

# Sustainable Agriculture: What's Energy Got to Do With It?

## *Bioenergy at a Crossroad Down on the Farm*



American Council for an Energy Efficient Economy

Des Moines, IA

February 21, 2008



Institute for Agriculture and Trade Policy

*IATP works at the intersection of policy  
and practice to ensure fair and  
sustainable food, farm and trade  
systems for all people*

- **Environment and Agriculture**
- **Food and Health**
- **Rural Communities**
- **Local Food**
- **Trade and Global Governance**
- **Community Forestry Resource Center**



Institute for Agriculture and Trade Policy

# The National Campaign for Sustainable Agriculture

*is a nationwide partnership of diverse individuals and organizations cultivating grass roots efforts to engage in policy development processes that result in food and agricultural systems and rural communities that are healthy, environmentally sound, profitable, humane and just.*



Institute for Agriculture and Trade Policy

# The National Campaign's Renewable Energy Committee's

*primary focus...will be in the area of diversified feedstock for bio-energy. Recognizing that this is a period of great transition in the areas of bioenergy and feedstocks, full consideration of **sustainability principals, decentralization, promoting local ownership**, and the impacts on rural communities will be applied as priorities are assessed and further developed by the committee.*

***-February 2007***



# Promise of a Sustainable Bioeconomy



**Reduced dependence on fossil fuels .**

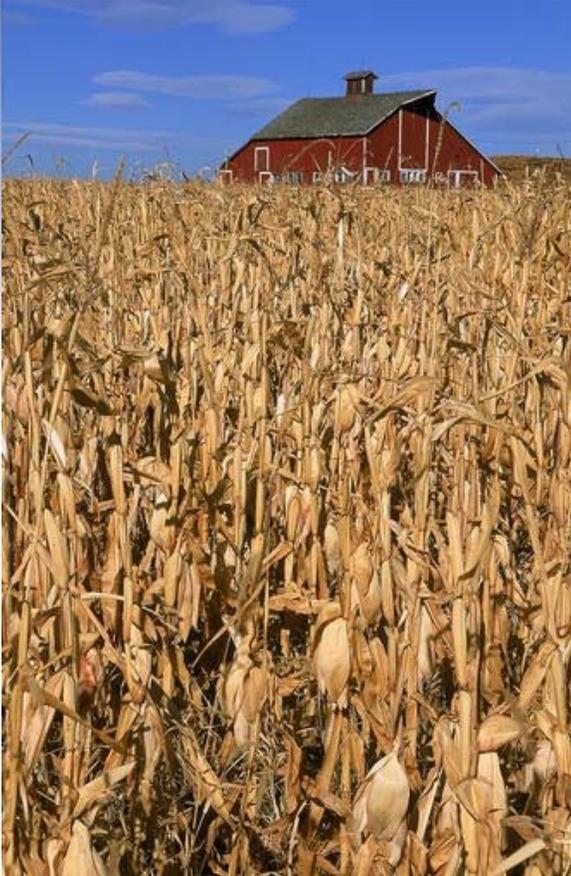
**Improved environmental quality, human health, biodiversity and reduced global warming.**

**New markets for the farm sector and economic development opportunities for rural communities**

**Curtail Dumping on World Markets.**



# Challenges for Rural Communities and the Environment



Limits and impacts of current bioenergy feedstocks & production

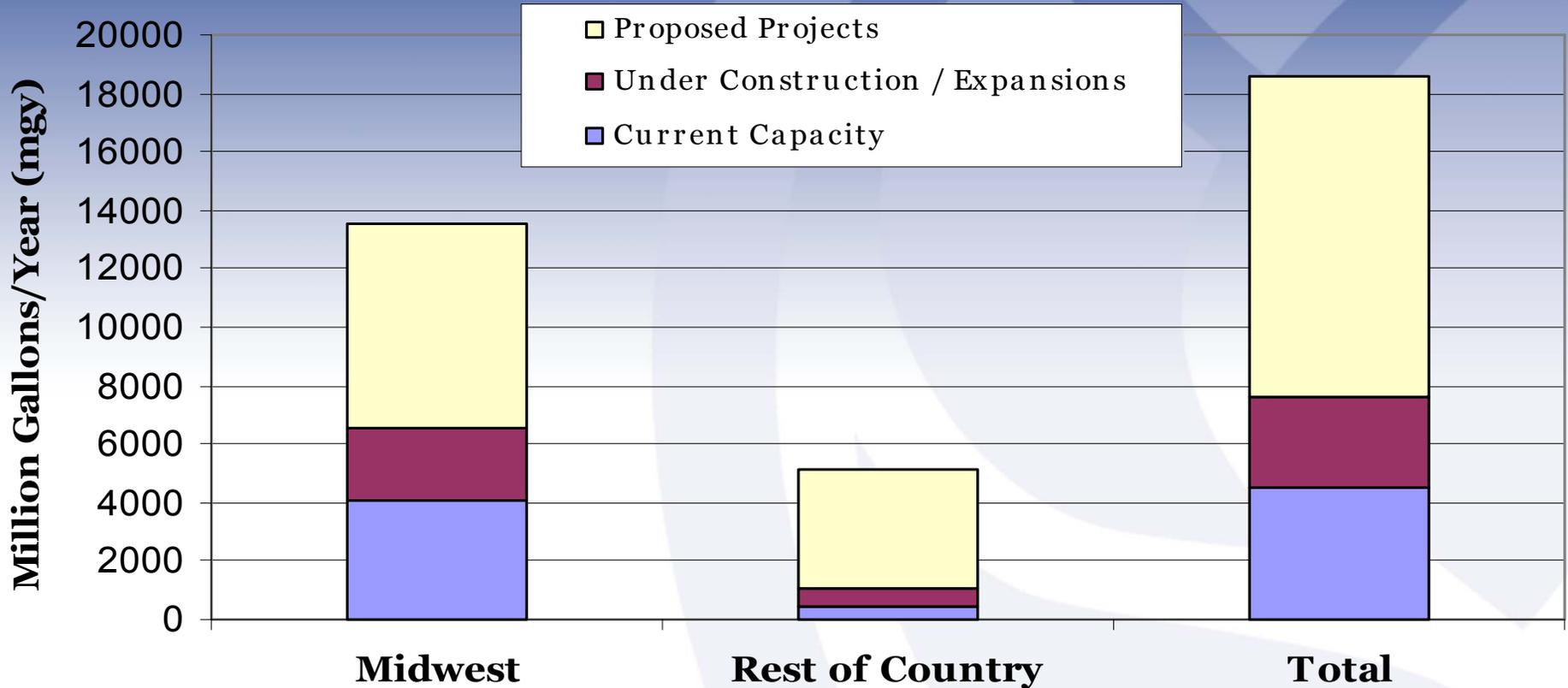
Who benefits: Wall Street or Main Street?

Making the *right* move to biomass

Trade Policy



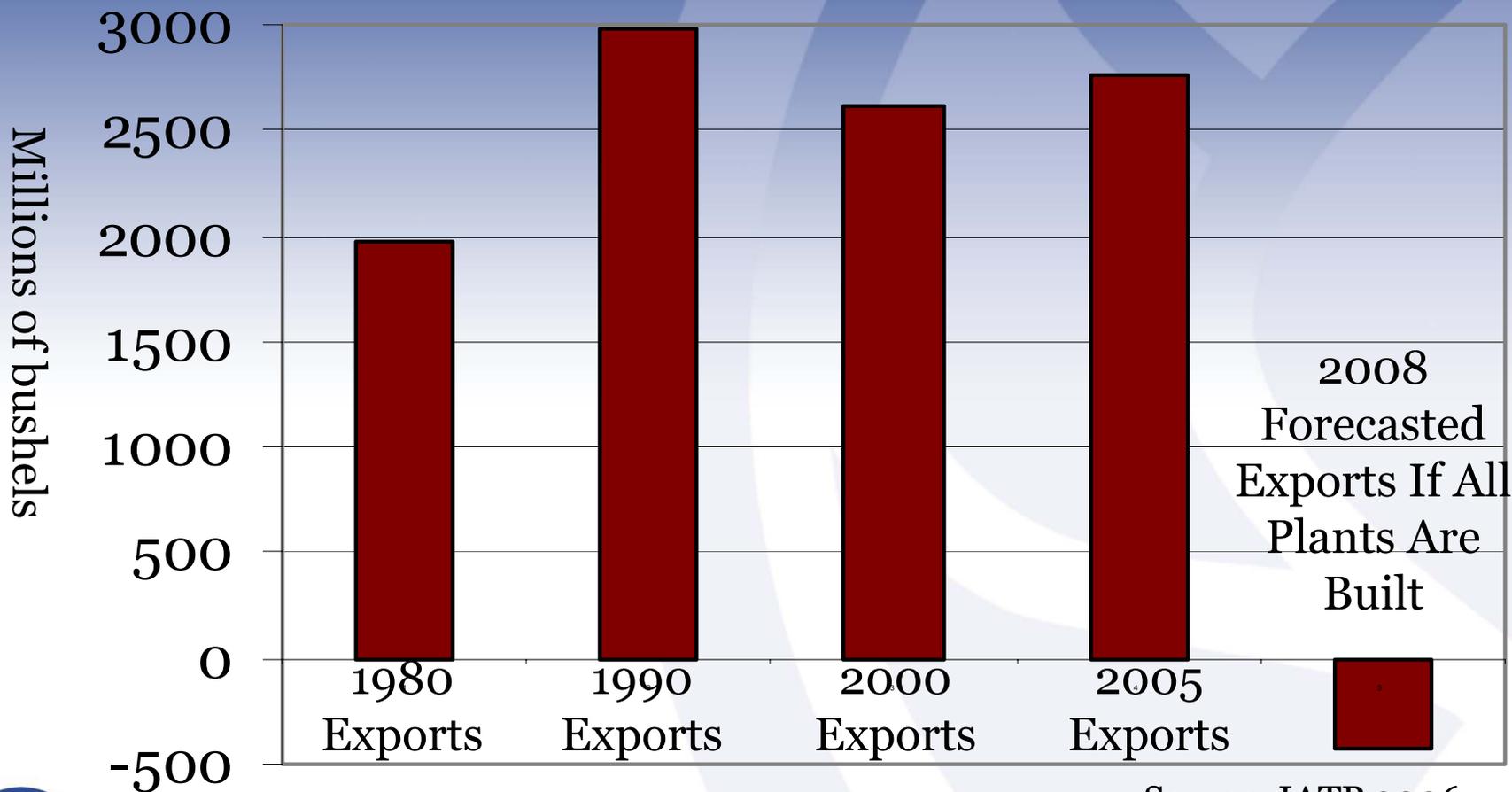
# The Ethanol Boom



Source: IATP 2006



# Corn Exports from Midwest States Headed toward a Corn Deficit?



Source: IATP 2006



# The Biofuel Effect



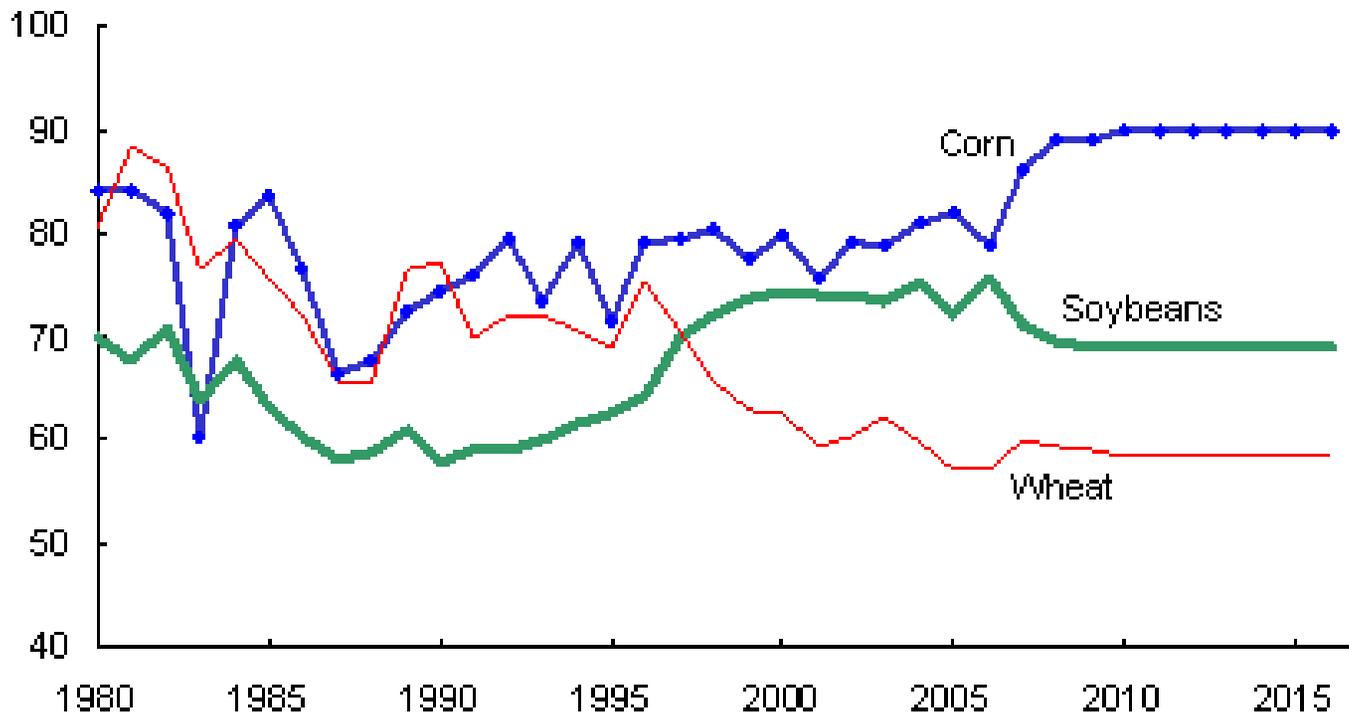
- Ethanol boom has raised commodity prices and fears
- Increased focus on environmental, climate and food concerns



# More production...

## Planted area: Corn, wheat, and soybeans

Million acres



Source: *USDA Agricultural Projections to 2016*, February 2007.  
USDA, Economic Research Service.



Institute for Agriculture and Trade Policy

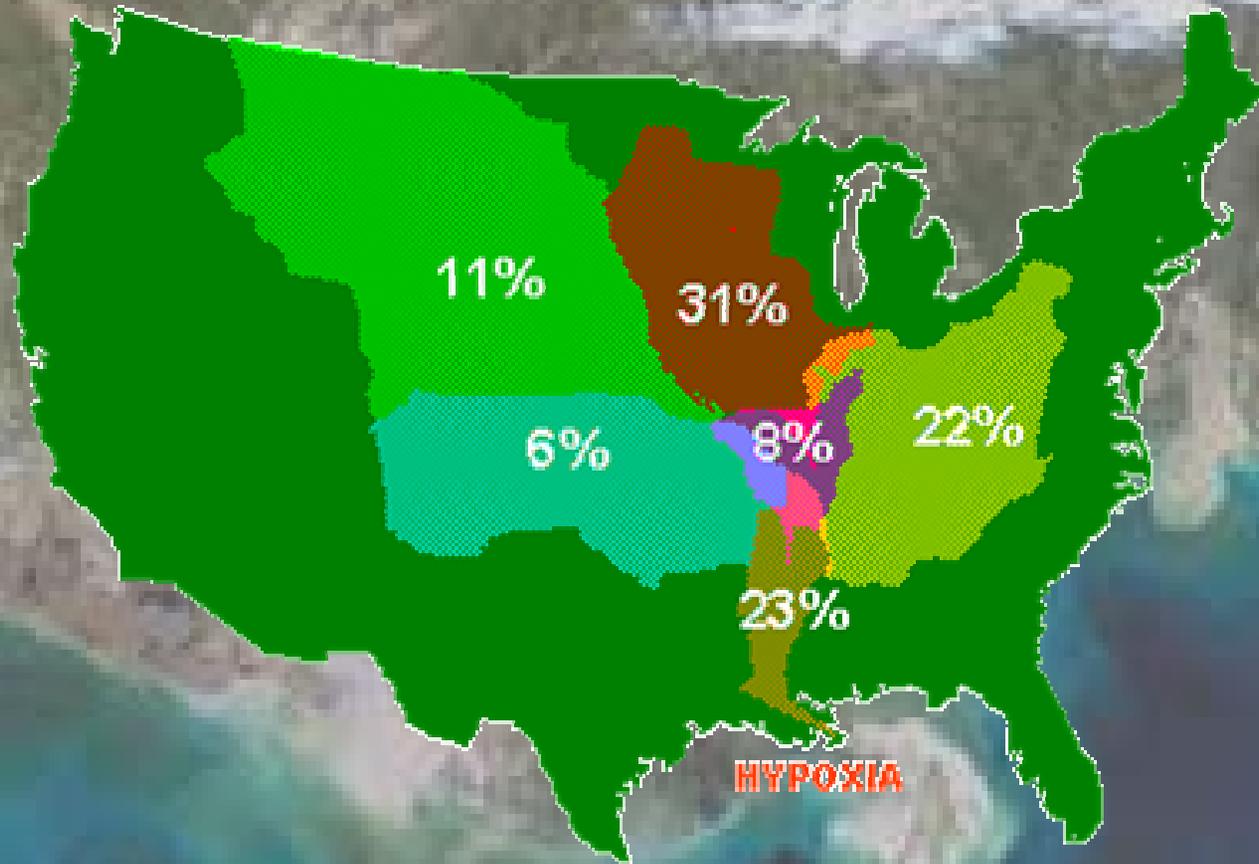
# ...equals more impacts



- More nutrient runoff to surface and groundwater
- Threat to grasslands, conservation acres and other remaining habitat
- Less diversity on the landscape and in the markets



# Feeding the Dead Zone



Corn Belt is Biggest Contributor

# Food v. Fuel: High Prices or Fair Prices?

Soybean Price 10/07-12/07

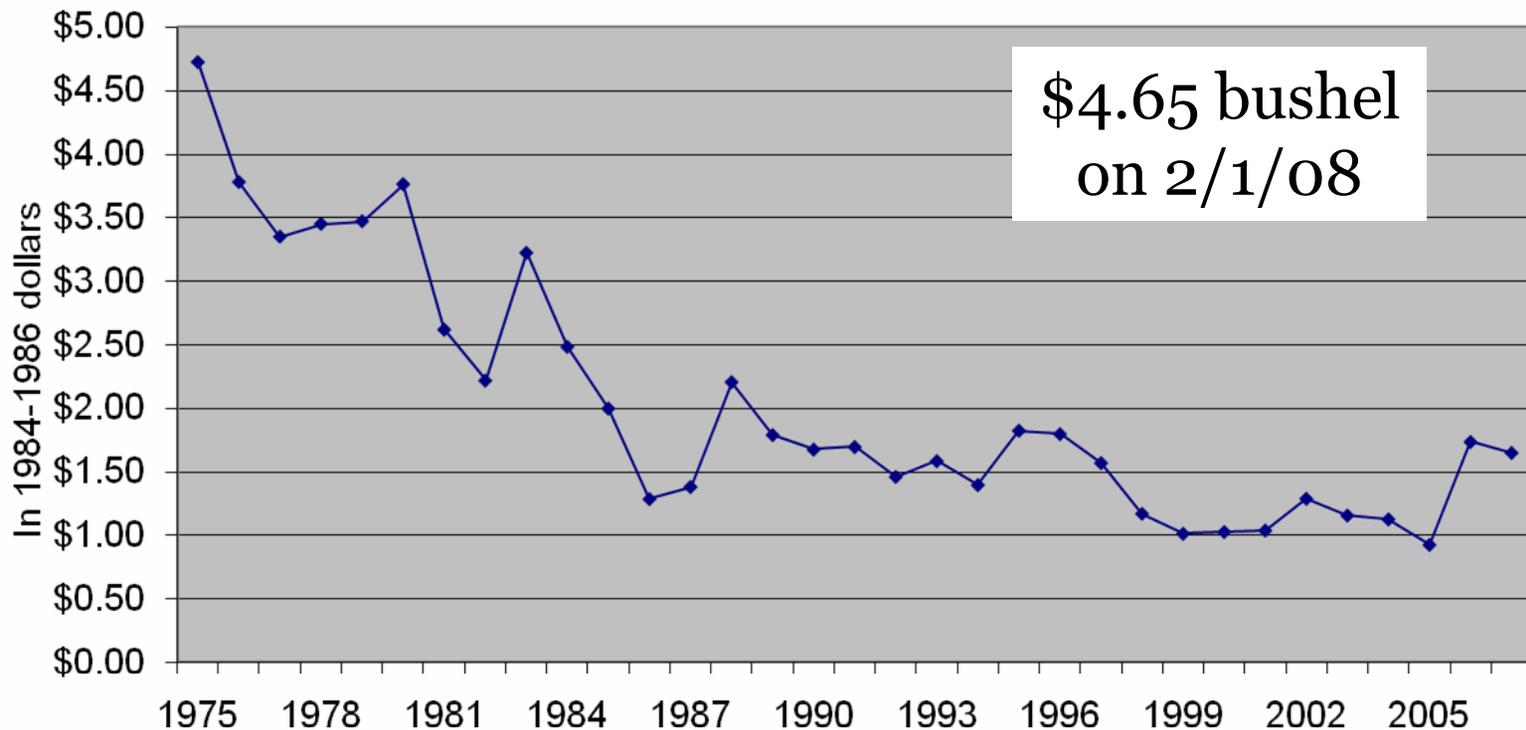


Corn Price 10/07-12/07



# Food vs. Fuel: High Prices or Fair Prices?

The Real Price of Corn 1975-2007



Source: USDA Economic Research Service.



# Real Beneficiaries of Cheap Grain

**Industrial Animal Factories \$35 Billion in Total Savings  
from Below-Cost Feed Prices, 1997 - 2005**

Top Four Hog-Producing Companies			Top Four Broiler-Producing Companies		
Company	Market Share	Total Savings, 1997-2005	Company	Market Share	Total Savings, 1997-2005
Smithfield	30%	\$2.54 billion	Tyson	23%	\$2.59 billion
Premium Standard	8%	\$680 million	Gold Kist	10%	\$1.13 billion
Seaboard Corp	7.5%	\$637 million	Pilgrim's Pride	9%	\$1.01 billion
Prestage	5%	\$426 million	ConAgra Poultry	8%	\$900 million
<b>Total (All Companies)</b>	<b>100%</b>	<b>\$8.5 billion</b>	<b>Total (All Companies)</b>	<b>100%</b>	<b>\$11.25 billion</b>

Source: Tufts University, Global Development and Environmental Institute. *Feeding at the Trough: Industrial Livestock Firms Saved \$35 billion From Low Feed Prices*, Dec. 2007.



Institute for Agriculture and Trade Policy

# Food vs. Fuel: Full of Known Unknowns

- Impacts on food security will vary depending on food and farming systems context
- What works domestically may not work internationally – **trade policy** is key.
  - U.S. 54 cent per gallon ethanol tariff
  - Will we “dump” or energy demand on the Global South
- Focus needs to be on strengthening overall productive capacity of agriculture for future generations.



# Policy as a Mechanism



- US Farm Bill
- US Energy Policy Act
- State policies
- Local economic development policies



# Who benefits – Main Street or Wall Street?

- Under 10% of the new capacity and expansion under construction is farmer-owned
- Plant size is increasing, with new facilities proposed up to 275 mmgy capacity



# Community Economic Returns



- Local ownership provides more local benefit
- Larger scale does not necessarily translate into larger returns
- Good jobs or continued labor exploitation by industrial agricultural model?

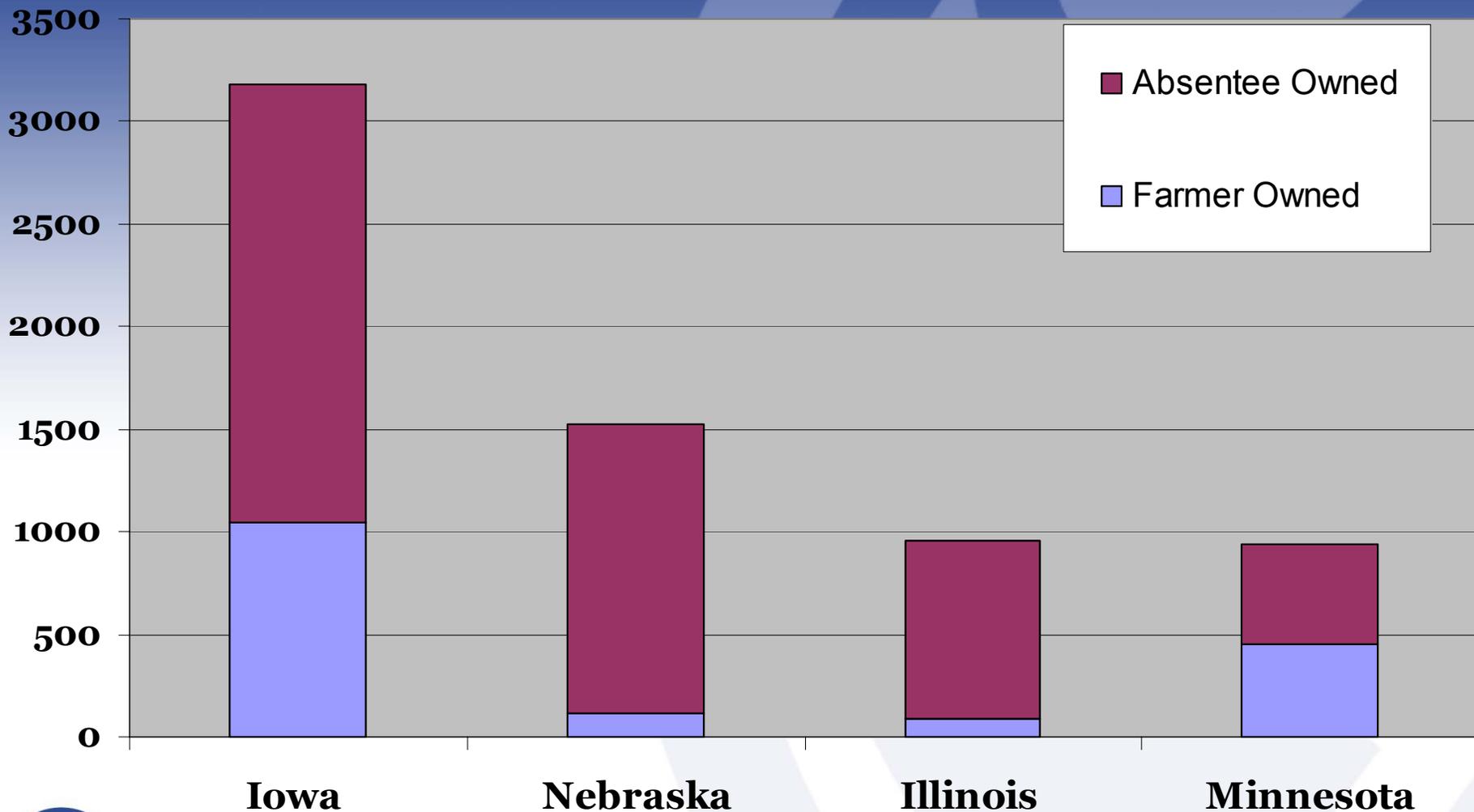


# Key Farm Bill Issue: Investor Incentives

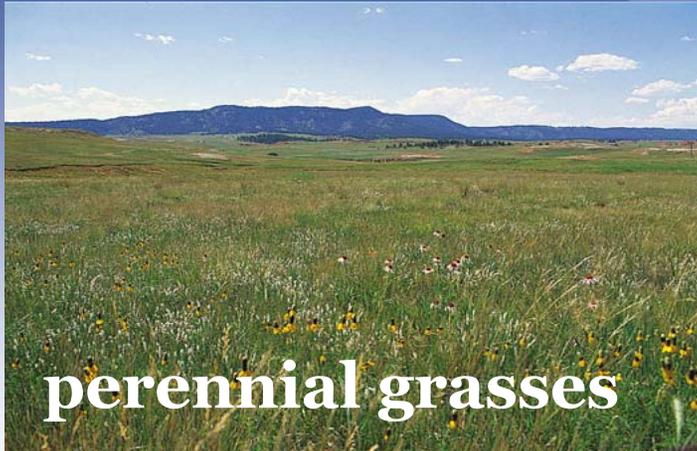
- Encourage Local Ownership of Biorefineries
  - Pending Farm Bill only lists local ownership as one of many criteria in deciding which projects get funding
  - House Farm Bill requires fair wages (Davis-Bacon Act) for biorefineries receiving federal support
  - Target public subsidies: “Minnesota Model”
    - Minimum of 51% farmer- or community-owned
    - Capped subsidy payments at 15 million gallons annually
  - Require payback of public subsidies from outside purchase of local plants



# Ethanol and Ownership



# Making the Shift to Biomass...



# ...Requires New Thinking

- Technology or landscape as driver
- The infrastructure gap
- Is energy the best use?
- Harvest and supply variability
- How much can or should we grow and harvest?
  - High yield vs. resiliency?



# Today's feedstocks and approaches won't get us where we need to go

- Resources can not support it
- To meet climate, energy and environmental goals, we need to diversify and intensify our efforts



# Perennial crops offer multiple benefits

- Nationwide production capability
- Reduced need for inputs
- Improved water and soil quality
- Enhanced wildlife habitat and carbon sequestration
- Reduced competition with food
- Local advantage
- Tillman Study (Univ. of Minn.)

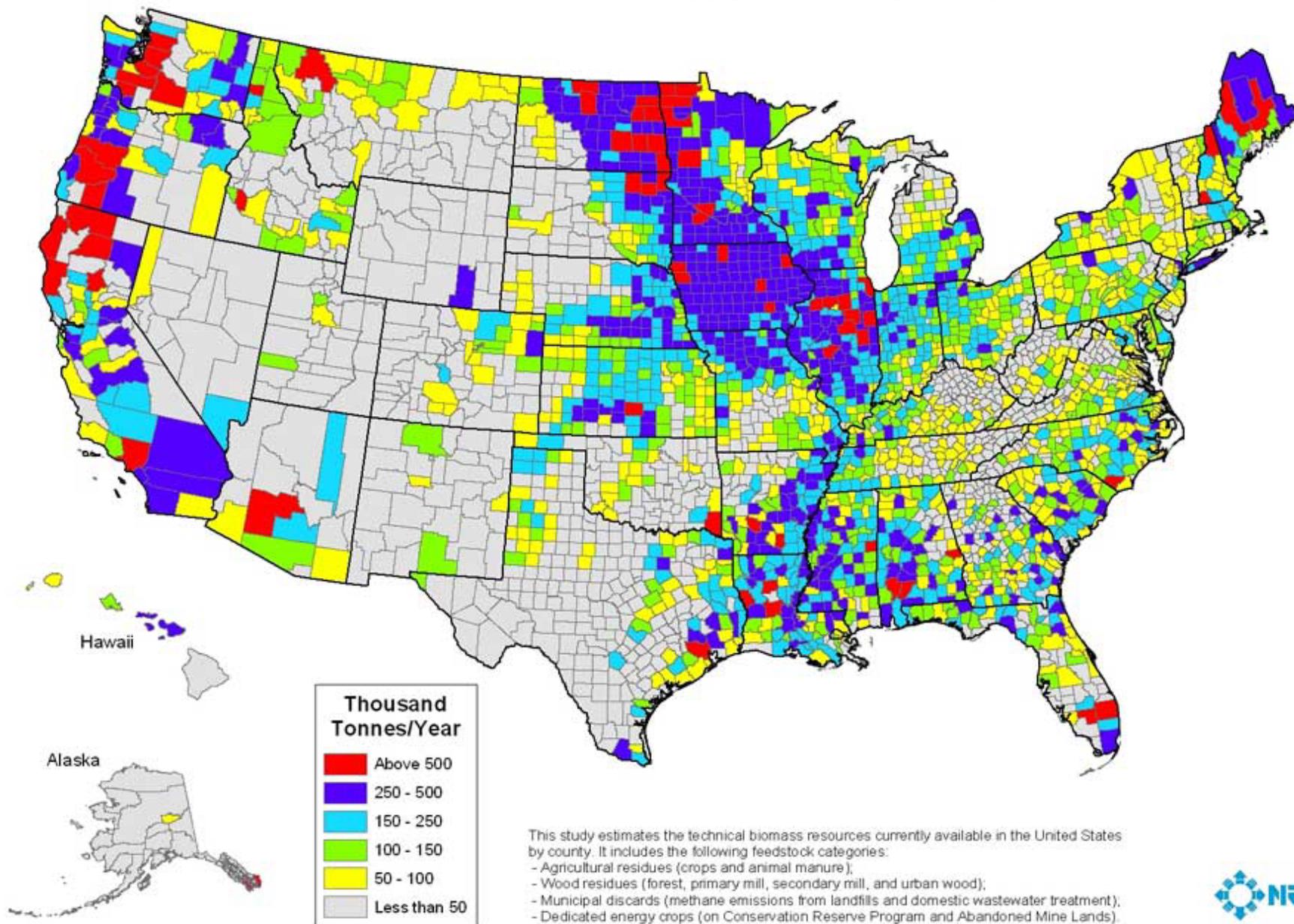


# Getting to the Next Generation

- Risk mitigation for farmers
- Feedstock, infrastructure and biorefinery development assistance
- Support immediate feedstock uses and new markets (heat/power/etc.)
- Recognize ecological and climate value of perennial crops



## Biomass Resources Available in the United States

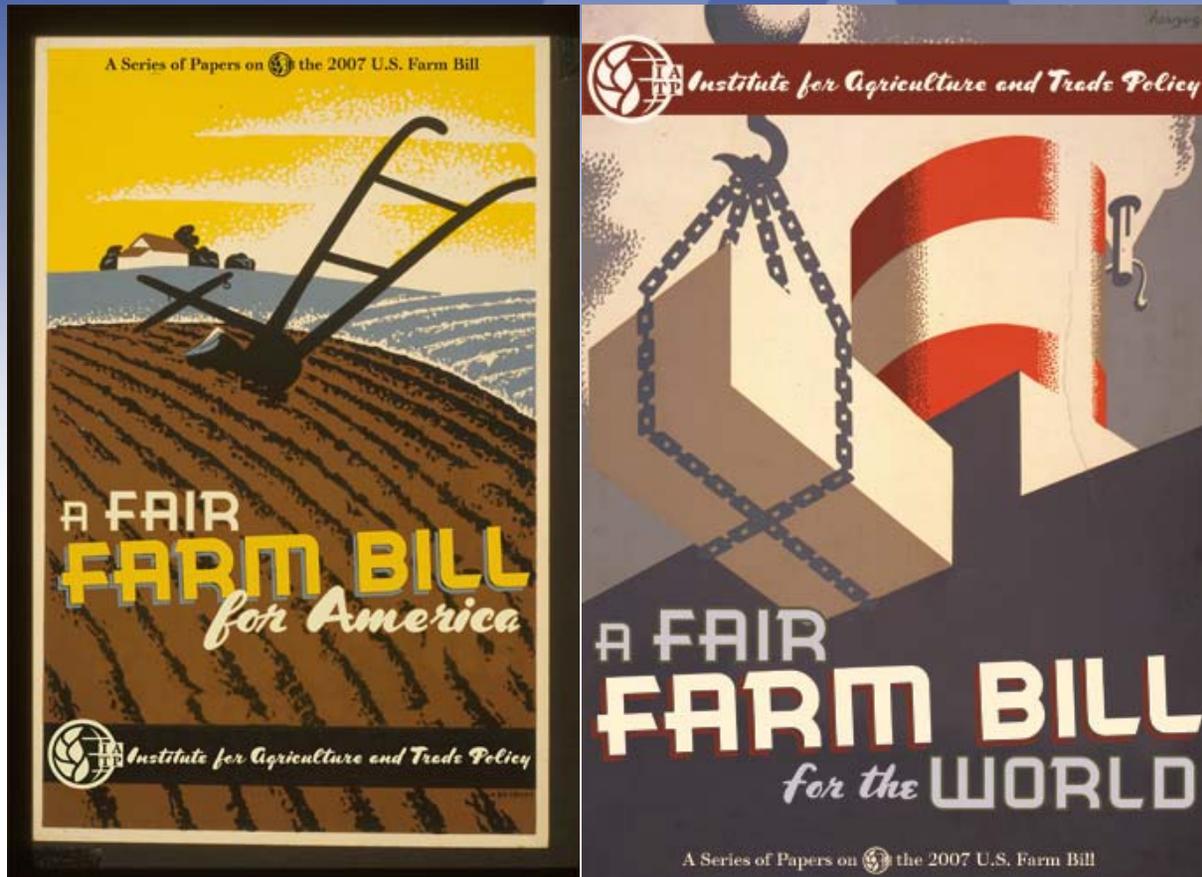


# Making the Leap to “Next Generation” Bioenergy: Corn to Cellulosic

- Cellulosic: Fibrous plant cells require more energy to be broken down to release energy
- Chicken or Egg Question:
  - Farmers won’t grow feedstocks without a market
  - Investors won’t build plants without secure supply of feedstocks within economical shipping distance
- Must Address both challenges simultaneously
  - “Cropshed” approach



# Making the Farm Bill Fair



***Download at [www.iatp.org](http://www.iatp.org)***



Institute for Agriculture and Trade Policy

# Key Farm Bill Issue: Maintain Environmental Reserves

- Conservation Reserve Program
  - Last acreage set aside program in U.S.
  - Contracts expire on 26 out of 35 million acres by 2010
  - New “Working Lands” Cropland approach
    - Must provide enough incentives to convince farmers not to plant more corn



# Key Farm Bill Issue: Enhance Conservation Security Program

- Flagship green payment program in US
- 5 to 10 year contracts to provide farmers with technical assistance and cash incentives to transition to more sustainable cropping practices.
- Already has incentives in place to encourage on-farm conservation, on-farm biofuels and renewable energy production
- Proposed amendments to allow more specific incentives to help farmers transition to more sustainable bioenergy feedstocks
- Needs to be fully funded—should be available nationwide



# Key Farm Bill Issue: Create a Strategic Renewable Energy Working Lands Reserve

- Provide long-term contracts to farmers for sustainable production of perennial, native bioenergy crops on existing agricultural lands
- Publicly controlled strategic renewable energy reserve modeled on Strategic Petroleum Reserve
- Provide price stabilization and reduce overproduction and dumping of export-oriented commodities.
- Transition incentives
  - Low interest equipment loans
  - Technical assistance



# Key Farm Bill Issues: Farmer Incentives

## Bioenergy Crop Transition Assistance Program

- To spur production of dedicated energy crops in a sustainable manner that protects soil, air, water, and wildlife;
- To provide financial and technical assistance to farmers for increased production of energy crops for use in bioenergy, power or heat, or biobased products;
- To establish biomass energy reserve project areas; and
- To provide financial and technical assistance for harvesting, storing and transporting cellulose materials.



# Key Farm Bill Issue: Investor Incentives

- Sustainability: “Reward the Best, Incentivize the Rest”
  - Provide premium incentives for production facilities that utilize sustainable feedstocks
  - Loan guarantees
  - Federal procurement premiums
  - Reverse auctions



# Other Key Farm Bill Issue: Investor Incentives (Cont.)

- **Energy Title**
  - Renewable Energy for America Program (REAP)
    - 20% Earmarked for small-scale on-farm energy production
- **Rural Development Title**
- **Research Title**



# Key Farm Bill Issue: Research & Development

- Shift federal research funding priorities to examine and assess emerging bioenergy production technologies and their associated feedstocks for:
  - Sustainability objectives, including Green House Gas Reduction
  - Diversified crop rotations that are adaptable regionally
  - Conduciveness to retaining wealth in local economies
- Fund pilot projects to experiment with most promising emerging technologies for meeting *public, not just corporate goals*



# Minnesota “Next Generation” Biofuels Legislation

**CLEAN ENERGY MINNESOTA**

*Securing Energy Independence*

- Sustainability standards for biomass production and harvesting
- Technical assistance to help farmers make the transition to growing sustainable biomass feedstocks
- Incentives for community ownership
- Incentives for bioenergy facilities to use sustainable biomass
- Resources for education and outreach to farmers and communities



Institute for Agriculture and Trade Policy

# Minnesota RIM-Clean Energy Program

- Board of Water & Soil Resources is working with stakeholders to finalize sustainability criteria
- Bonding at \$46 million will allow for around 20,000 acres to be enrolled
  - Funding is enormous challenge at both state and federal levels
- Complements other Minnesota policy goals and approaches
  - Clean Water Legacy
  - Global Warming legislation
  - DNR Long Range Duck Recovery Plan
  - Renewable Energy Standard



# Making the Next Generation Sustainable

- Produce food, fiber, energy **and** improve environmental quality and enhance our natural resources
- Promote community-owned systems scaled to local resources and needs
- Creates new markets for farmers based sustainable production





Institute for Agriculture and Trade Policy

Celebrating 20 years 1986–2006

**THANK YOU!**

R. Dennis Olson  
Senior Policy Analyst  
Trade & Global Governance Program  
2105 1st Avenue South  
Minneapolis, Minnesota 55405  
612 870 3412 [dolson@iatp.org](mailto:dolson@iatp.org)  
<http://www.iatp.org>