Quick Notes...

To minimize financial hardship under drought conditions, partial budgeting is a tool that can be used to compare different management strategies.

It is important to develop your own numbers for the drought strategies you are considering. Everyone's situation is unique and should be evaluated individually.

As drought conditions continue, increasing numbers of livestock producers will be faced with some critical decisions relating to their breeding herds. Poor forage conditions and shortened grazing seasons will force producers to analyze different alternatives to cope with drought impacts.

Partial Budgeting
A partial budget is a valuable management tool used to analyze an incremental change in a given enterprise. By employing budget principles, a manager can compare the economic impact (costs and returns) of alternative drought plans.

Partial budgeting is based on the principle that changes made in the farm or ranch business due to drought conditions will have one or more of the following effects:

1) eliminate or reduce some costs;
2) eliminate or reduce some returns;
3) increase some costs;
4) increase some returns.

The net effect will be the sum of positive economic effects minus the sum of negative economic effects.

Drought Example Analysis
This article is designed to help livestock producers analyze or compare different drought management strategies. To demonstrate the process, four possible strategies are compared. These represent only four of many possible drought management strategies to consider.

1. Transport livestock (cow pairs) to another source of forage.
2. Drylot livestock (both cows and calves).
3. Liquidate livestock and buy back at a later date.
4. Wean early, drylot calves, sell cows, and buy back cow/calf pairs at a later date.

Worksheet 1 shows the basic format of a typical partial budget. The positive impacts (reduced costs and additional returns) are listed on the top of the budget. The negative impacts (additional costs and reduced returns) are listed on the lower part of the budget.
Worksheet 1: Partial Budget Format

Proposed Change: __________________________________________

Assumptions: __________________________________________

_____________________________________________________

Key Factors: __________________________________________

_____________________________________________________

Positive Impacts:
Reduced Costs

_____________________________________________________

_____________________________________________________

Total Reduced Costs  \( (A) \) $________

Additional Returns

_____________________________________________________

_____________________________________________________

Total Additional Returns  \( (B) \) $________

Total Positive Impacts  \( (A + B) \)  \( (C) \) $________

Negative Impacts:
Additional Costs

_____________________________________________________

_____________________________________________________

Total Additional Costs  \( (D) \) $________

Reduced Returns

_____________________________________________________

_____________________________________________________

Total Reduced Returns  \( (E) \) $________

Total Negative Impacts  \( (D + E) \)  \( (F) \) $________

TOTAL NET EFFECT  \( (C - F) \) = $________
The following analysis is used to demonstrate how partial budgeting can be used to compare the four different drought management strategies. The results of the analysis are listed in Worksheet 2. See the appendices for detailed budgets. The strategies can be ranked according to the net effect. Pay careful attention to the assumptions made in the analysis. Different assumptions can change the results substantially.

The least costly strategy, based on the assumptions, is Strategy 4. The cost of this plan would be approximately $5,296 or $21.18 per cow. Second in comparison was Strategy 3 with an expected cost of $44,998 or $179.99 per cow. Retaining ownership appears to be much more costly due to the high cost of feed and high transportation costs. Strategy 1 (transport cow/calf pairs to grass) has an expected loss of $58,889 or $236.56 per cow and Strategy 2 (drylot both cows and calves) has an expected loss of $65,839 or $263.36 per cow.

Certainly there are other biological, genetic, and related issues that must be considered. The availability of cow/calf pairs adapted to your environment is another important concern, particularly ranches located at higher elevations. Current carryover hay and forage inventories, availability of other crops for feed, and uncertainty about market conditions in the coming year, may play an important role in the final decision.

Worksheet 2: Partial Budget Drought Analysis Results

<table>
<thead>
<tr>
<th>Strategy</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transport to Grass</td>
<td>Drylot Pairs</td>
<td>Liquidate &amp; Buy Back</td>
<td>Early Wean Sell Cows Drylot Calves</td>
</tr>
<tr>
<td>Positive Impacts:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced Costs</td>
<td>784</td>
<td>784</td>
<td>74,451</td>
<td>75,235</td>
</tr>
<tr>
<td>Additional Returns</td>
<td>0</td>
<td>0</td>
<td>439,018</td>
<td>356,655</td>
</tr>
<tr>
<td>Total Positive Impacts</td>
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<td>$784</td>
<td>$513,469</td>
<td>$431,890</td>
</tr>
<tr>
<td>Negative Impacts:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Costs</td>
<td>59,673</td>
<td>66,623</td>
<td>368,198</td>
<td>414,585</td>
</tr>
<tr>
<td>Reduced Returns</td>
<td>0</td>
<td>0</td>
<td>160,269</td>
<td>22,601</td>
</tr>
<tr>
<td>Total Negative Impacts</td>
<td>$59,673</td>
<td>$66,623</td>
<td>$558,467</td>
<td>$437,186</td>
</tr>
<tr>
<td>Net Effect</td>
<td>$-58,889</td>
<td>$-65,839</td>
<td>$-44,998</td>
<td>$-5,296</td>
</tr>
<tr>
<td>Net Effect Per Cow</td>
<td>$-236.56</td>
<td>$-263.36</td>
<td>$-179.99</td>
<td>$-21.18</td>
</tr>
</tbody>
</table>

Notes... (For More Information) Contact: Rod Sharp, Ag. & Business Management, CSU Extension
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(Updated May 2012)
Appendix A

Strategy 1 - Transport Cow/Calf Pairs to Grass

Assumptions:
1. 250 cows with 45 replacement heifers
2. Pull off of Federal grazing 2 months early
3. Transport 500 miles one-way
   $4.50 per loaded mile
   30 pairs per load
4. Pasture $22/AUM for 3 months
5. 30 day feed supply around Ranch

Key Factors:
1. Transportation Costs (Distance)
2. Pasture Rental Rate
3. Normal year summer pasture cost

Positive Impacts:
   Reduced Costs
   Federal Grazing
   250 pairs x $1.35 x 2 months = $675
   45 repl. heifers x .9 x $1.35 x 2 mo. = 109
   Total Reduced Costs . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (A) $784

   Additional Returns
   None
   Total Additional Returns . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (B) $0

   Total Positive Impacts (A+B) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (C) $784

Negative Impacts:
   Additional Costs
   Transportation
   Cow/Calf Pairs: 8 Trucks x 1000 miles x $4.50 = $36,000
   Replacements: 1 Truck x 1000 miles x $4.50 = $4,500
   Pasture Rent
   250 pairs x $22/AUM x 3 months = $16,500
   45 repl. heifers x .9 x $22/AUM x 3 months = $2,673
   Total Additional Costs . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (D) $59,673

   Reduced Returns
   None
   Total Reduced Returns . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (E) $0

   Total Negative Impacts (D+E) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (F) $59,673

TOTAL NET EFFECT (C-F) = $-58,889 or $-236.56 per cow
Appendix B

Strategy 2 - Drylotting Cow/Calf Pairs

Assumptions: 1. 250 cows with 45 replacement heifers  
2. Drylot cow/calf pairs for 3 months  
3. Hay 25 lbs. per day ($180/ton or $0.09/lb.)  
4. Barley 3 1/3 lbs. per day (.10/lb. or 4.80/bu.)  
5. 30 days clean-up around the Ranch

Key Factor(s): 1. Feed Costs  
2. Normal year summer pasture costs

Positive Impacts:
Reduced Costs
Federal Grazing
250 pairs x $1.35 x 2 months = $675
45 heifers x .9 x $1.35 x 2 months = $109
Total Reduced Costs . . . . . . . . . . . . . . . . . . . . . . . . . (A) $784

Additional Returns
None
Total Additional Returns. . . . . . . . . . . . . . . . . . . . . (B) $0

Total Positive Impacts (A+B) . . . . . . . . . . . . . . . (C) $784

Negative Impacts:
Additional Costs
Hay
25 lbs. x 90 days x 250 pairs x $.09/lb. = $50,625
20 lbs. x 90 days x 45 repl. x $.09/lb. = $7,290
Barley
3 1/3 lbs. x 90 days x 250 pairs x $.10/lb. = $7,493
3 lbs. x 90 days x 45 repl. x $.10/lb. = $1,215
Total Additional Costs . . . . . . . . . . . . . . . . . . . . . . . . (D) $66,623

Reduced Returns
None
Total Reduced Returns . . . . . . . . . . . . . . . . . . . . . . (E) $0

Total Negative Impacts (D+E) . . . . . . . . . . . . . . . . (F) $66,623

TOTAL NET EFFECT (C-F) = $-65,839 or $-263.36 per cow
Appendix C

Strategy 3 - Liquidate Cow/Calf Pairs in 2112 and Buy Back in 2013

Assumptions:
1. 250 cows with 45 replacement heifers
2. Sell cow/calf pairs for $1,500 per pair, 45 repl. heifers for $1,350
3. Buy back in 2013 for $1,500 per pair
4. Sales income draws interest at 1% for 9 months (Aug. '12 - April '13)

Key Factor(s)
1. Cow/calf pair sale price
2. Cow/calf pair buy back price
3. Availability of cow/calf pairs for buy back
4. Interest income

Positive Impacts:
Reduced Costs
Federal Grazing
250 pairs x $1.35 x 2 months = $ 675
45 heifers x .9 x $1.35 x 2 months = $ 109
Winter Feeding
Hay - 2.1 ton x 250 hd x $100 = $ 52,500
Grain - .3 cwt x 250 x $11 = $ 825
Salt/Min. - 30 lbs. x 250 x .22 = $ 1,650
Other Variable Expenses (103.87 x 9/12 x 250) = $ 19,476
Total Reduced Costs .................. (A) $ 74,451

Additional Returns
Cow/Calf Pairs - 250 hd x $1,500 = $375,000
Replacement heifers - 45 hd. x $1,350 $ 60,750
Interest Income - $435,750 x 1% x 9/12 of a year = $ 3,268
Total Additional Returns .................. (B) $439,018

Total Positive Impacts (A+B) .................. (C) $513,469

Negative Impacts
Additional Costs
Marketing Expenses: 3% of gross (.03 x $435,750) = $ 13,073
Transportation: 9 trucks x 250 miles x $4.50 = $ 10,125
Buy Back: 250 cow/calf pairs x $1,500.00 = $375,000
Total Additional Costs .................. (D) $398,198

Reduced Returns
Steers: 110 hd x 585 lbs. x $1.36 = $ 87,516
Heifers: 68 hd. x 563 lbs. x $1.31 = $ 50,152
Cull Cows: 35 hd. x $0.63 x 1025 lbs. = $ 22,601
Total Reduced Returns .................. (E) $160,269

Total Negative Impacts (D+E) .................. (F) $558,467

TOTAL NET EFFECT (C-F) = $-44,998 or $-179.99 per cow
Strategy 4 - Early Weaning, Drylotting Calves, Selling Cows, Buying Back Cow-Calf Pairs in 1997

Assumptions: 1. Sell cows and replacement heifers for $1,200
2. Buy pairs back in 2013 for $1,500 per pair
3. Sales income earn interest at 1% for 9 months

Key Factor(s) 1. Cow sale price
2. Cow/calf pair buy back price
3. Availability of cow/calf pairs for buy back
4. Interest income
5. Feed costs (calves)

Positive Impacts:
Reduced Costs
Federal Grazing = $ 784
Winter Feeding = $ 54,975
Other Variable Expenses (Labor, Fuel & Utilities) = $ 19,476
Total Reduced Costs . . . . . . . . . . . . . . . . . . (A)  $ 75,235

Additional Returns
Cows - 250 hd x $1,200 = $300,000
Replacement heifers - 45 hd. x $1,200 = $ 54,000
Interest Income - $354,000 x 1% x 9/12 of a year = $ 2,655
Total Additional Returns . . . . . . . . . . . . . . . . . . (B) $356,655

Total Positive Impacts (A+B) . . . . . . . . . . . . . . . . . . (C) $431,890

Negative Impacts:
Additional Costs
Marketing Expenses: 3% of gross (.03 x $389,250)
(Comm., Brand Insp., Health Inspection, etc.) = $ 11,678
Transportation: 8 trucks x 250 miles x $4.50 = $ 9,000
Feeding Calves:
Hay - 10 lbs. x 90 days x .09 x 208 hd. = $ 16,848
Grain - 1 lb. x 90 days x .11 x 208 hd. = $ 2,059
Cow Purchase: 250 pairs x $1,500 = $375,000
Total Additional Costs . . . . . . . . . . . . . . . . . . (D) $414,585

Reduced Returns
Cull Cows: 35 hd. x $0.63 x 1025 lbs. = $ 22,601
Total Reduced Returns . . . . . . . . . . . . . . . . . . (E) $ 22,601

Total Negative Impacts (D+E) . . . . . . . . . . . . . . . . . . (F) $437,186

TOTAL NET EFFECT (C-F) = $-5,296 or $-21.18/cow