



# Forestry, Agriculture & Climate Change Modeling to Support Policy Analyses

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September 27, 2011



# Impacts and Adaptation Priorities

- Integrating climate change into decision-making
- Contributions to the 2013 National Climate Change Assessment
- Reduce uncertainties
  - Climate models
  - Regional and local projections
  - Accounting for adaptation in impacts assessments
- Extreme events
- Food Security

## June 3, 2011: USDA Issues Departmental Regulation For Climate Change Adaptation

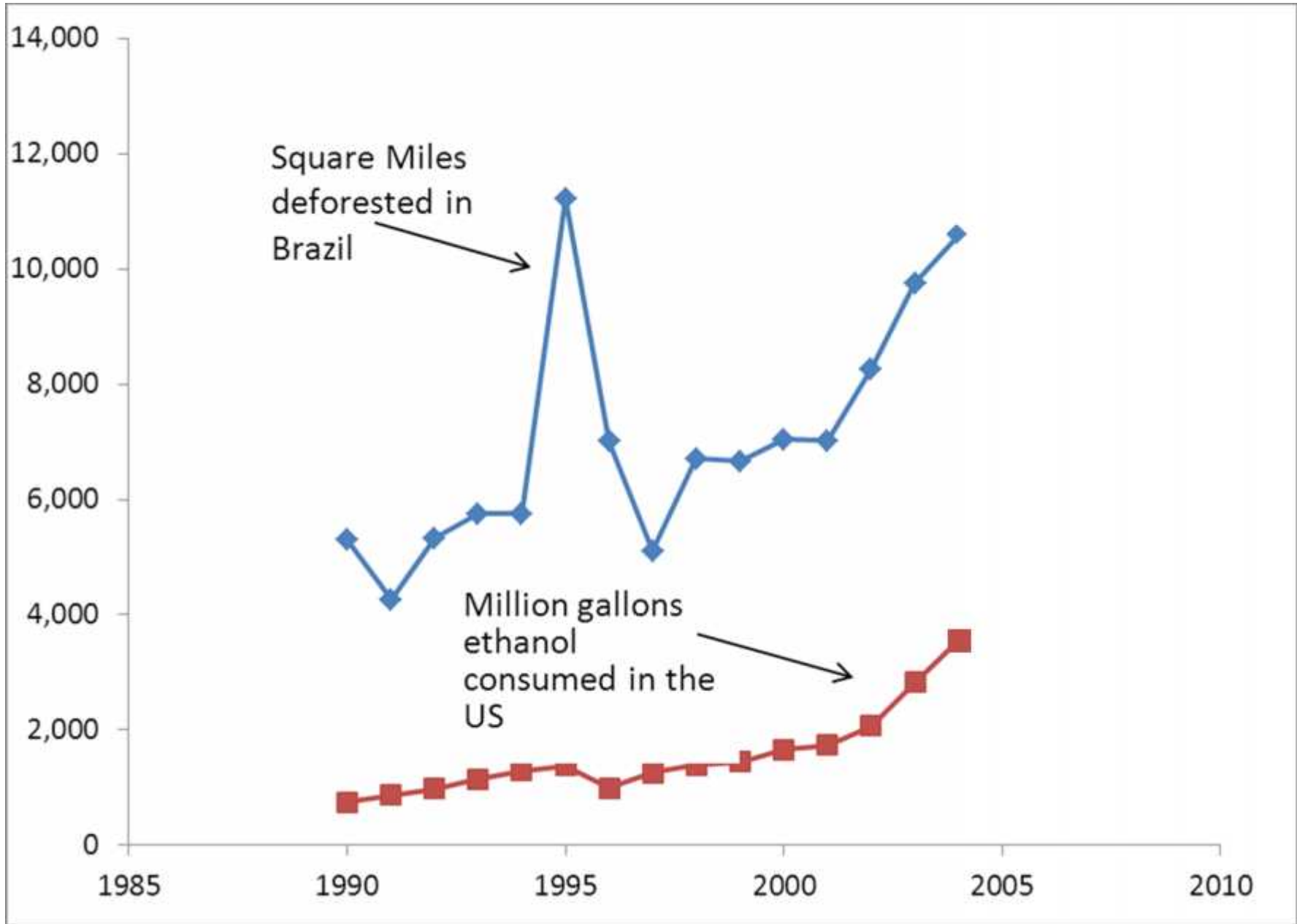
- Identify how climate change is likely to affect its ability to achieve USDA mission, operations, and policy and program objectives;
- Analyze Departmental vulnerabilities to climate change;
- Consider potential climate change impacts when undertaking long-term planning exercises, setting priorities for research, and making decisions;
- Prioritize actions; and
- Develop and maintain an adaptation plan for managing the challenges and taking advantage of any opportunities afforded by climate change.

The Final USDA Climate Change Adaptation Strategic Plan  
is Due June 2012

# Mitigation priorities

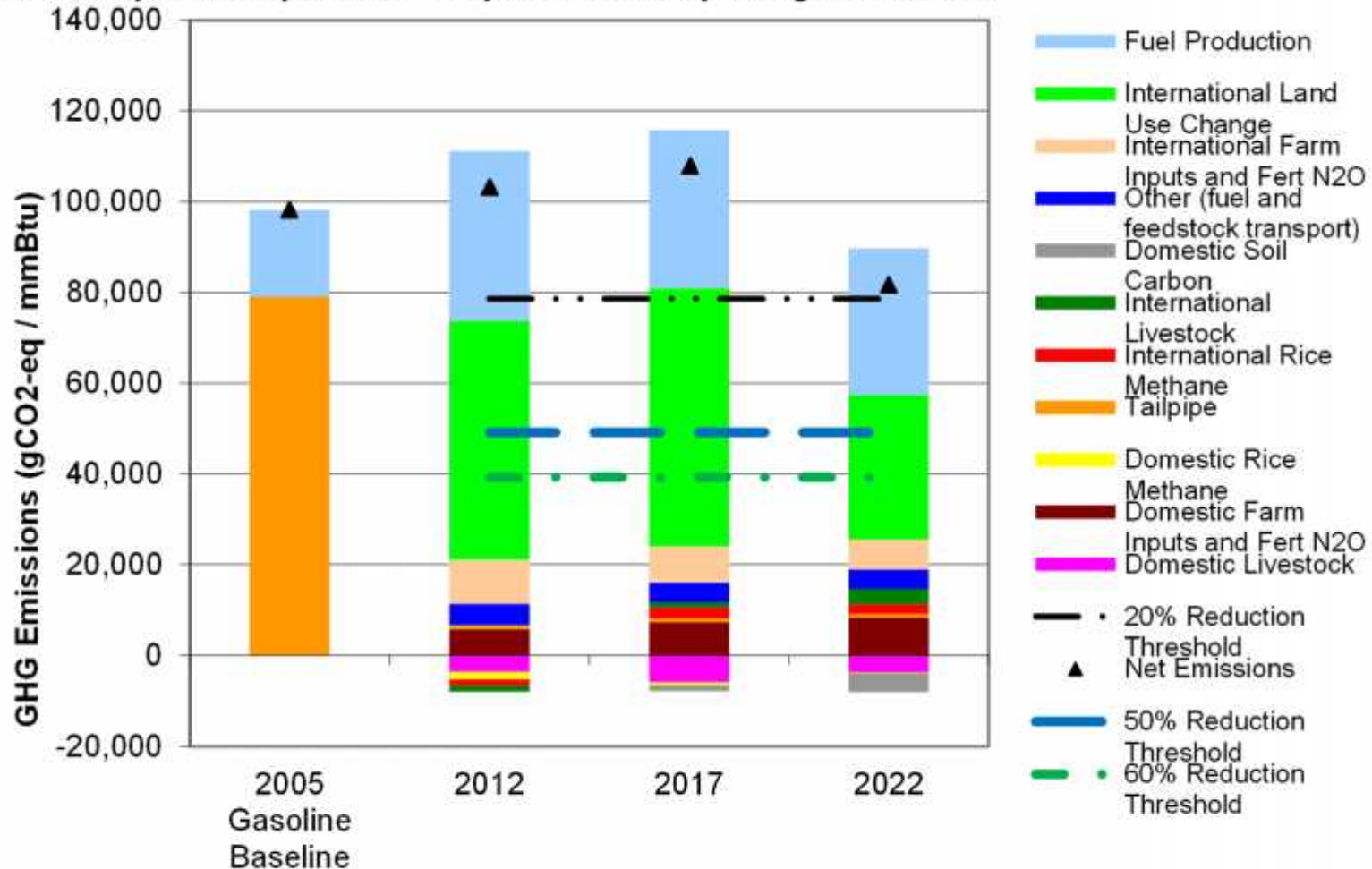
- Role for US conservation programs
- Links with other emerging environmental markets
- Biomass energy (liquid and solid fuels)
  - Treatment of biogenic sources (CAAA)
  - Incentives for renewable fuels

A number of studies showed a link between increases in US ethanol production and deforestation



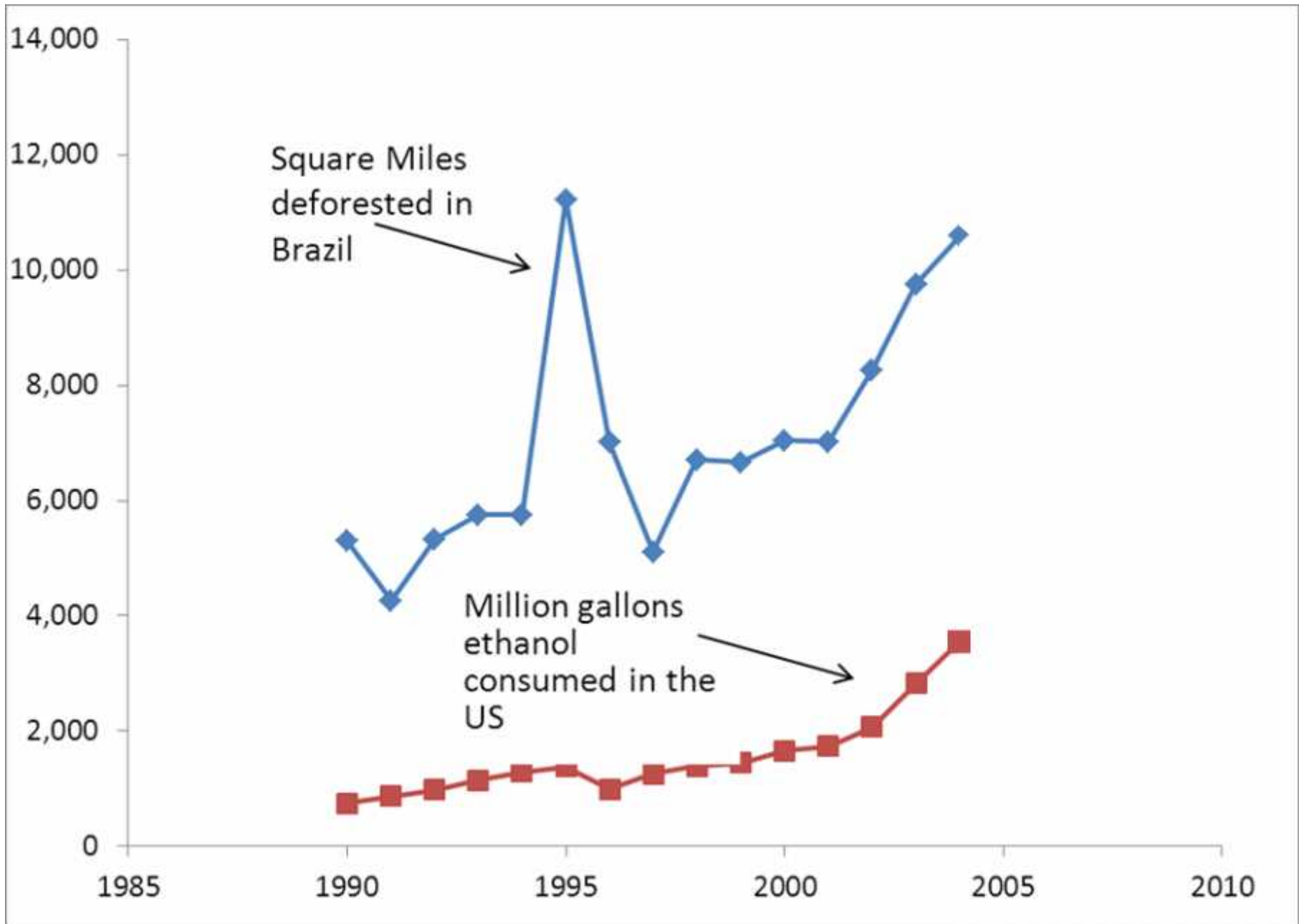
In 2005, EPA issued estimates of the GHG benefits of biofuels for the RFS II, including estimates of indirect land use change

EPA Lifecycle Analysis: Base Dry Mill Refinery using Natural Gas

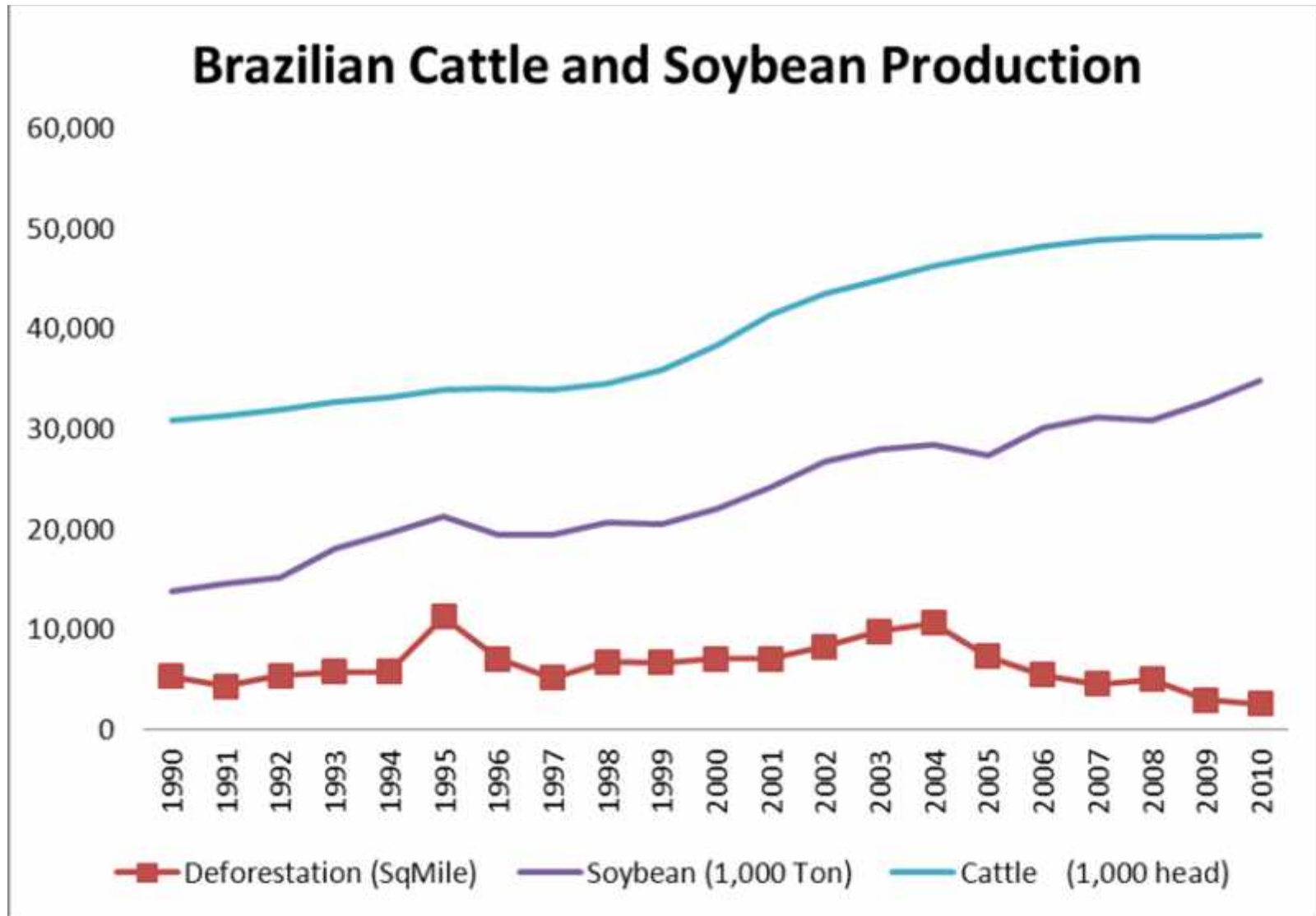


Source: EPA Technical Support Documents from Docket No. EPA-HQ-OAR-2005-0161 (available at [www.regulations.gov](http://www.regulations.gov)).

Including recent data...



Brazilian agricultural output has continued to expand...





# What is going on in Brazil and what are the implications?

## According to a recent report from the Union of Concerned Scientists:

- Brazil invested in enforcement and monitoring;
  - Increased protected lands;
  - Established land titles for small and medium-sized landowners;
  - Established a National Climate Fund;
  - Increased level of citizen interest;
  - Agreements with industry – soy and cattle.
- 
- Lessons for other countries?
  - Implications for US ethanol?