

# FARM Assistance

*Focus*

 Texas Cooperative  
**EXTENSION**  
The Texas A&M University System



## Drought Recovery in South Texas Ranches

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## *With renewed optimism [from the rains in late 2006 and early 2007], cattlemen are responding by implementing management strategies to rebuild herds.*

**R**ains in late 2006 and early 2007 over many parts of South Texas somewhat abated drought conditions that had persisted for over a year. With renewed optimism, cattlemen are responding by implementing management strategies to rebuild herds in an attempt to recover from the financial effects of drought. These effects include heavier-than-normal culling of cow herds, supplemental feeding and/or selling calves at lighter weights due to drought reduced forage conditions. Conversely, isolated parts of South Texas have received only minimal levels of precipitation. These producers are likely to have poor forage conditions again in 2007 and, at best, may only be able to maintain the already culled herds. A continued drought situation and a dry spring reducing forage conditions will further increase cash flow and financial concerns of affected producers. For those producers blessed with improving forage conditions,

overall recovery from the recent drought will be slowed by previous losses incurred and high-priced herd replacements. Herd rebuilding will likely be over a 2-3 year period as forage conditions improve.

### **Assumptions**

The Financial And Risk Management (FARM) Assistance financial planning model was used to evaluate and illustrate the individual financial impacts of continued drought and drought recovery. Two scenarios, 1) continued drought in 2007 and 2) drought recovery in 2007, were assumed. This study estimates the impact of one more year of drought vs. drought recovery in 2007 on a hypothetical commercial cow-calf ranch in South Texas. The representative ranch is assumed to be 2,000 acres and the basic assumptions and characteristics are given in Table 1. Production costs and estimates for overhead charges were based on typical

rates for the region under continued drought and recovery scenarios. Cattle prices were obtained from the Live Oak Livestock Commission Company auction report in Three Rivers, Texas, for February 19, 2007.

The representative ranch was analyzed over a 10 year period. In the continued drought scenario, there is no further herd culling in 2007 and herd rebuilding occurs in 2008-2010. Conversely, in the drought recovery scenario, herd rebuilding occurs in 2007-2009. The base year for the 10-year analysis is 2007 and projections are carried through 2016. The assets, debts, machinery inventory and scheduled equipment replacements for the projection period were the same in both the drought and recovery scenarios. It is assumed the ranch has a \$60,000 carryover debt from 2006 in both scenarios. Commodity

Table 1: Representative South Texas Ranch Assumptions

Selected Parameter	Continued Drought	Drought Recovery
Operator Off-Farm Income	\$24,000/year	Same
Spouse Off-Farm Income	\$35,000/year	Same
Family Living Expense	\$30,000	Same
Ownership Tenure	100%	Same
Carryover Debt	\$60,000	Same
Herd Size	145 cows, 6 bulls in 2007; 200 cows, 8 bulls by 2010	Same; 200 cows, 8 bulls by 2009
Calf Weaning Rate	85%	Same
Cow Herd Replacement	Bred Cows	Same
Hay Fed/Cow/Year	5.0 tons in 2007, 2.5 tons in 2008 1.5 tons in 2009, 0.9 tons in 2010-2016	2.5 tons in 2007, 1.5 tons in 2008, 0.9 tons in 2009-2016
Protein Cubes Fed/Cow/Year	400 lbs in 2007, 200 lbs in 2008, 100 lbs in 2009-2016	200 lbs in 2007, 100 lbs in 2008-2016
Cow Culling Rate/Year	0.0% in 2007, 2.5% in 2008, 5.0% in 2009, 7.5% 2010-2016	2.5% in 2007, 5.0% in 2008, 7.5% in 2009-2016
Steer Weaning Weights	475 lbs in 2007-2008, 500 lbs in 2009, 525 lbs in 2010-2016	475 lbs in 2007, 500 lbs in 2008, 525 lbs in 2009-2016
Heifer Weaning Weights	425 lbs in 2007-2008, 450 lbs in 2009, 475 lbs in 2010-2016	425 lbs in 2007, 450 lbs in 2008, 475 lbs in 2009-2016
Steer Prices	\$1.20/lb in 2007, \$1.10/lb in 2008, \$1.00/lb in 2009	\$1.20/lb in 2007, \$1.07/lb in 2008, \$0.97/lb in 2009
Heifer Prices	\$1.12/lb in 2007, \$1.02/lb in 2008, \$0.92/lb in 2009	\$1.12/lb in 2007, 0.99/lb in 2008, \$0.89/lb in 2009
Cull Cow Prices	\$0.513/lb	Same
Cull Bull Prices	\$0.605/lb	Same
Bred Cow Prices	\$1,100/head	Same
Replacement Bull Prices	\$2,000/head	Same
Hay Prices	\$140/ton in 2007, \$120/ton in 2008, \$100 ton in 2009-16	Same
Range Cube Prices	\$0.135/lb	Same

*A continued drought period would severely affect the long-term profitability and financial condition of a ranch in South Texas.*

Table 2: Financial Projections - Selected Indicators											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average
<b>Total Cash Receipts (\$1,000)</b>											
Continued Drought in 2007	78.90	76.97	83.77	89.91	92.13	89.12	91.32	95.08	98.54	97.81	89.35
Drought Recovery in 2007	81.72	89.46	95.46	95.34	92.13	89.12	91.32	95.08	98.54	97.81	92.60
<b>Total Cash Costs (\$1,000)</b>											
Continued Drought in 2007	150.75	131.13	113.41	102.21	92.20	89.47	87.89	86.34	85.34	85.04	102.38
Drought Recovery in 2007	128.37	115.96	100.60	86.75	84.30	81.97	82.45	83.39	84.46	84.91	93.32
<b>Net Cash Farm Income (\$1,000)</b>											
Continued Drought in 2007	-71.85	-54.16	-29.65	-12.29	-0.06	-0.35	3.43	8.74	13.19	12.78	-13.02
Drought Recovery in 2007	-46.65	-26.50	-5.14	8.59	7.84	7.15	8.87	11.69	14.07	12.90	-0.72
<b>Ending Cash Reserves (\$1,000)</b>											
Continued Drought in 2007	-46.62	-83.06	-93.34	-86.18	-76.93	-53.94	-27.63	2.39	35.03	75.54	
Drought Recovery in 2007	-22.71	-34.77	-25.08	-1.92	12.18	40.95	71.17	103.43	137.50	176.42	
<b>Real Net Worth (\$1,000)</b>											
Continued Drought in 2007	1,867.53	1,862.69	1,859.15	1,852.03	1,858.63	1,867.67	1,916.61	1,967.11	2,020.36	2,059.79	
Drought Recovery in 2007	1,910.09	1,922.85	1,931.97	1,930.15	1,939.54	1,961.19	2,003.25	2,054.36	2,107.33	2,146.21	

price trends follow projections provided by the Food and Agricultural Policy Research Institute (FAPRI, University of Missouri) with costs adjusted for inflation over the planning horizon.

Financial measures are used to quantify and analyze the financial well-being of a farm or ranch. The projected financial position and performance was evaluated across four major categories including liquidity, solvency, profitability, and repayment capacity. Representative measures were chosen for each of these five categories and are presented in tabular and/or graphical format for each scenario. Each measure chosen provides information with respect to the projected variability in the ranches financial position and performance. When taken as a whole, these measures provide insight into the risk bearing ability of the ranch throughout the planning horizon.

### Results

A comprehensive projection including price and weaning weight risk for the normal and drought scenarios are illustrated in Table 2 and Figure 1. Table 2 presents the average outcomes for selected financial

projections, while Figure 1 illustrates the range of possibilities for ending cash reserves and the probability of having to refinance the operating note. Cash receipts averaged \$89,350 over the 10-year period for the continued drought scenario, 3.5% less than the drought recovery scenario. The lower cash receipts in the continued drought scenario reflects smaller herd size and delayed herd rebuilding. Average cash costs were \$102,380 for the continued drought conditions, 9.7% higher than with the drought recovery scenario reflecting the higher feeding costs incurred.

Profitability measures the extent to which a farm or ranch generates income from the use of resources. In the continued drought scenario, profitability of the ranch is more severely impacted over the ten year planning horizon. Net cash farm income (NCFI) is projected to be -\$71,850 in 2007, compared to -\$46,650 in recovery conditions (Table 2). For 2007-2016, it is expected to average -\$13,020 under the continued drought conditions and -\$720 in recovery conditions. The negative NCFI under both scenarios during the early years of the projection period is primarily due to

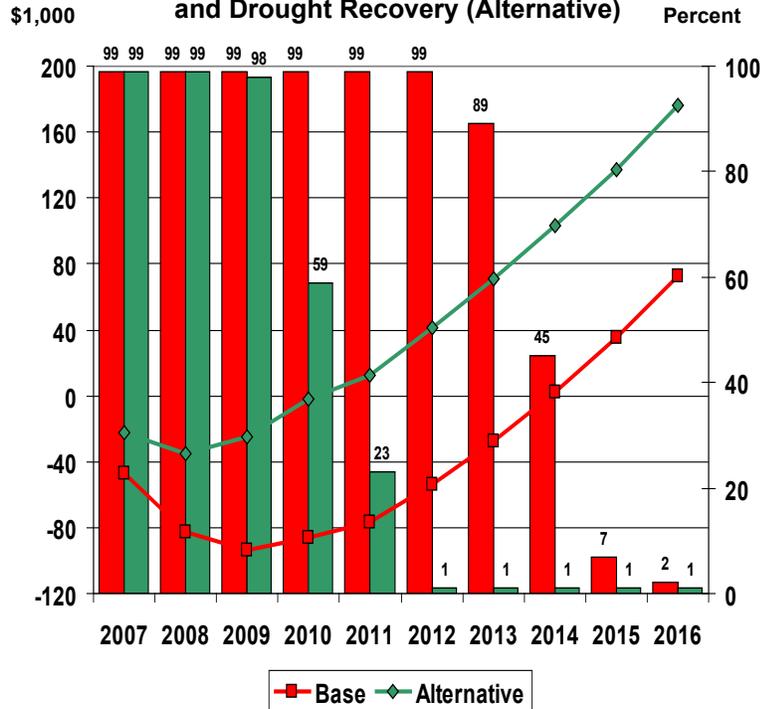
the increased feeding costs, reduction in herd size and number of calves sold, and servicing carryover debt.

Liquidity measures the ability of a farm or ranch to meet its short-term financial obligations without disrupting the normal operations of the business. The liquidity of the operation is measured by the ending cash balance (Table 2 and Figure 1). In the continued drought scenario, cash flow problems are projected to persist during the first seven years and cash reserves grow to only \$75,540 during the planning horizon. This compares to a growth in cash reserves in the drought recovery scenario to \$176,420, a \$100,880 difference. Figure 1 illustrates average ending cash balances and risk of cash shortfalls. Between 2007 and 2014, there is significant risk of negative reserves in the continued drought conditions, but, in the recovery scenario, negative reserves are less likely after 2010.

Repayment capacity measures the ability of a borrower to repay debt. Figure 1 further depicts the risk associated with the ending cash balance by showing the probability of refinancing or carryover operating debt. Due

*The FARM Assistance program is designed to help individuals to evaluate their business strategies and options.*

**Figure 2: Ending Cash Reserves and Probability of Having to Refinance Operating Note for Continued Drought (Base) and Drought Recovery (Alternative)**



**Implications**

The projected results clearly show that a continued drought period would severely affect the long-term profitability and financial condition of a ranch in South Texas. In both continued drought and recovery conditions, there are many strategies that a ranch business can implement and each individual rancher should evaluate their options in light of their own individual situation. The FARM Assistance program is designed to help individuals to evaluate their business strategies and options. A prudent manager will implement management strategies, including stocking, culling and/or feeding, to optimize the use of available forage and minimize the long-term financial impact of drought. Management should also consider strategies to implement during good years including maintaining forage, nutritional and financial reserves.

to the \$60,000 carryover debt from 2006, both scenarios have a high probability in the early years of the projection period. The probability of carryover debt is 99% or more during 2007-2012 and then declines to 2% by 2016 assuming continued drought conditions. In the drought recovery conditions, the probability of carryover debt is 99% or more in 2007-2008 before declining in subsequent years. A continued drought would clearly impact the ranch's debt servicing ability. Both scenarios assume a return to normal conditions in 2008 and beyond.

Solvency is a comparison of the value of owned assets to the amount of debts owed and real net worth is a measure of the owner's interest or equity adjusted for inflation. Growth in cash reserves and real estate assets translates into a projected increase in real net worth in both scenarios. In continued drought conditions, the operation begins 2007 with a real net worth of \$1.95 million which generally increases to \$2.06 million by 2016 (Table 2). However, in the drought recovery scenario, real net worth reaches \$2.15 million by 2016, about 4.2% higher than the continued drought scenario.

FARM Assistance Focus Series 2007-1, conducted by Kaase, Young, Klose, Paschal, Hanselka and Jupe (February 2007) compares the long term financial impacts of two different drought management strategies (maintain cow herd size vs. reducing herd size). The results of this study indicate different short term impacts, but both strategies have similar long term financial outcomes.. You can read this study in full at <http://farmassistance.tamu.edu/publications/focus>.

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