dollar items
  - Winter feed
  - Cow depreciation
  - Land
  - Labor

Managing cow cost summary:
- You can't manage costs until you know what they are.
- Attack the big dollar items
- Only own what you absolutely need
  - You can hire most equipment jobs for less cost than you can do it yourself
  - Find more ways for the livestock to do more of the work

Managing cow cost summary:
- You can't manage costs until you know what they are.
- Attack the big dollar items
- Only own what you absolutely need
- Every day spent grazing is money saved
  - Cost advantage of grazing over hay feeding is frequently $1 / day
Management-intensive Grazing: The Grassroots of Grass Farming

- Check - $31
- Cash - $30

Contact information

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