Agricultural Economic Impact Assessment after Drought

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Dresden-Pillnitz, Germany

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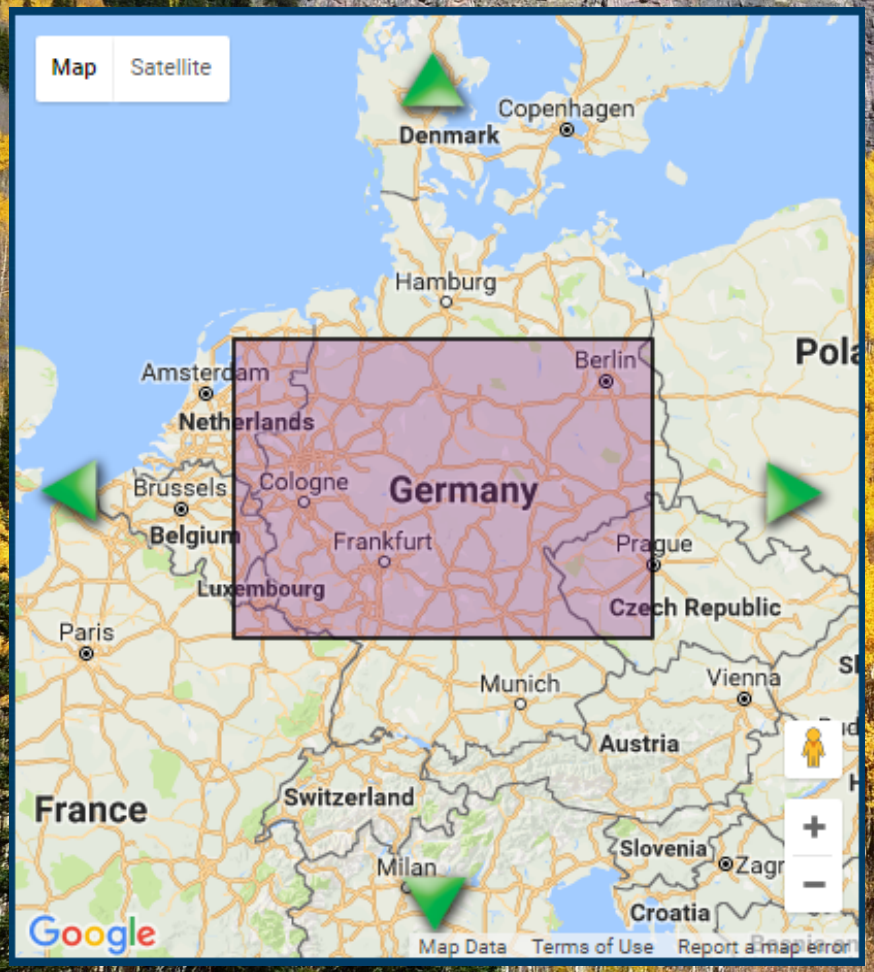
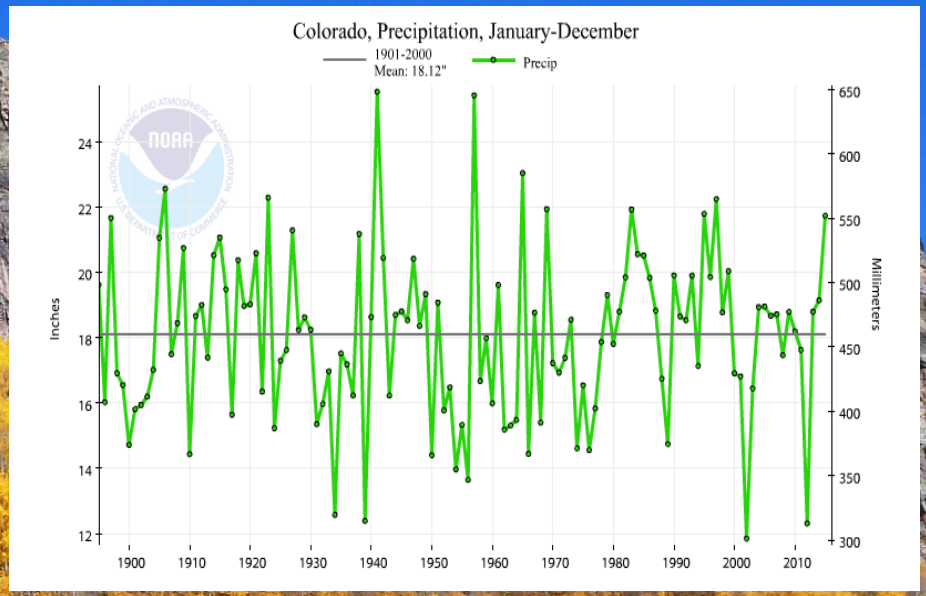
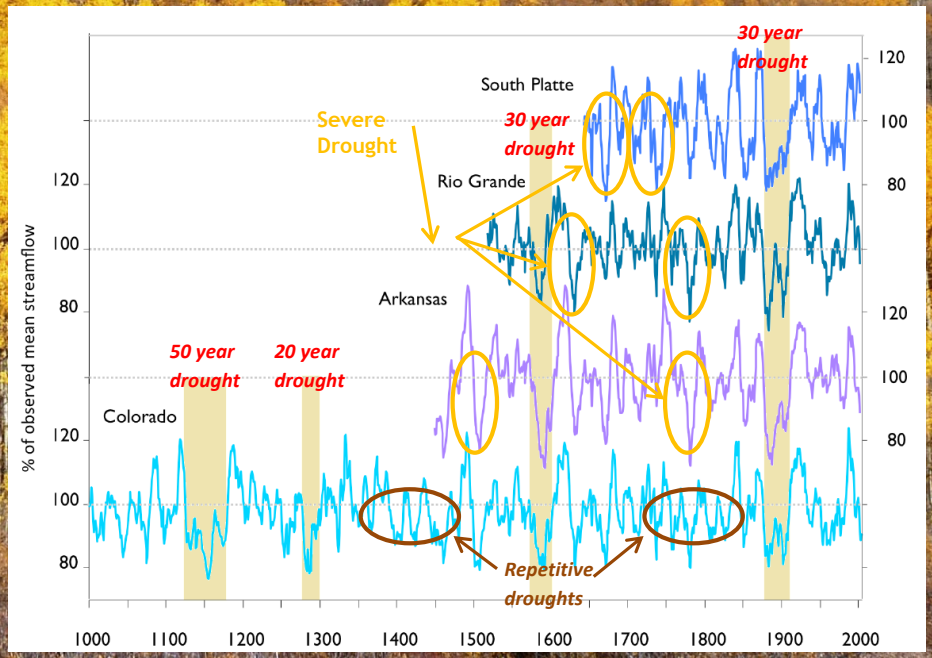
Colorado







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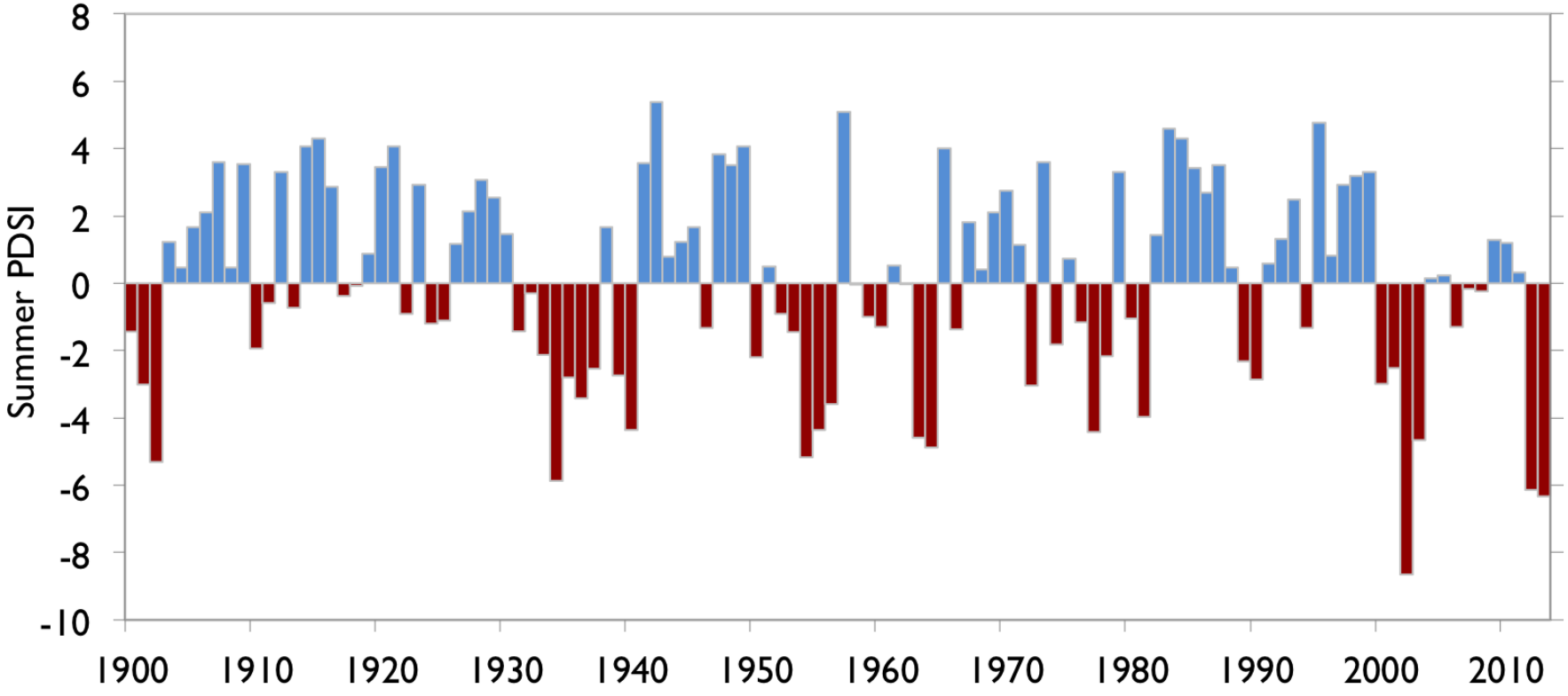
Statewide summer Palmer Drought Index (PDSI): significant trend towards more drought in past 30 years



Observed

Figure 2-11

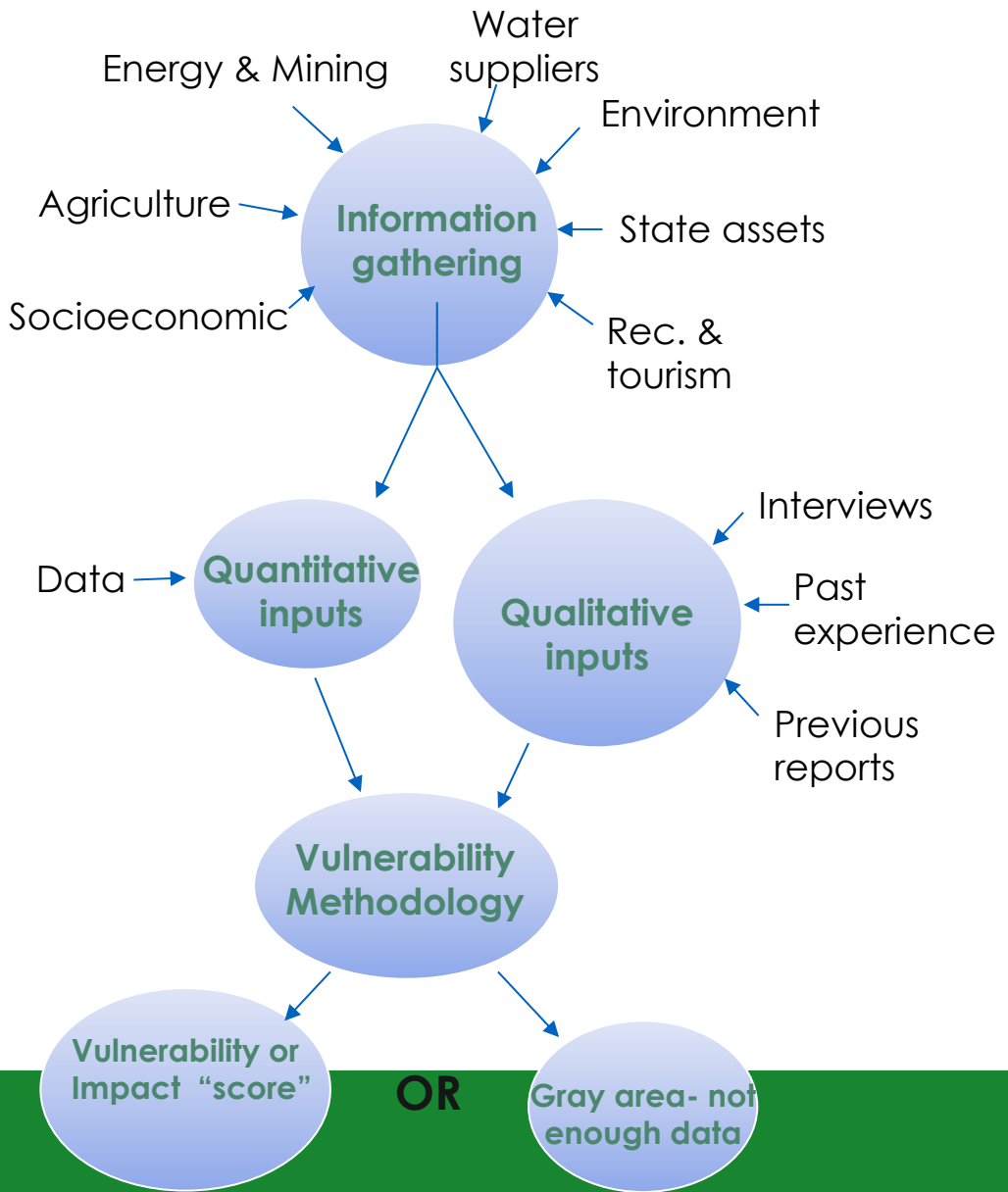
Methodological Framework

Research sectors, publications, previous drought studies

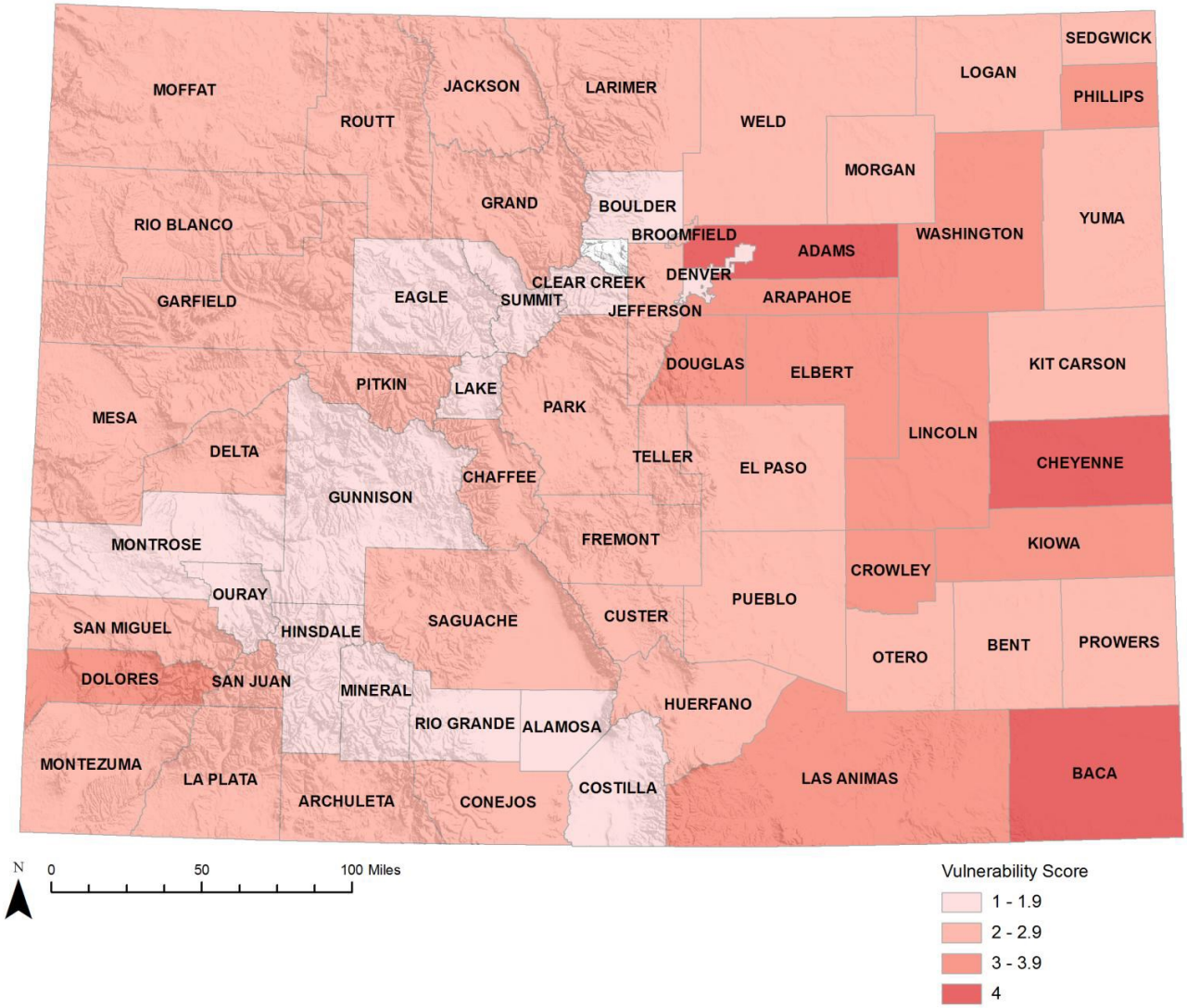
Quantitative data
- What we have
- What we need

Qualitative
- Interviews
- Past experiences
- Specific knowledge of the area

Methodology
Vulnerability "score" OR framework for future data collection



Agriculture Vulnerability



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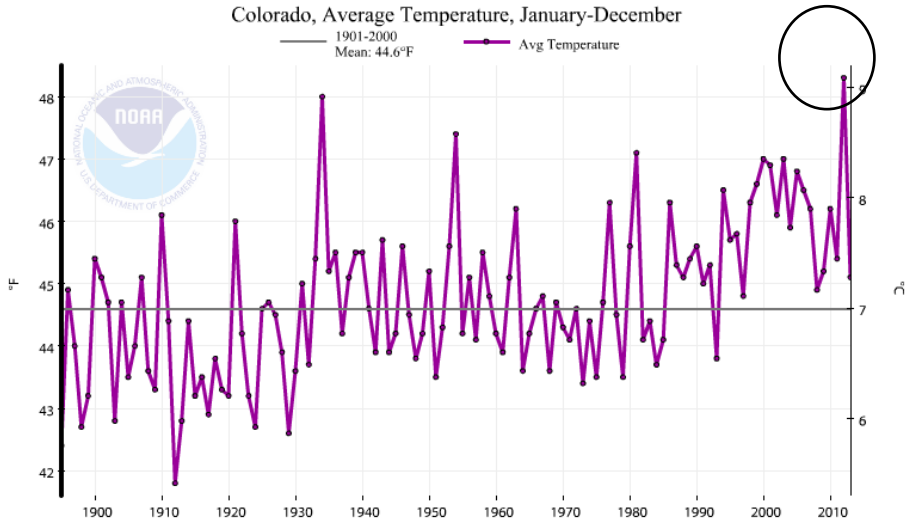
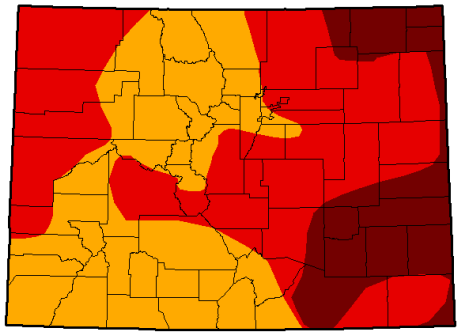


U.S. Drought Monitor

Colorado



September 25, 2012

(Released Thursday, Sep. 27, 2012)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	61.75	16.89
Last Week 9/18/2012	0.00	100.00	100.00	100.00	61.75	16.89
3 Months Ago 6/26/2012	0.00	100.00	100.00	97.72	45.83	0.00
Start of Calendar Year 1/3/2012	65.37	34.63	24.98	10.60	0.04	0.00
Start of Water Year 9/27/2011	60.62	39.38	27.69	19.99	7.88	0.56
One Year Ago 9/27/2011	60.62	39.38	27.69	19.99	7.88	0.56

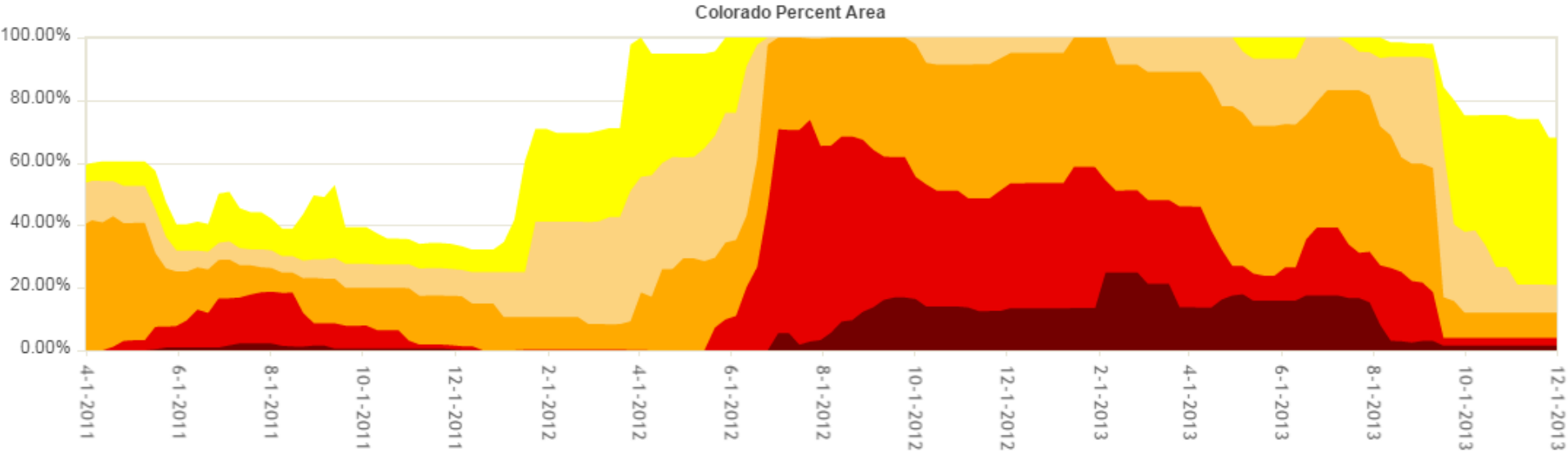
Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Anthony Artusa
NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/



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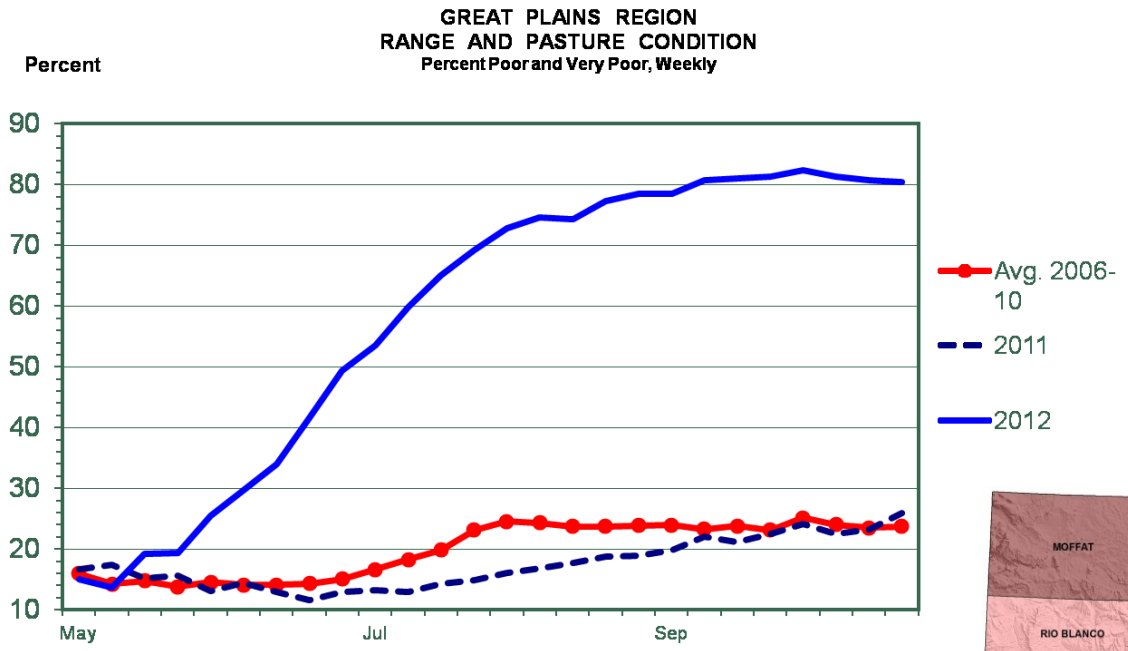
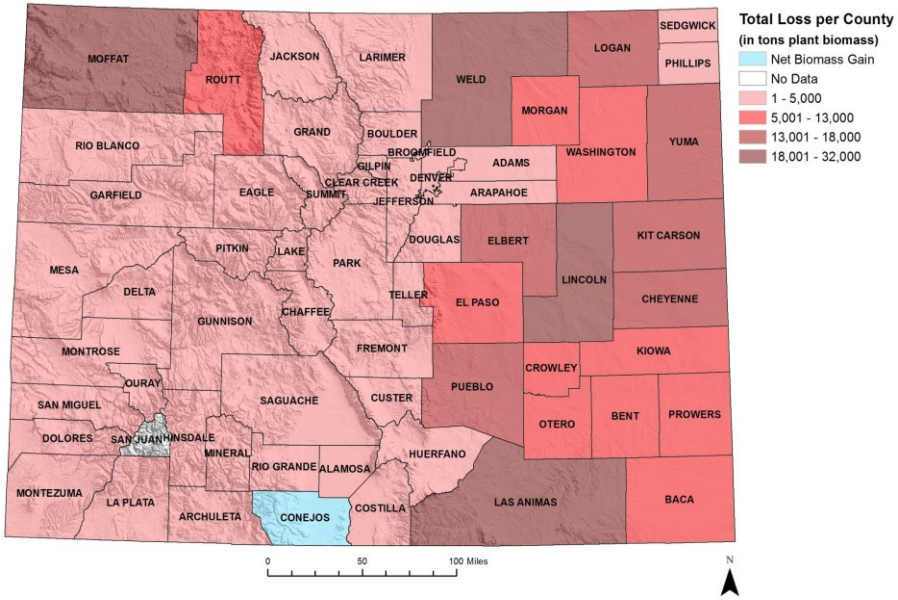
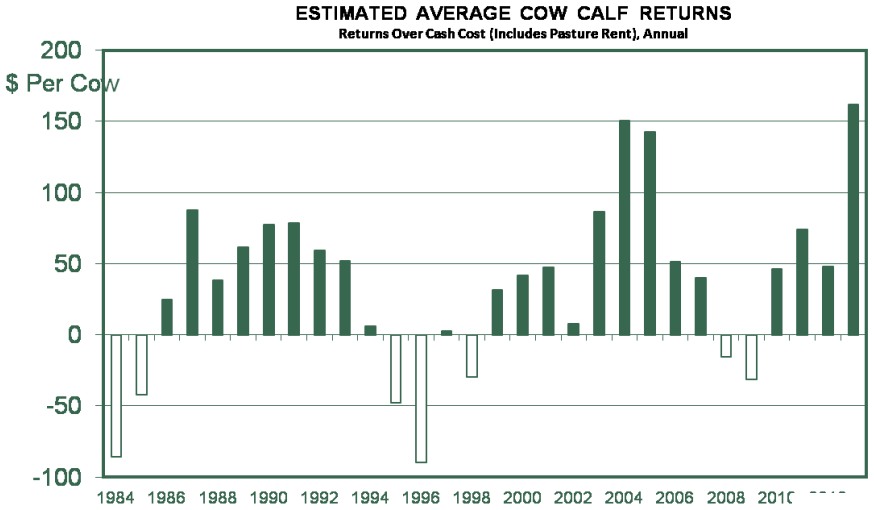
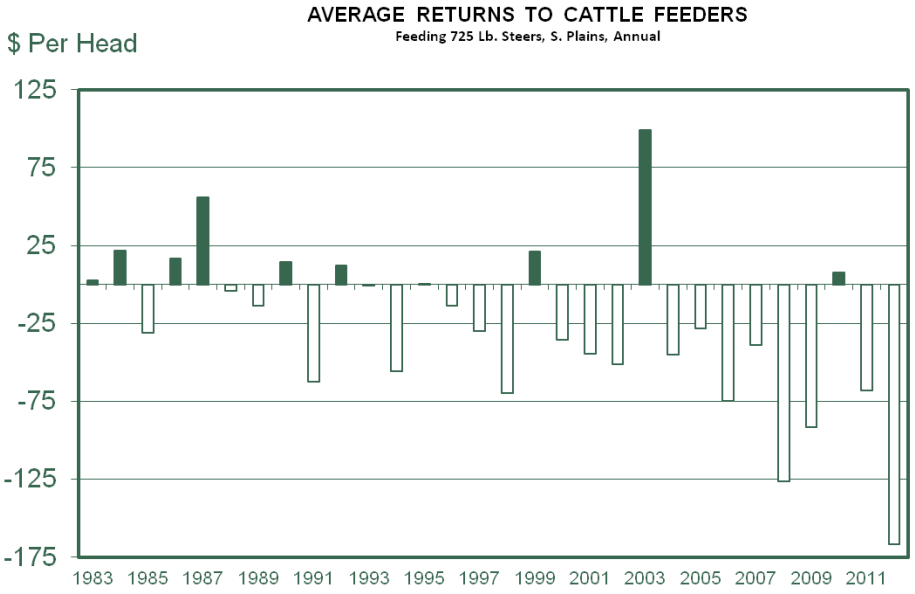
Pasture and Range Impacts





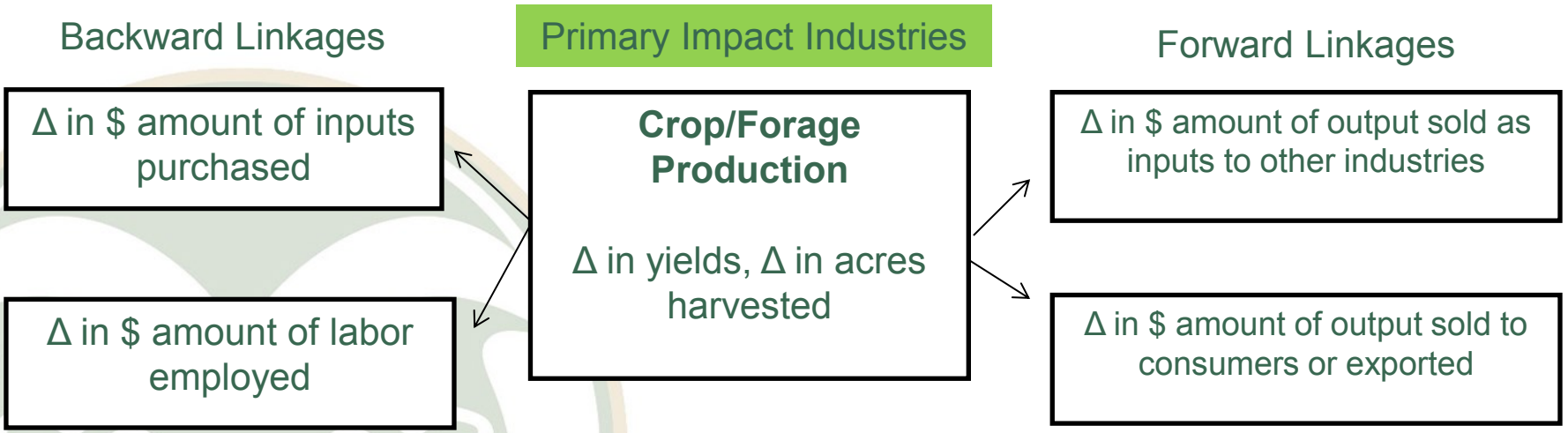
Impacting profitability?





Data Source: USDA-AMS & USDA-NASS, Compiled & Analysis by LMIC

Estimating Economic Impacts with Linkages



2012 Drought Survey

Statewide Online Survey http://tinyurl.com/CSU-drought

- Survey link distributed via stakeholder groups
- Open in December 2013, closed end of March 2013
- Survey Themes
  - Impacts to production
  - Managerial response
  - Local Community Impacts

*533 completed surveys, 412 with zip codes, 4.4 million acres for agricultural land

Forage Production

Hay/Forage Production

Hay/Forage Source	Change in Production Amt.
Alfalfa	-37%
Grass	-40%
Pasture	-45%

Range & Grazing

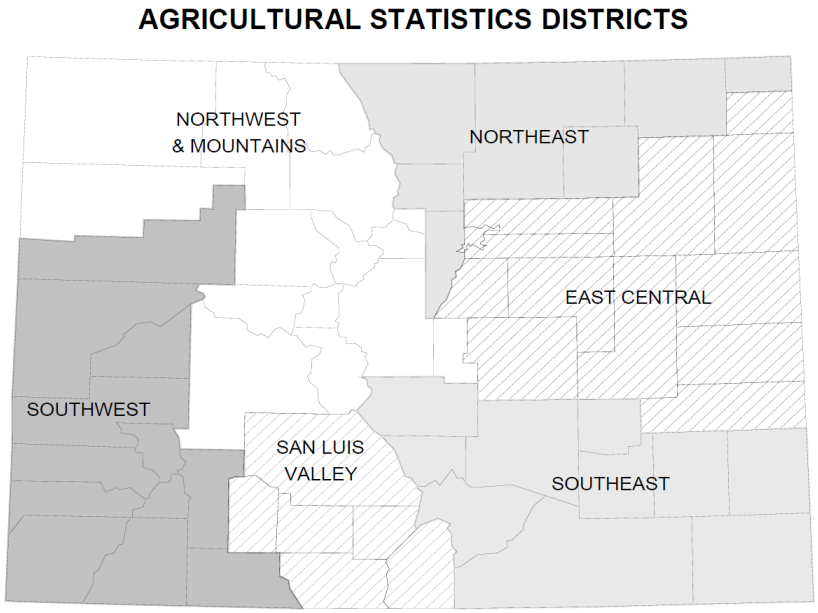
Forage Source	Percent Change in AUMS
Owned Pasture	- 40%
Private Lease	- 9%
Federal Lease	- 31%
State Lease	- 34%
Purchased Hay	51%

Cow/Calf Production

Production Metric	Change from Typical Conditions
Number of Cows	- 48%
Culling Rate	21%
Cow Condition at Present	- 18%
Weaning Percentage	- 1%
Average Weaning Weight	- 16%
Average Cost Per Cow	+ 40%

Alter Production Practices Before or During Drought?

Region	Pct 'Yes'
Northwest & Mtns	66%
Southwest	42%
San Luis Valley	63%
Northeast	70%
East Central	60%
Southeast	92%
Statewide	***64%***



What are typical responses?

- *Reduce Expenses*
- *Improve Cash Flow*
- *Increase Asset Turnover*
- *Begin to Cull Assets*

2012 and Average Revenues for Selected Colorado Crops

	2012 Revenues	2000 - 2010 Average Revenue	What Might Have Been Revenues[a]	Difference Between 2012 Revenues and What Might Have Been
Crops				
Barley	$45,663,750	$29,513,530	$46,967,828	-$1,304,078
Corn Grain	$947,026,500	$514,752,255	$1,201,519,061	-$254,492,561
Corn Silage	$166,400,000	$62,668,182	$183,040,000	-$16,640,000
Dry Beans	$32,457,600	$26,968,564	$30,009,411	$2,448,189
Hay (alfalfa & other)	$885,198,000	$473,898,618	$960,408,099	-$75,210,099
Millet	$22,848,000	$20,393,591	$63,542,169	-$40,694,169
Potatoes	$150,678,450	$188,995,952	$145,700,620	$4,977,830
Sorghum	$20,328,000	$14,940,581	$34,285,537	-$13,957,537
Sunflower	$18,313,120	$22,091,421	$28,005,838	-$9,692,718
Wheat	$602,482,930	$301,562,112	$606,979,514	-$4,496,584
Total	$2,891,396,350	$1,655,784,805	$3,300,458,076	-$409,061,726

[a] What Might Have Been Revenues are 2012 prices multiplied by historical average yields multiplied by 2012 planted acres multiplied by the historical ratio of harvested acres to planted acres.

2012 Economic Activity lost as a result of the Foregone Revenue

Crop	Difference Between 2012 Revenues and What Might Have Been	Foregone Indirect and Induced Economic Activity	Sum of Foregone Revenues, Indirect and Induced Economic Activity
Barley (bu/ac)	$1,304,078	$988,322	$2,292,400
Corn Grain (bu/ac)	$254,492,561	$192,872,377	$447,364,938
Corn Silage (tons/ac)	$16,640,000	$12,610,963	$29,250,963
Dry Beans (lbs/ac)	-$2,448,189	-$1,855,410	-$4,303,598
Hay (tons/ac)	$75,210,099	$66,040,493	$141,250,592
Millet (bu/ac)	$40,694,169	$30,840,906	$71,535,074
Potatoes (cwt/ac)	-$4,977,830	-$3,801,866	-$8,779,697
Sorghum (bu/ac)	$13,957,537	$10,578,004	$24,535,541
Sunflower (lbs/ac)	$9,692,718	$5,483,312	$15,176,030
Wheat (bu/ac)	$4,496,584	$3,407,828	$7,904,411
Total	**$409,061,726**	**$317,164,929**	**$726,226,655**

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