

# The Economic Impact of Drought and Mitigation in Agriculture

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**Texas Drought and Beyond**

**CIESS**

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# The 2011 Texas Drought

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- In Agriculture, it Began in 2010
  - Wheat and other winter grazing crops are planted in the Fall
  - Lost value of grazing and wheat crop
- Fires in Spring 2011
  - Fuel buildup in 2010
  - Livestock, grazing lost
  - Infrastructure losses

# Agricultural Costs of Drought

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- Estimated \$7.62 Billion
  - Corn, cotton, wheat, hay \$4.4 billion
  - Livestock \$3.2 billion
  - Another \$669 million in timber
- Increased Costs
- Reduced Yields
  - Increased abandonment

# Agricultural Costs of Drought

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- Conservative Estimate
  - Includes major crops, does not include fruits, vegetables, peanuts, and others
  - Comparability of estimates vs. more completeness
- Horticultural Crops
  - Urban agriculture
- Direct Impacts
  - Indirect impacts

# Multi-Year Effects

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- 2011 Drought Actually Began in 2010
- Livestock
  - Reduced conception rates
  - Fewer calves the next year
- Range and Pasture
  - Years to recover
  - Delays rebuilding herds
- Surface Water Irrigation Systems
  - Texas rice

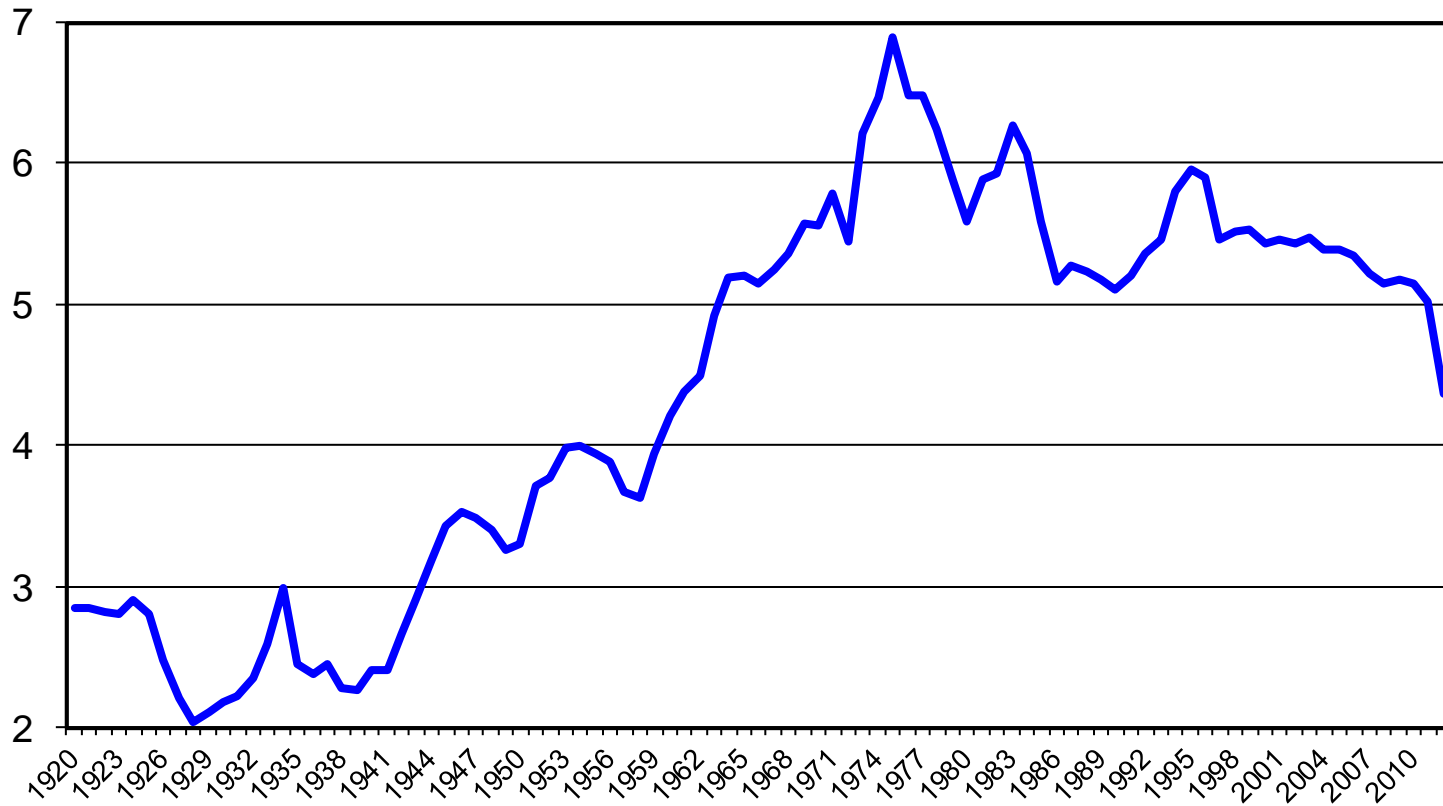
# Adjustment to Drought

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- Fewer Livestock
  - Largest beef cow herd reduction in history
  - Lower prices short term, higher prices long term
  - A little shift in where cattle are produced in the U.S.
- Adjustment to Recovery Takes Time
  - Pasture and range recovery
  - Financial: debt, higher priced replacements, lure of high heifer prices
- Occurred at Time of High Prices

# Texas Beef Cow Herd, January 1

Mil. Head



# Adjustment to Drought

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- More Irrigation, Where Possible
  - Always has been a strategy for dealing with drought
- Renovate Tanks and Ponds
  - Opportunity to clean out or deepen tanks
- Research on Fertilizer Availability and Uptake



# Adjustment to Drought

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- Long Term Stocking Rates
  - Adjust stocking rates to consider drought
  - Reduce stocking by 25%, for example
  - Drought risk management strategy
- Reducing Feed Lost
  - Feeding strategies to reduce waste
  - Cost risk management
- Different Crops, Varieties
  - More drought tolerant
  - Cotton and grain sorghum more tolerant

# Adjustment to Drought

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- Adjustment is Long Term
  - Historically, just as droughts occur, they also break
- Alternative Adjustments Have Different Costs and Benefits
  - Economic analysis of alternatives and strategies