Colorado State University

The Economic Impact of the 2011 Drought on Southern Colorado

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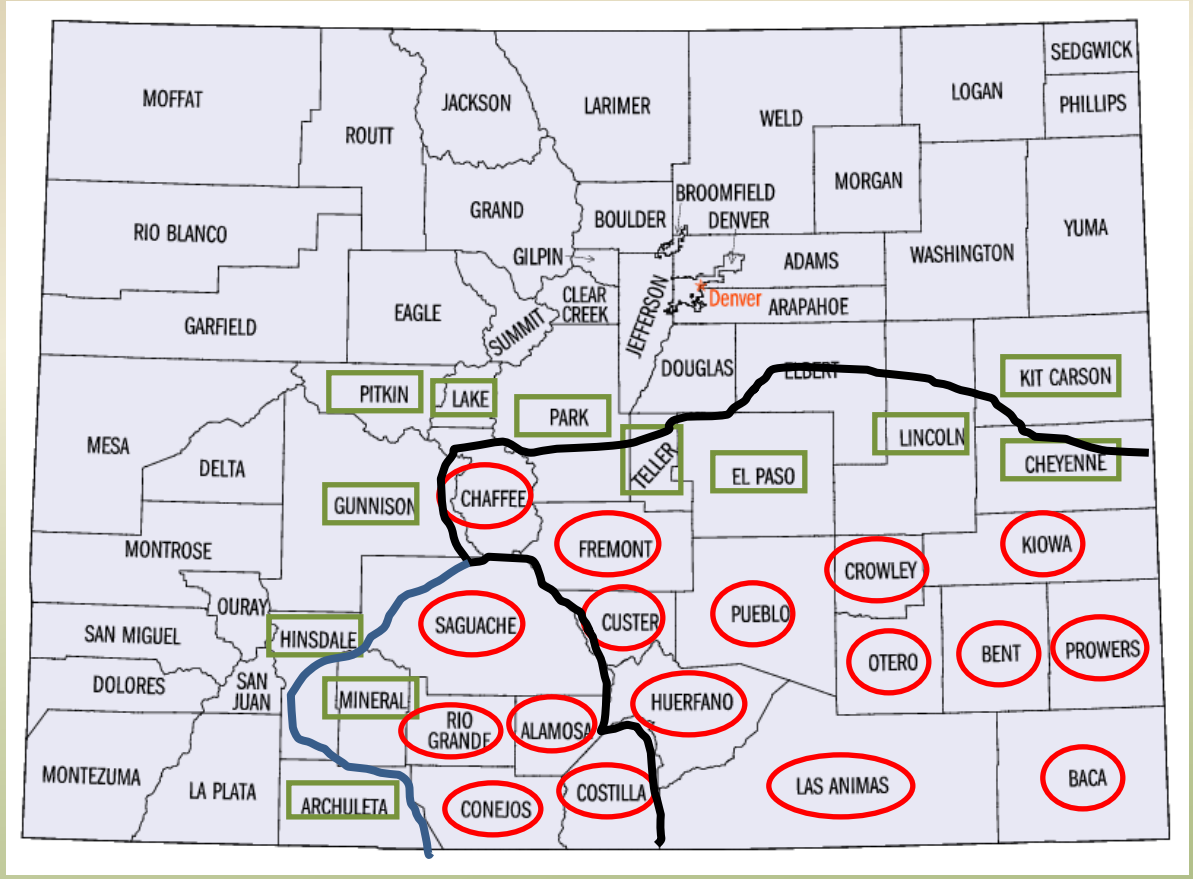


Primary disaster declarations

Secondary designation as a contiguous county

Arkansas River basin

Rio Grande Basin

Key Concepts

- Economic Activity: total number of dollars spent within a region.
- Economic Impact: change in economic activity associated with a particular event.
- Important notes:
  - Economic impact analysis does not reflect the impact of the drought on production costs.
  - Typically represents a “snapshot” of short-run impacts.

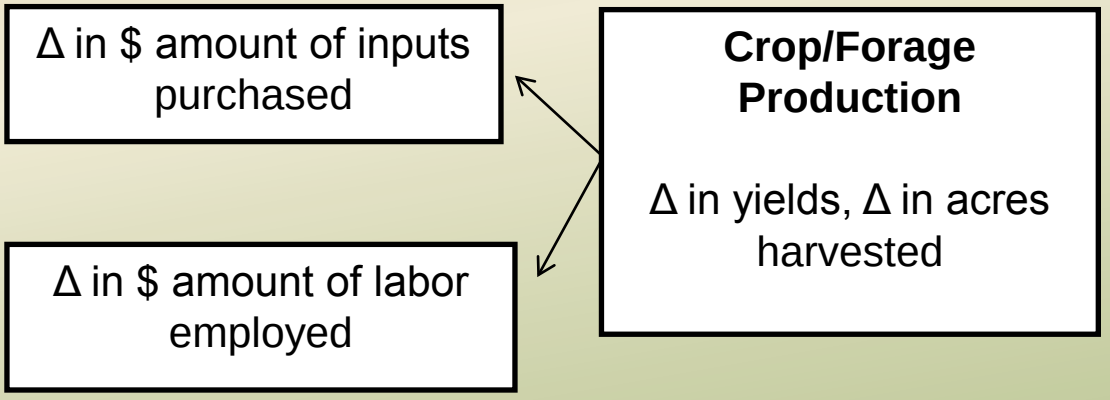
Primary Impact Industries

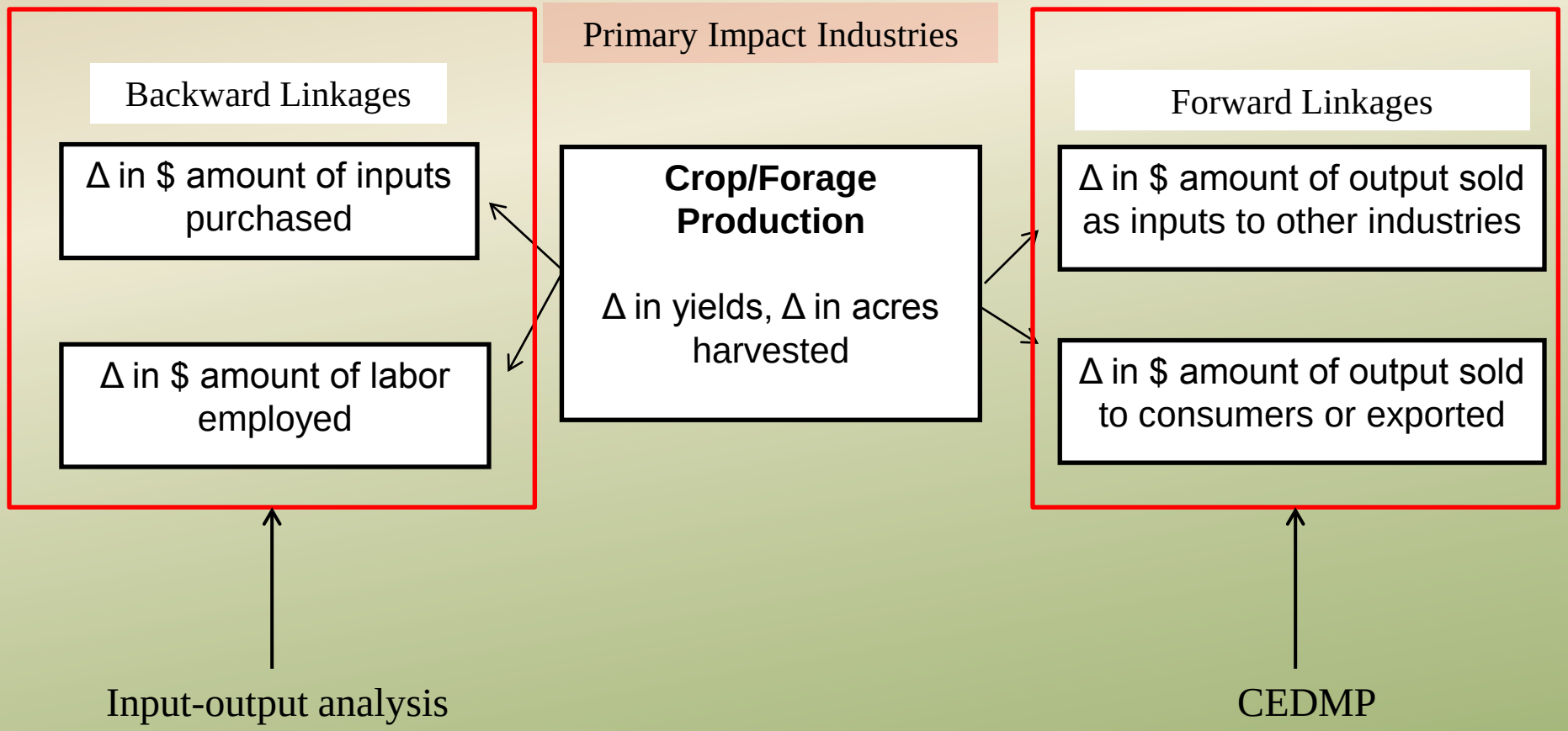
Crop/Forage Production

Δ in yields, Δ in acres harvested

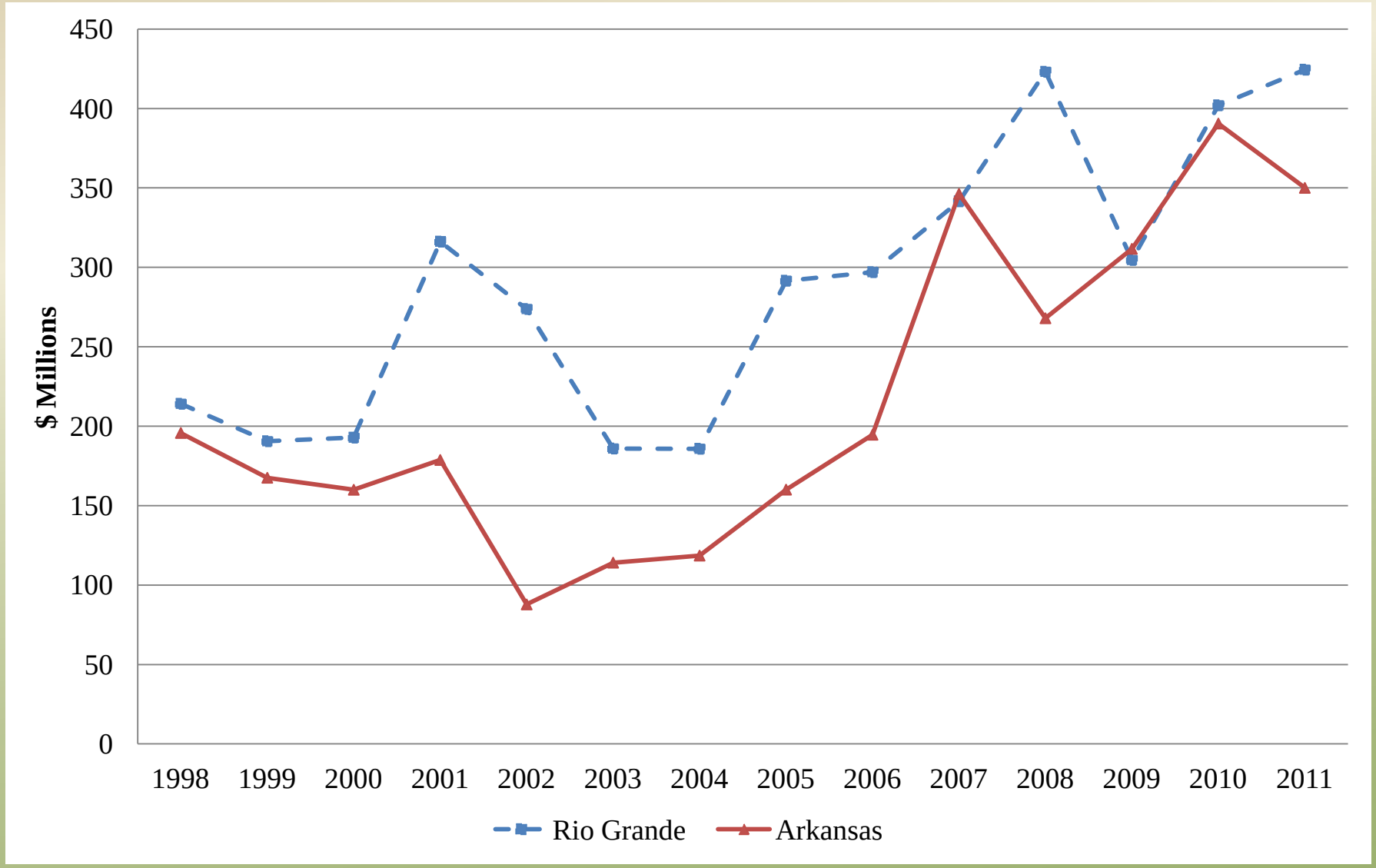
Primary Impact Industries

Backward Linkages

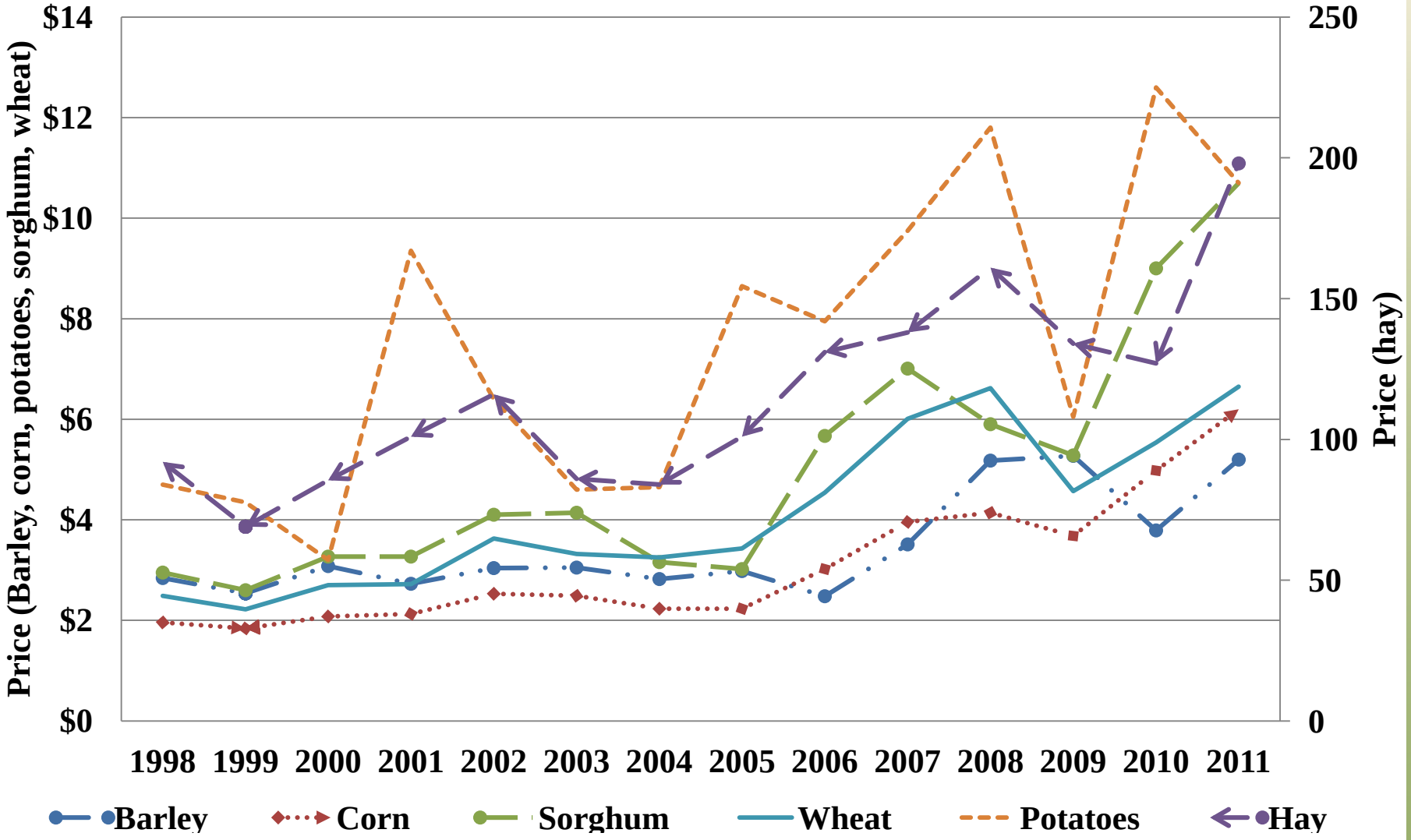



Primary Impact Industries
Backward Linkages
Δ in $ amount of inputs purchased
Δ in $ amount of labor employed
Crop/Forage Production
Δ in yields, Δ in acres harvested
Forward Linkages
Δ in $ amount of output sold as inputs to other industries
Δ in $ amount of output sold to consumers or exported
Input-output analysis
CEDMP

Economic Activity by Basin, 1998-2011



Commodity Prices, 1998-2011



Changes in Economic Activity: Potential vs. Actual Revenue

- Lost Potential Revenue = Actual - Potential Revenue

$$Potential\ Revenue = Planted\ Acres_{2011} * Adj\ Ave\ \%\ Harvested_{1998-2010} * Adj\ Ave\ Yield_{1998-2010} * Price_{2011}$$

- Potential Revenue represents what producers would have earned if they experienced typical growing conditions.
- Lost Potential Revenue represents the direct, indirect, and induced economic impacts to PII.

Actual versus Adjusted Average Harvest Rates

	Rio Grande			Arkansas		
	Actual	Adjusted Average	% Diff	Actual	Adjusted Average	% Diff
Barley	95.49%	97.38%	-1.94%	-	-	-
Corn (grain)	-	-	-	67.93%	89.36%	-23.98%
Hay	-	-	-	-	-	-
Potatoes	99.81%	99.48%	0.33%	-	-	-
Sorghum	-	-	-	48.73%	69.38%	-29.77%
Sunflowers	-	-	-	85.31%	93.55%	-8.81%
Wheat	95.48%	93.98%	1.59%	82.02%	85.07%	-3.59%

Actual versus Adjusted Average Yield Rates

	Rio Grande			Arkansas		
Crop	Actual	Adjusted Average	% Diff	Actual	Adjusted Average	% Diff
Barley	135.10	133.86	0.93%	-	-	-
Corn (grain)	-	-	-	136.00	147.00	-7.48%
Hay	2.72	2.90	-6.21%	2.70	2.97	-9.09%
Potatoes	393.00	372.10	5.62%	-	-	-
Sorghum	-	-	-	28.00	34.70	-19.31%
Sunflowers	-	-	-	945.00	1242.69	-23.96%
Wheat	102.00	100.00	2.00%	27.00	30.19	-10.57%

Total Change in Economic Activity across all Sectors in the Rio Grande

	Total Impact		Employment Loss
Barley	(755,819)		(20)
Corn (grain)	-		-
Hay	(11,690,515)		(50)
Potatoes	16,541,204		94
Sorghum	-		-
Sunflowers	-		-
Wheat	661,957		18
Total	4,756,827		42

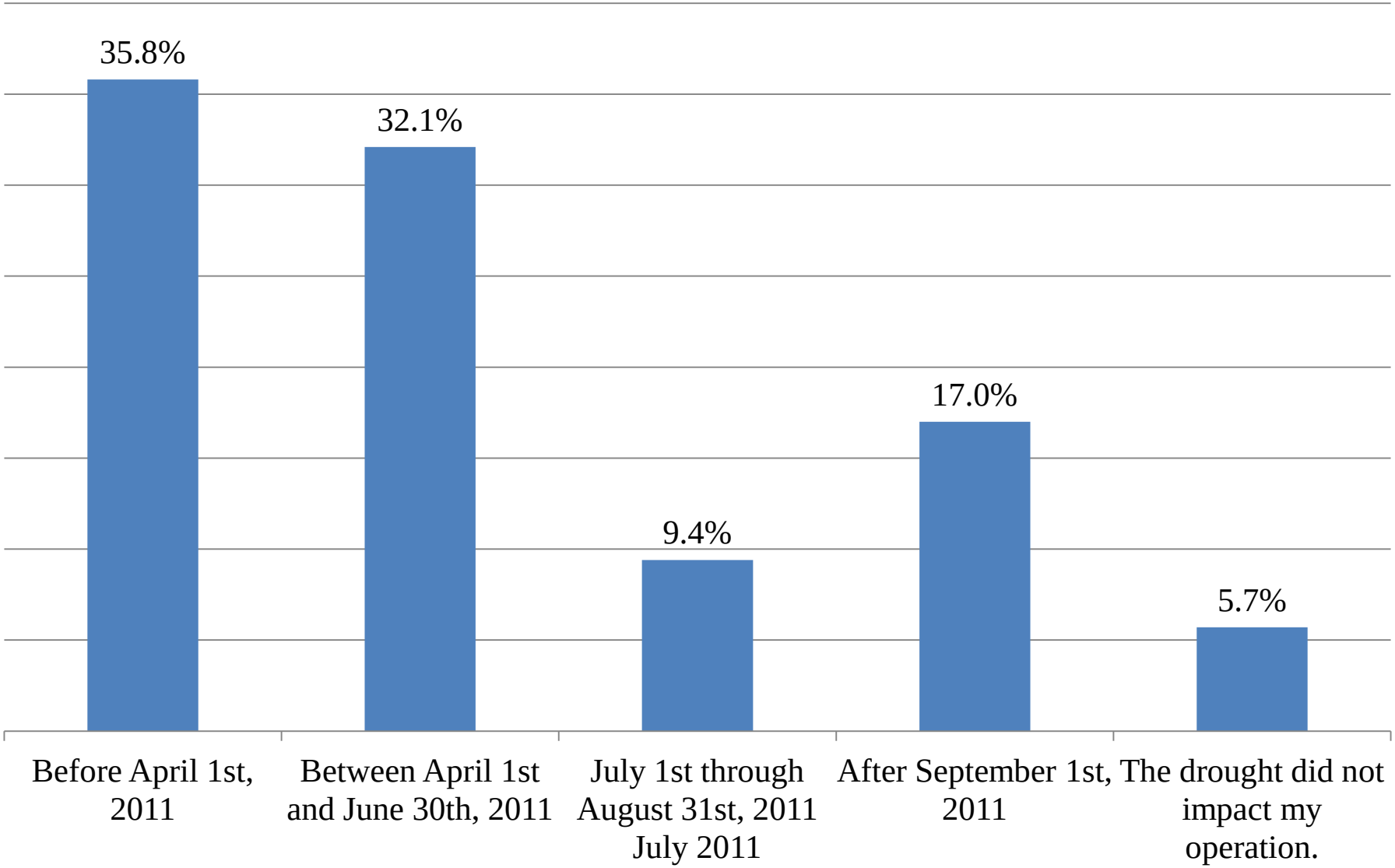
Total Change in Economic Activity across all Sectors in the Arkansas

	Total Impact		Employment Loss
Barley	-		-
Corn (grain)	(48,087,345)		(630)
Hay	(21,176,058)		(236)
Potatoes	-		
Sorghum	(14,750,428)		(193)
Sunflowers	(3,178,128)		(21)
Wheat	(17,548,434)		(230)
Total	(104,740,393)		(1,309)

Changes in Economic Activity and Production Costs: Accounting for Forward Linkages

- Utilized CEDMP to estimate changes in economic activity and production costs in the Livestock Industry.
  - Pros: capable of distinguishing between internal and external supply/demand shocks.
  - Cons: only models agricultural sectors of the economy.
- Results:
  - *Short-term* statewide impact on total revenues less than 1%.
  - Total feed costs increased by $110 million statewide.
    - 10-15 percent increase over recent conditions.

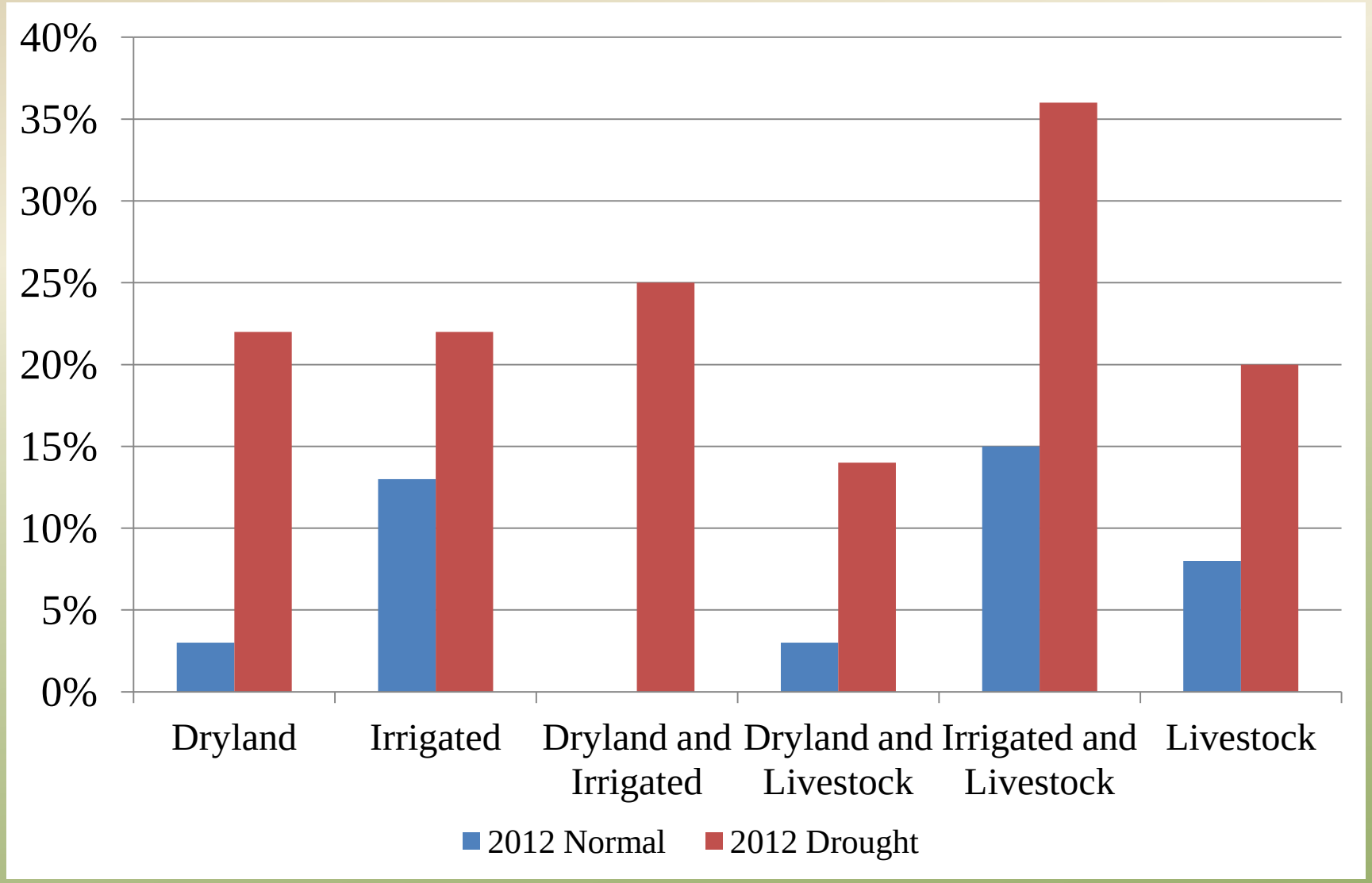
When did you first make changes in your production practices because of the 2011 drought?



Drought Impacts on Harvested Acres and Yields		
Please enter the following information about your 2011…	% Difference in planted and harvested acreage	% Difference in actual and expected yields
dryland wheat crop.	73%	46%
dryland corn crop.	91%	40%
dryland sorghum crop.	84%	24%

How likely are you to leave farming?

(0% certain to stay, 100% certain to leave)



Questions? Comments?

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