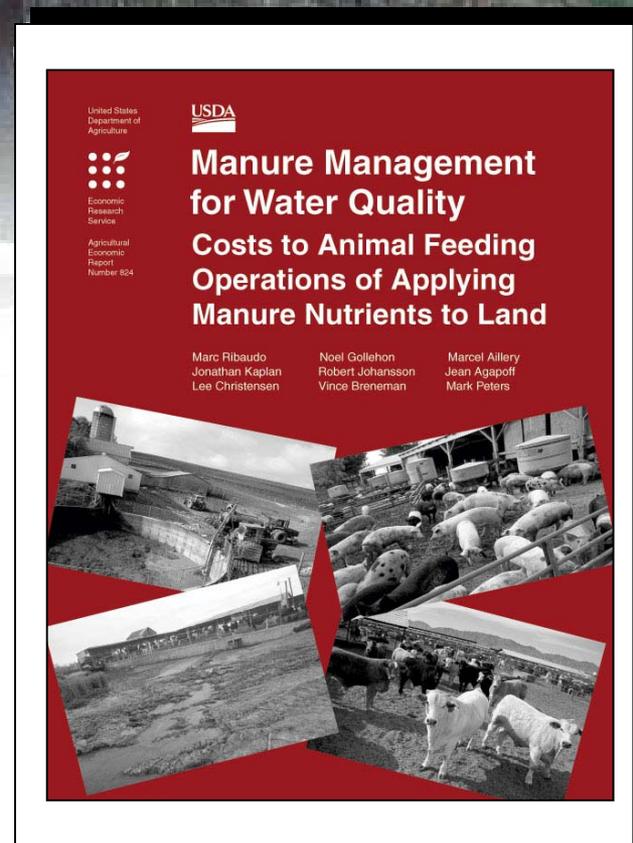


# Manure Management for Water Quality Improvement

## Costs to Animal Feeding Operations of Applying Manure Nutrients To Land

Presentation by Noel Gollehon  
Agricultural Outlook Forum  
February 19, 2004  
Arlington Virginia



# Background

- **USDA's National Performance Expectation for AFOs**
  - USDA Nutrient Management Policy
  - Comprehensive Nutrient Management Planning Technical Guidance
- **U.S. EPA revised CAFO Regulations**

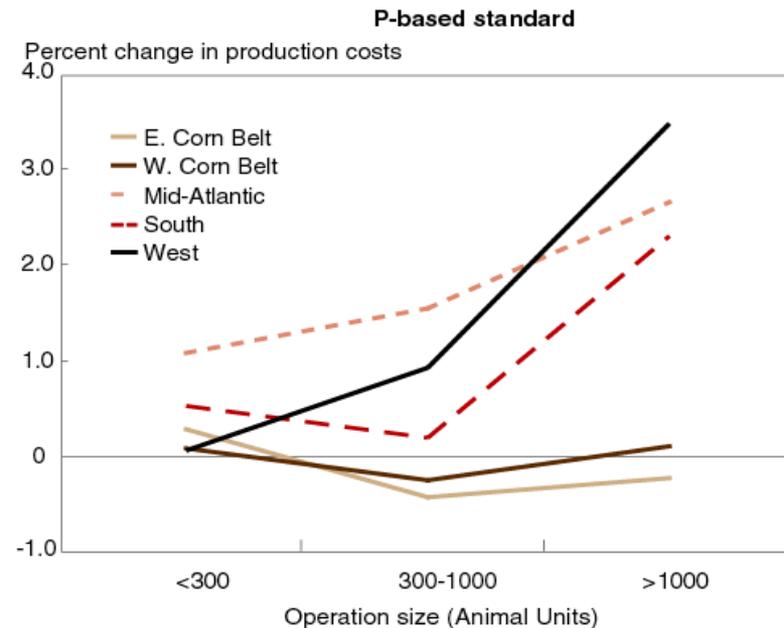
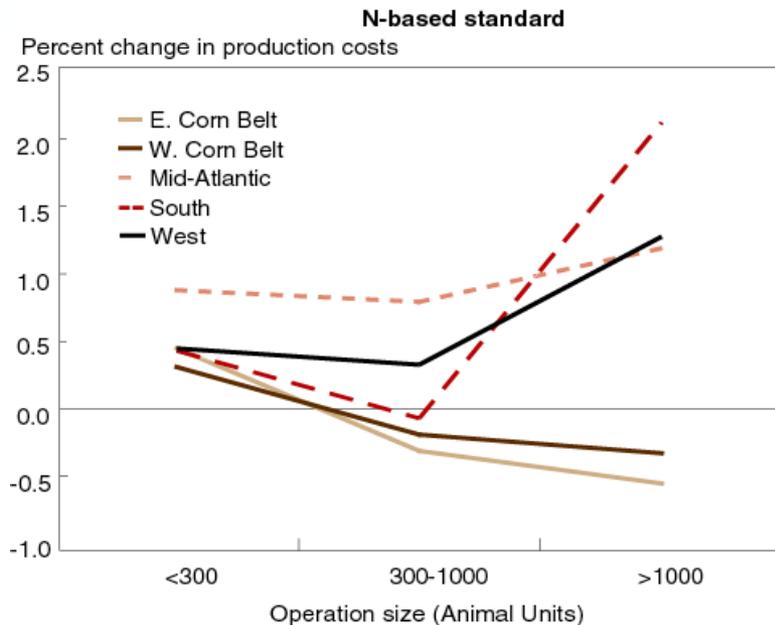
# Focus of the ERS Report

- Analyzes factors that influence the cost of applying manure to land
- Analyzes aggregate supply and price effects of regulations and guidelines
- Includes a range of scopes
  - Farm-level analysis
  - Regional-level analysis
  - Sector-level analysis

# Farm Level Analysis: Focus on Hogs and Dairy

## Increase in Production Costs to Meet Nutrient Standards Varies by Farm Size

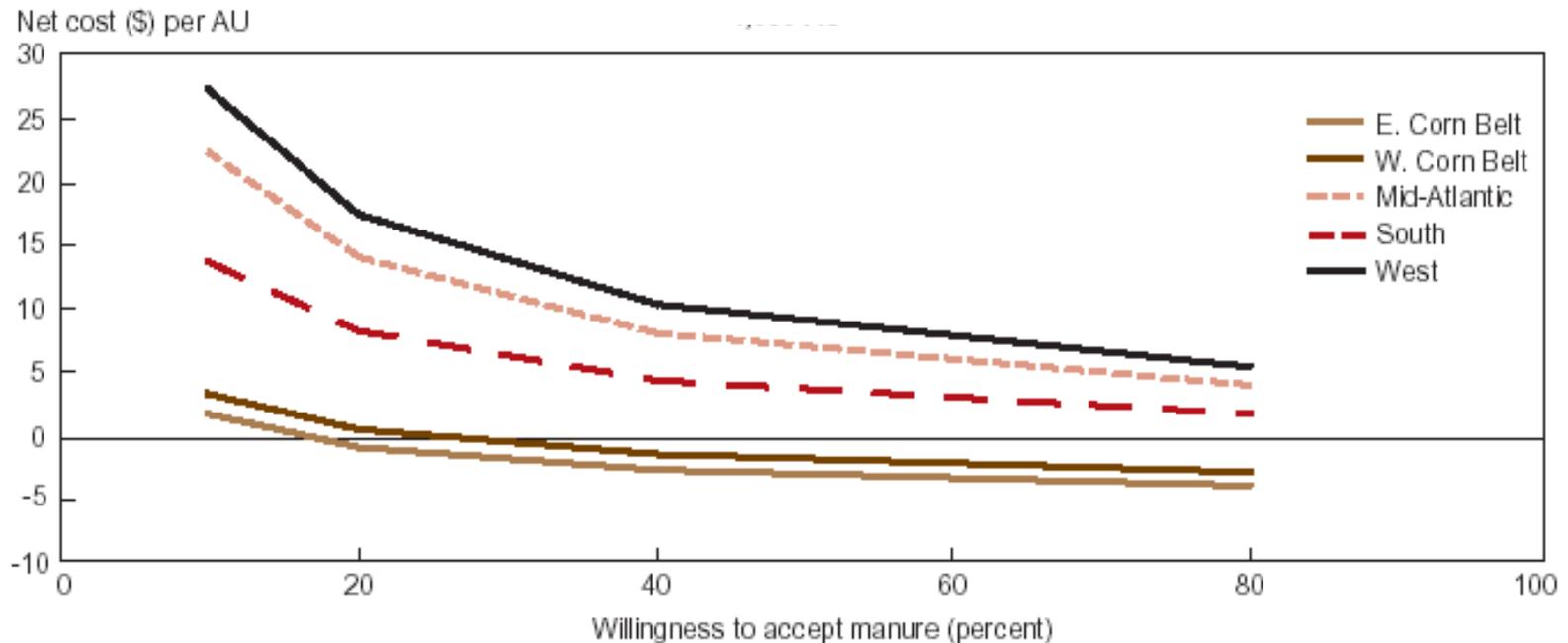
Hog farms with a Willingness to Accept Manure (WTAM) of 20 Percent



# Farm Level Analysis: Focus on Hogs and Dairy

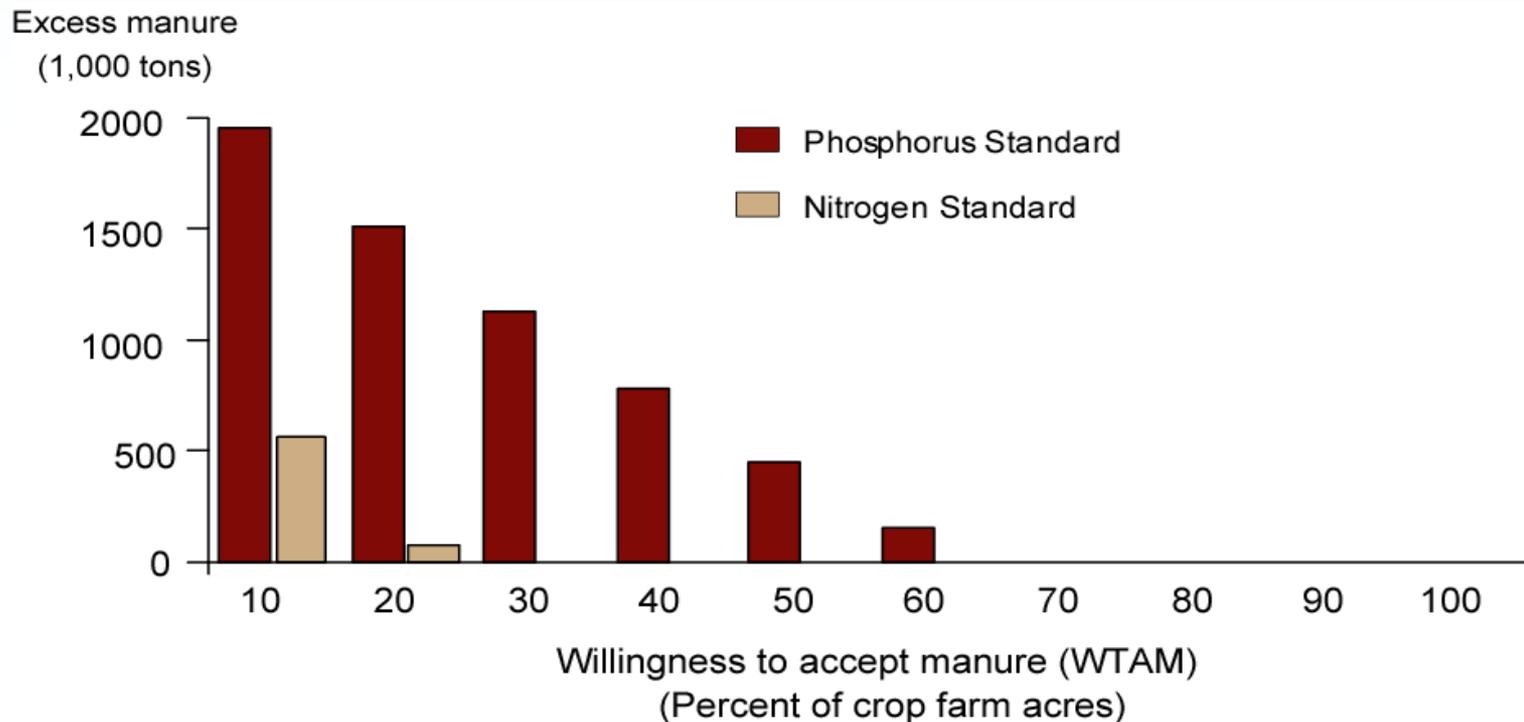
Cost Per Animal Unit (AU) Declines with  
Increased Willingness to Accept Manure

Hog Farms > 1,000 AU meeting a Phosphorus-Based Standard



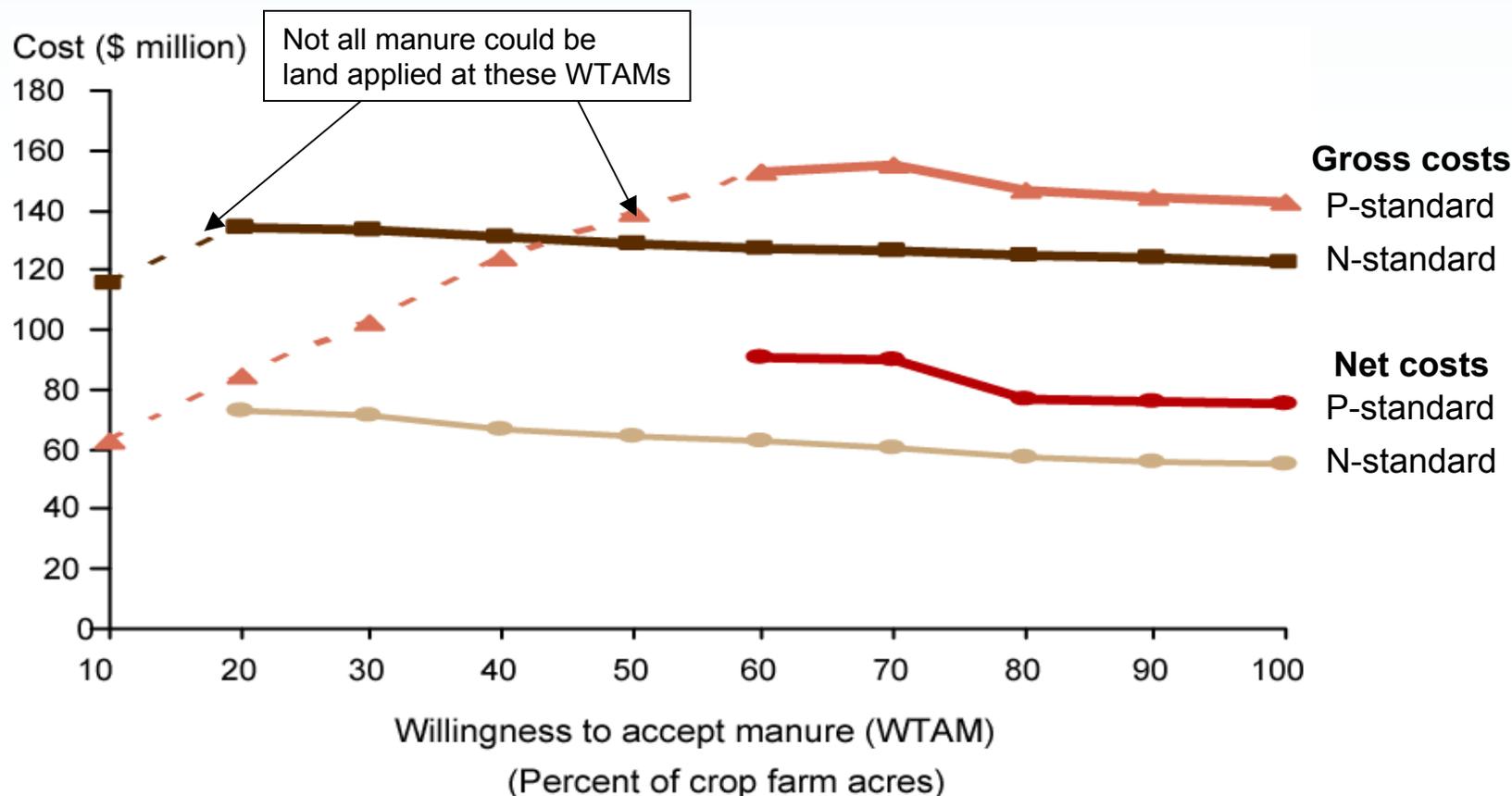
# Regional Analysis: Focus on the Chesapeake Bay Watershed

Depending on crop growers' WTAM, not all manure can be land-applied at agronomic rates



# Regional Analysis: Focus on the Chesapeake Bay Watershed

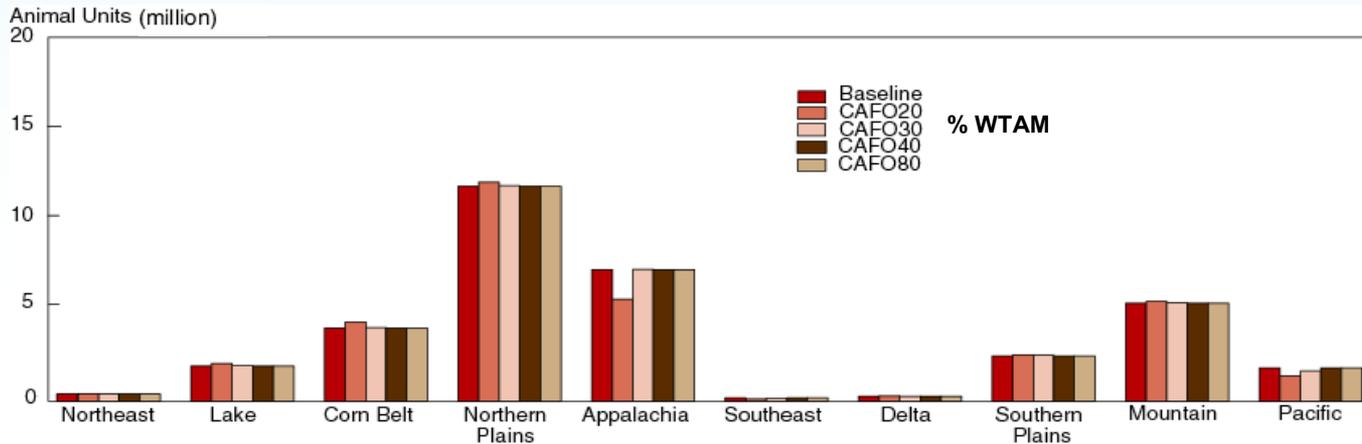
Gross and net costs of manure disposal  
vary by standard and WTAM



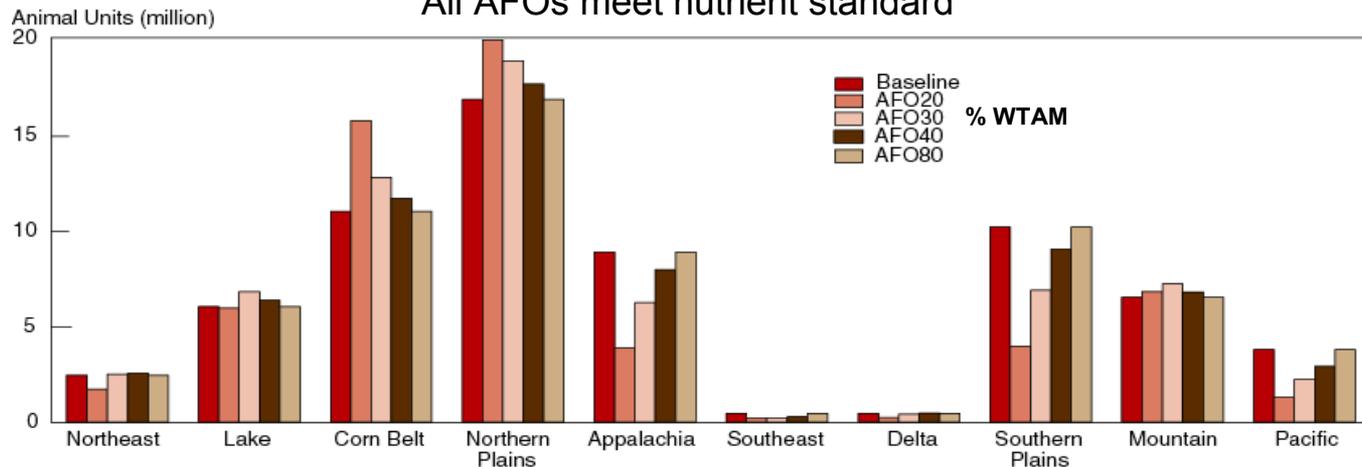
# National Analysis: Focus on Agricultural Markets

## Animal production by WTAM and region

Only CAFOs meet nutrient standard



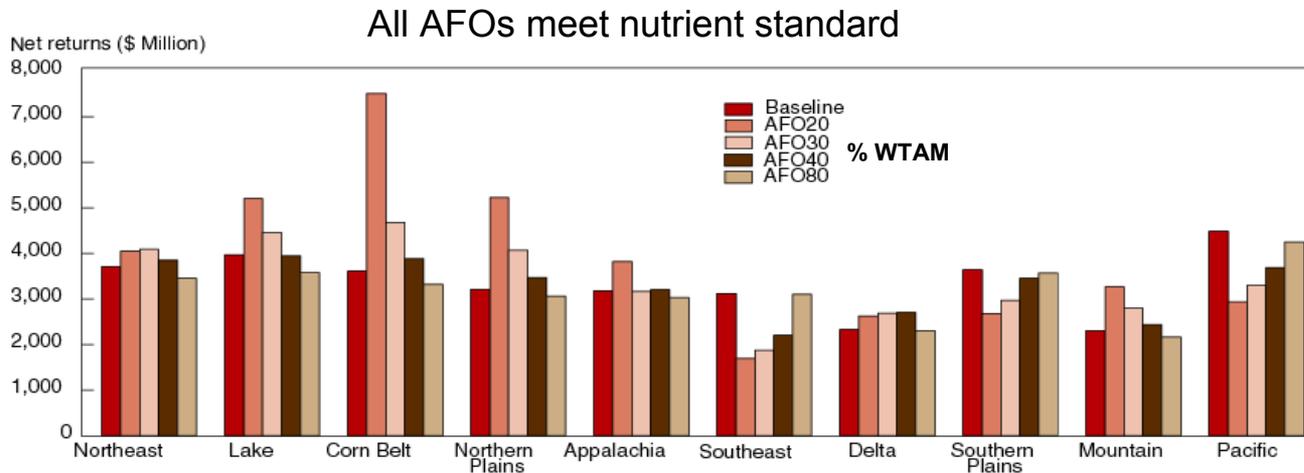
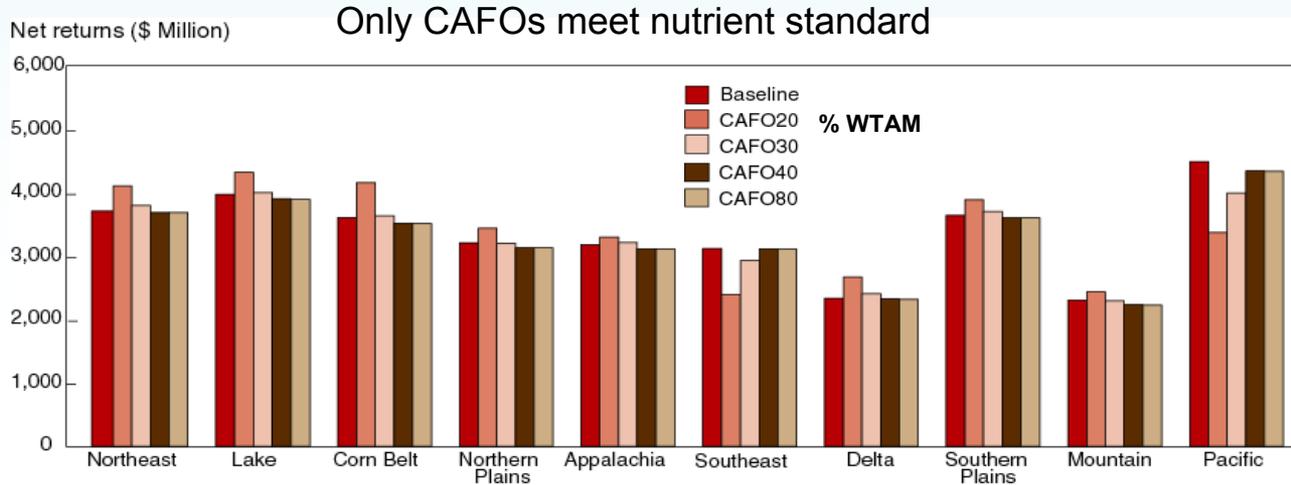
All AFOs meet nutrient standard



# National Analysis:

## Focus on Agricultural Markets

### Animal producer net returns by WTAM and region



# Implications for USDA

Manure management costs can be decreased by increasing crop producer willingness to accept manure, through:

- Research
- Education
- Financial assistance
- Community-based programs to foster cooperation between animal producers and crop producers

# Implications for USDA

- Land disposal costs can be reduced by finding other uses for manure:
  - Fertilizer products
  - Energy
  - Soil amendments
- Feed management research, technical transfer, and other assistance can reduce:
  - The nutrient content of manure
  - The amount of land needed for spreading manure
- Farm and regional characteristics can be considered in conservation program priorities and decisions

# Manure Management for Water Quality Improvement

## Costs to Animal Feeding Operations of Applying Manure Nutrients To Land

