Rancher Response to Multiyear Drought: The Case for Utah

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Research Objectives

- Determine…
  - Effects of the 1999-2004 drought
  - How ranchers coped
  - Whether preparedness has changed
  - Factors that influence preparedness
  - Why some drought-mitigation practices appear underutilized

Utah Ranching

- Utah is a public land state
- About 65% of cattle ranchers are permittees
- Ranches often include hay production
- Large variation in ranch size
- Large variation in rancher livelihoods

Methods

- Combined mail and phone surveys
- Implemented by Utah USDA NASS
- 2009
  - Simple random sample of 615 cattle ranchers
  - Mixture of short answer, multiple choice
- 2010
  - Targeted re-survey of 429 previous respondents *not* using one or more drought-mitigation tactics

Results

Ranch Descriptors (median values)

Brood herd size = 135 hd

Age of ranch operation = 41 yr

Age of decision maker = 58 yr

Experience of decision maker = 28 yr

Formal education of decision maker = 13 yr

The 1999-2004 Drought Negatively Affected 75% of Ranches

Variable	Median Percent Decline
Grazing capacity	30
Water Supplies	33
Hay Production	30
Cattle Sale Weights	10
Brood Herd Number	15

Only 14% Were Prepared in 1998

Crisis Response, 1999-2004	"Yes I Did This"
Government Relief Programs	68 ± 5
Emergency Hay Purchases	66 ± 4
Emergency Livestock Sales	53 ± 4
Emergency Water	36 ± 4
Emergency Trucking	28 ± 4
Claimed Tax Write-Offs	26 ± 4
Renegotiated Bank Loans	23 ± 4
Relief from Private Sources	5 ± 2

Many Fell into the “Drought Trap”

- Successive years where costs exceeded revenue
- Lingering effects past 2009

Many Risk Management Tactics Used by 2009

Risk Management Tactics	"Yes I am Doing This"
Improving Livestock Water	76 ± 4
Diversifying Income	68 ± 4
Improving Irrigation	67 ± 4
Improving Land Management	57 ± 5
Reducing Stocking Rates	56 ± 5
Enroll Gov't Programs	55 ± 5
Increased Hay Production	53 ± 4
Purchase Feed Insurance	38 ± 4

Risk Management Tactics Used by 2009, cont'd.

Risk Management Tactics	"Yes I am Doing This"
Seeking Extension Info.	37 ± 4
Internet Drought Forecasts	31 ± 4
Forward Contract—Livestock Sales	30 ± 4
Increased Hay Storage	29 ± 4
Plan to Use Grass Banks	26 ± 4
Renegotiating Bank Loans	17 ± 4
Forward Contract—Hay Purchase	8 ± 3

Perceived Past and Current Drought Preparedness (n = 504)

Response	1998	2009
Prepared	14 ± 3	29 ± 4
Somewhat Prepared	54 ± 5	51 ± 4
Unprepared	29 ± 4	16 ±3
Don’t Know	4 ± 2	4 ± 2

Factors Associated with Increased Preparedness (out of 9 examined)

- More past drought actions taken ($p<0.01$)
- Extent of past drought impacts ($p=0.02$)
- Expecting another drought ($p<0.01$)

Rancher Self-Assessments

- Self-rankings as drought managers
  - Excellent (4%)
  - Good (32%)
  - Average (48%)
  - Fair (9%)
  - Poor (7%)

Rancher Needs

- Want more policy that is pro-ranching and pro-drought management
  - Higher prices for ranch products
  - Protection of ranch water rights
  - More cooperation with federal agencies

- More Extension info—best practices
- Better drought-forecasting tools
- Drought-tolerant forages/range improvements

What Limits Greater Use of Risk Mitigation Tactics?

Possible Constraints	Roger's Innovation Adoption Categories
Not a Problem / No Need	Compatibility
Too Costly	Relative Advantage
Too Complex, Too Risky	Complexity
Lack of Key Resources to Implement	Compatibility
Unaware of Tactic	Compatibility (?)

Breakdown of Responses

Tactic	n	Not a Problem	Too Costly	Too Complex	Lack of Key Resources	Unaware
Forward Contracting Hay	382	62%				
Bank Loans	332	63%				
Grass Banks	309				31%	33%
More Hay Storage	288	55%	21%			
Forward Contracting Livestock	271	34%		32%		

Breakdown of Responses, cont'd

Tactic	n	Not a Problem	Too Costly	Too Complex	Lack of Key Resources	Unaware
Weather Forecasts	265			65%*		
Extension Info.	244	34%		17%*		27%
Feed Insurance	240	36%	24%			
Disaster Relief Programs	175	39%				19%
Reduce Stocking Rates	168	51%	17%			19%

Breakdown of Responses, cont'd

Tactic	n	Not a Problem	Too Costly	Too Complex	Lack of Key Resources	Unaware
Gov't Projects to Improve Land Mgt	158	23%	13%	16%*		17%
Diversify Income	116	55%		18%*		
Improve Livestock Water	87	54%	16%		16%	

Conclusions

- Positive shift in drought awareness and preparedness
- This shift induced by turmoil from last multiyear drought
- Experience with the “drought trap” is forcing more pro-active behaviors

Conclusions, cont'd

- Compared to the past, increased costs of emergency responses—and being a poor manager—are the pressure points
- Greater involvement in government programs need not imply greater dependence on government and expectations of bailouts
- Government programs cannot avert potential disaster for individual operators

Conclusions, cont'd

- Scope for further improvements—*Given an aging population often with low incomes*
  - Not much low-hanging fruit
  - Many tactics perceived as not needed
  - Technical Research
    - Drought forecasts beyond 90-d outlooks

Conclusions, cont'd

- Outreach
  - Grass banks (awareness raising, facilitation)
  - Forward contracting for livestock sales (awareness raising, training)
  - Other gov't programs (awareness raising)
  - Extension (awareness raising, mentoring, improve content and delivery of drought mgt best-practices)

Conclusions, cont'd.

- Policy
  - Continued emphasis on rural economic development to provide off-ranch income diversification opportunities
  - Attention to concerns on water rights, livestock and hay marketing, banking, etc.

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