

Costs and Benefits of Climate Legislation



Agriculture and Clean Energy Summit
Fort Morgan, CO
September 2, 2009



Climate Legislation: Key Categories

- Legislative Intent and Incentives
- Changes in Costs of Production
- Offsets as a Potential Revenue Source



DO YOU RECOGNIZE THIS?



American Clean Energy and Security Act : Agriculture's Role in HR 2454

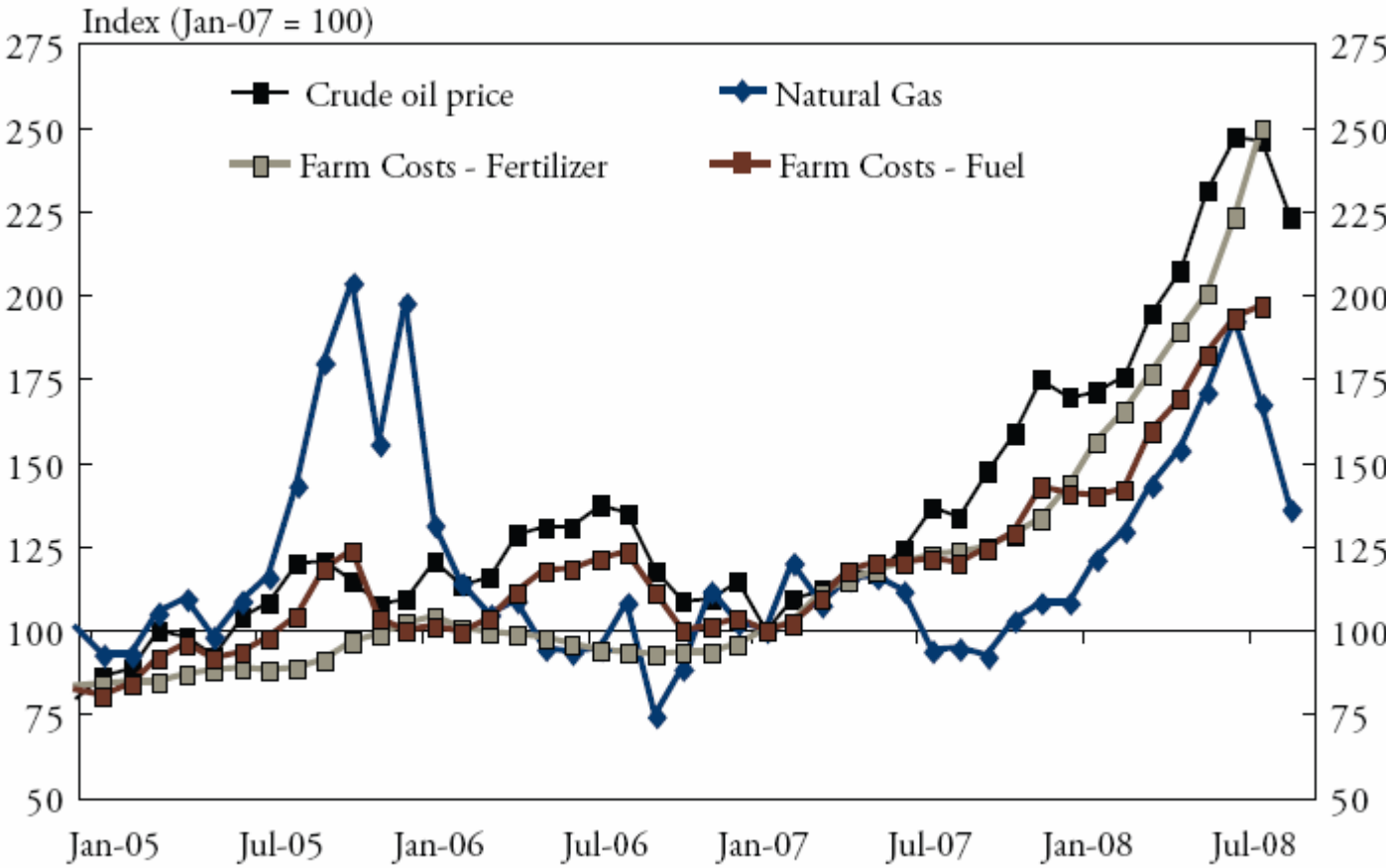
- HR 2454 Legislative Intent:
 - Market Incentives for Common Problem
- What's the Market?
 - Carbon Dioxide Emission Equivalents for GHG's
- Agriculture' Role
 - Uncapped Industry
 - Inputs are subject to the legislation (costs)
 - Agriculture can provide "offsets" (revenues)



HR 2454: Economic Impact to Agriculture

- Economic Analysis
 - US Dept. of Agriculture
 - Missouri Farms – FAPRI
 - Iowa Farms – Bruce Babcock @ CARD
- Limitations
 - 1st order effects (Offsets and Forage Prices)
 - No innovation or adjustment (Overstate)
 - Incomplete (Renewable Fuels)

Fertilizer, Fuel, Natural Gas and Oil



Source: Commodity Research Bureau and USDA

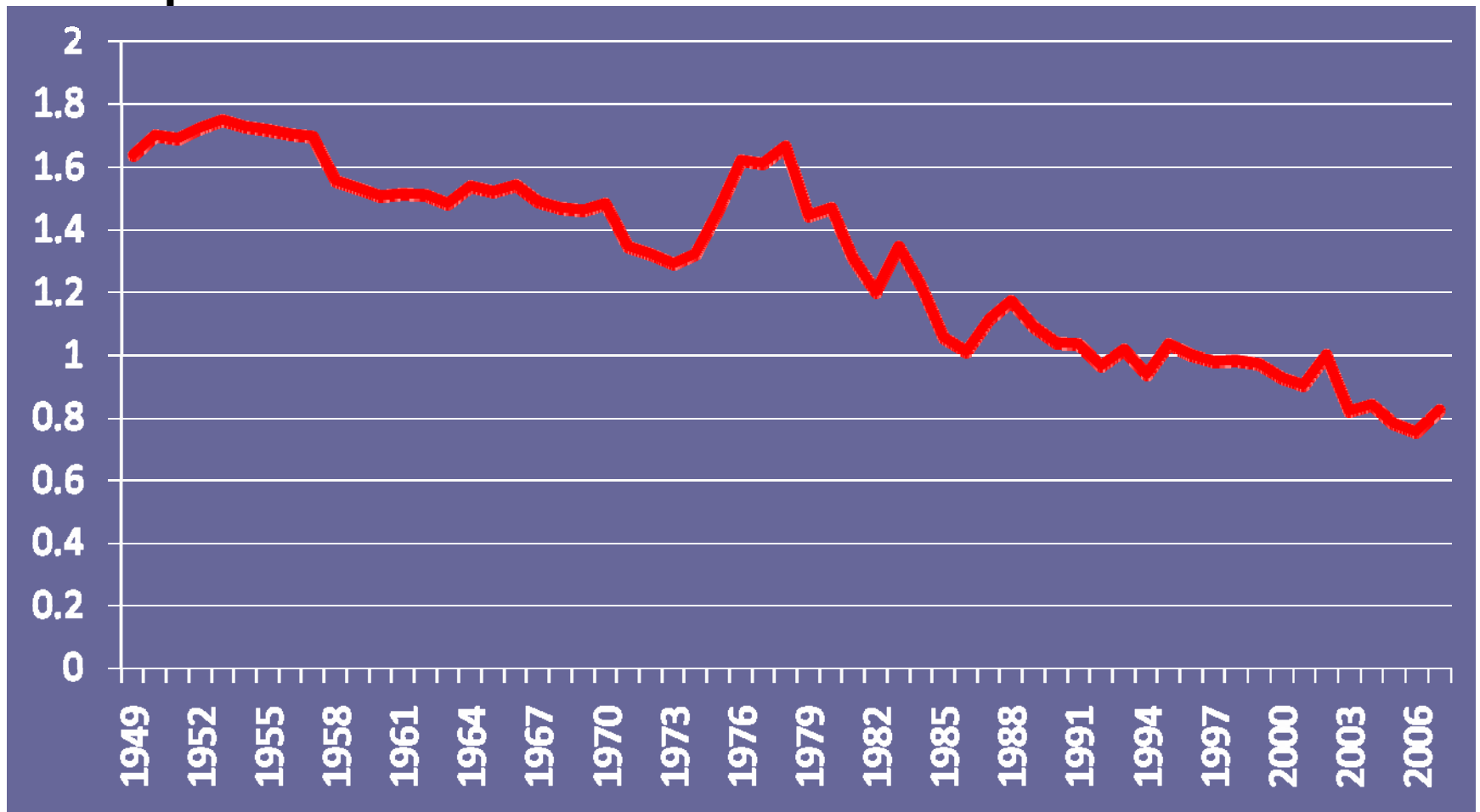
Henderson, J., "Are Energy Prices Threatening the Farm Boon?"
Main Street Economist, Kansas City Federal Reserve Bank, Vol. III, Issue 5.

Cost of Production (over time)

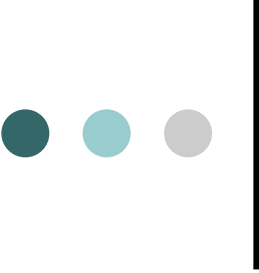
Crop	Near-term	Medium-term	Long-term
	\$/acre, 2005\$ (percent)		
Corn	1.19 (0.4%)	12.02 (4.6%)	25.19 (9.6%)
Sorghum	1.26 (0.9%)	5.45 (3.9%)	11.30 (8.0%)
Barley	0.70 (0.6%)	5.00 (4.1%)	10.44 (8.5%)
Oats	0.57 (0.6%)	4.12 (4.4%)	8.66 (9.2%)
Wheat	0.66 (0.6%)	4.94 (4.5%)	10.34 (9.5%)
Rice	3.09 (0.7%)	13.48 (3.1%)	28.08 (6.5%)
Soybeans	0.45 (0.4%)	2.50 (2.2%)	5.19 (4.6%)
Upland cotton	1.46 (0.3%)	7.90 (1.8%)	16.44 (3.7%)

Source: USDA, Office of Economic Analysis

Energy Use per Unit of Total Farm Output (1996 = 1)



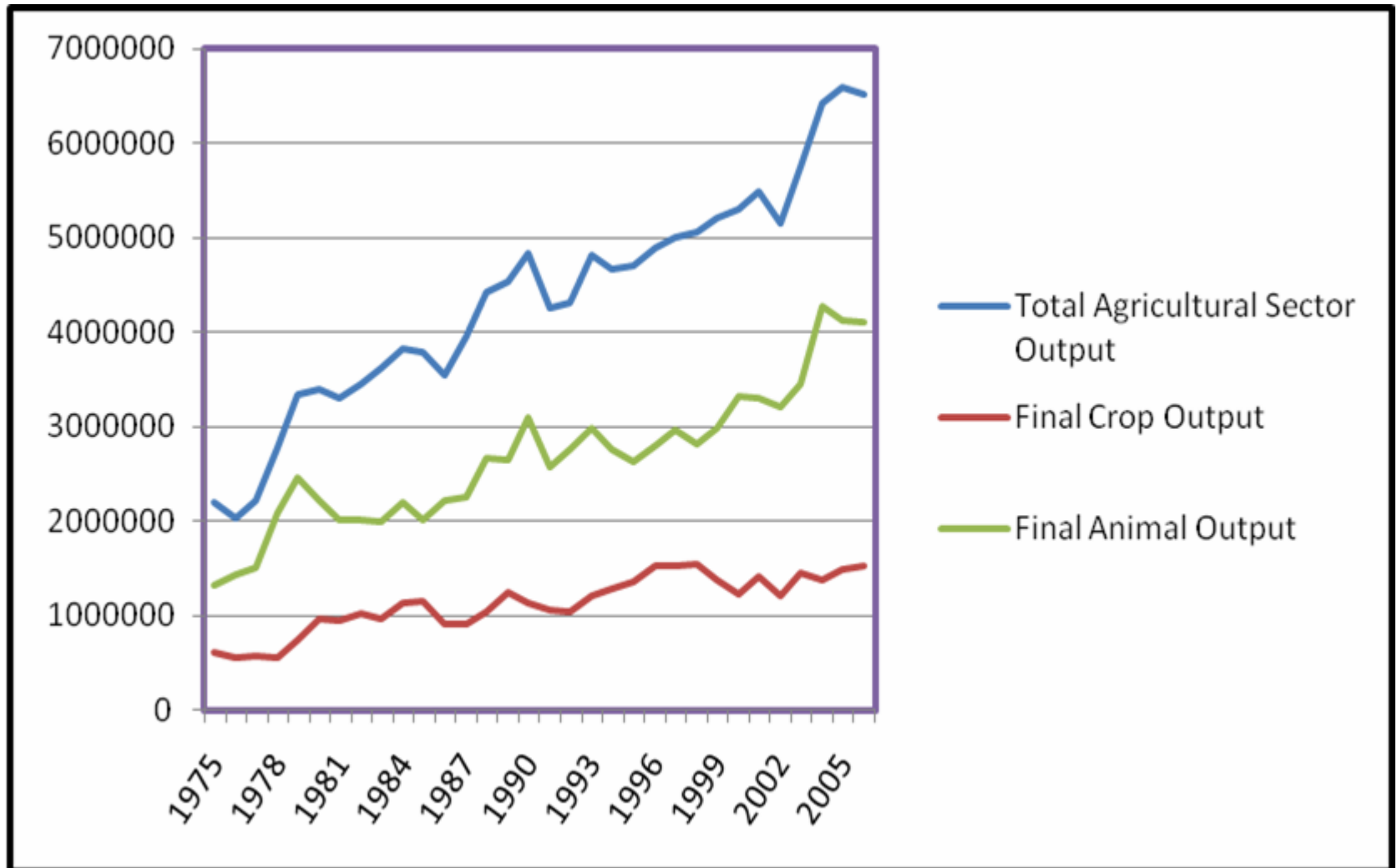
Source: USDA, ERS



Energy Cost Increases Vary by Commodity and Region

- Higher Impacts on Crop Producers
 - High Energy, Intensive Fertilizer
- Lower Impacts on Crop Producers
 - Lower Energy, Less Intensive Fertilizer
- Livestock Production?

Colorado Agricultural Sector Output





Crop Prices (over time)

Crop	Near-term	Medium-term	Long-term
	% change from base		
Corn	0.1	1.2	2.5
Sorghum	0.2	1.2	2.4
Barley	0.1	0.9	1.9
Oats	0.1	1.1	2.4
Wheat	0.1	0.8	1.7
Rice	0.1	0.5	1.0
Soybeans	0.0	-0.1	-0.3
Upland cotton	0.1	0.5	0.9



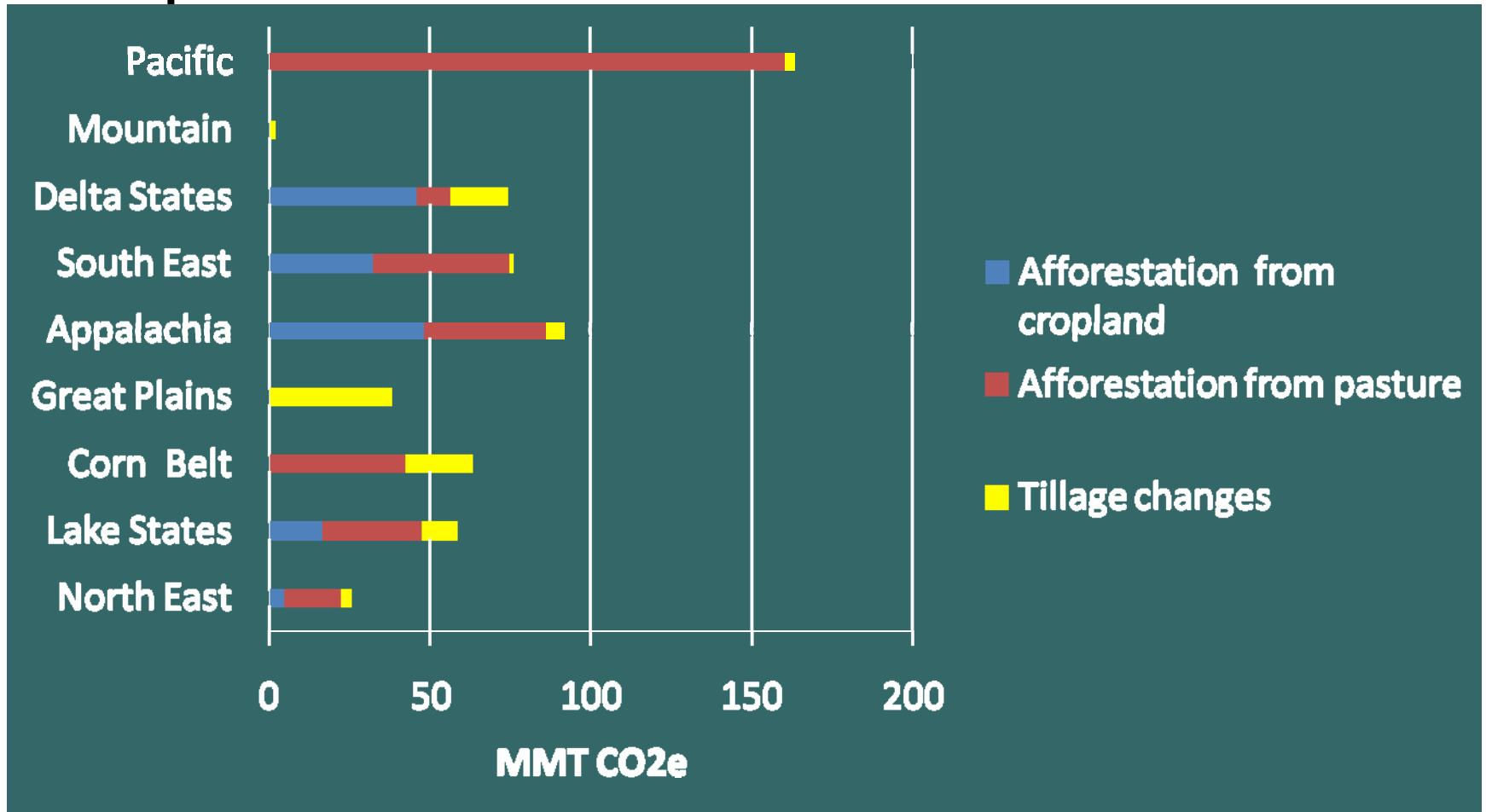
Offsets – Gross Revenues

(excludes costs associated with change)

Item	Near-term	Medium-term	Long-term
	billion 2005\$		
Afforestation and Soil Carbon	0.4	3.6	17.7
Methane and Nitrous Oxide Reductions	0.1	0.5	2.5
Forest Management	1.6	3.4	8.2
Total Offset	2.1	7.6	28.4
Total less Forest Management	0.5	4.2	20.2

Regional Potential

(carbon price of \$34/MT CO₂e)



Source: USDA, ERS. 2004



Work to Be Done

- Impact of Offsets on Productions Costs and Local Feedstuffs
- Renewable Fuels Emphasis.
- Machinery, equipment and capital investment.
- Market Channel Evolution.
- Risk Analysis



Comments

- Legislative intent to provide market incentives for a common problem.
- Analysis is in its initial stages, but appears that revenue growth will match or outpace growth in expenses.
- Important to consider secondary impacts.
- Gains are not distributed uniformly – benefits to more intensive, lower cost enterprises.