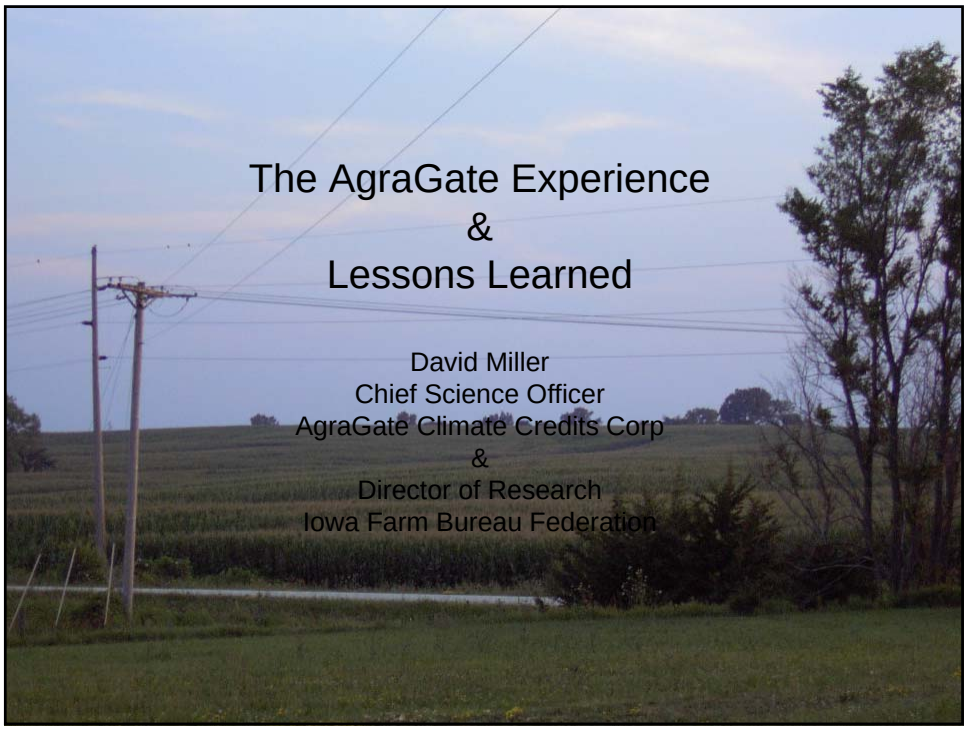

The AgraGate Experience
&
Lessons Learned

David Miller
Chief Science Officer
AgraGate Climate Credits Corp
&
Director of Research
Iowa Farm Bureau Federation

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- An entity for carbon credit aggregation owned by Iowa Farm Bureau Federation
- First licensed aggregator on the Chicago Climate Exchange (2003)
- Aggregation Specialists – Building a nation-wide network of contract facilitators in every state.
- Handling about 6 Million Carbon Credits annually
- “Country Elevator of Carbon Credits”

PEOPLE. PROGRESS. PRIDE.™ IOWA FARM BUREAU

- General Farm Organization
- Part of the American Farm Bureau Federation
- 155,000 member families
- Political Representation
- Member Services

Services

- Information
- Enrollment
- Certification
- Verification
- Credit marketing

Approaches to Greenhouse Gas Regulation

- Traditional Command and Control
  - Regulatory agency sets standards
    - Specific technologies (scrubbers)
    - Performance (tons, tons/unit output)
- Cap and Trade
  - Regulatory agency sets overall objective (total allowable emissions)
    - Allocates or auctions emission allowances (auction = tax)
    - Firms must obtain allowances in order to emit a pollutant
      - Firms can receive allowances, purchase allowances, or reduce emissions
- Cap and Trade with Offsets
    - Unregulated firms can receive credits for reducing emissions
    - Regulated firms can purchase offset credits to meet regulatory requirements ("offsetting emissions")
- Emission Taxes
  - Internalizes public damage
  - Equates costs of abatement

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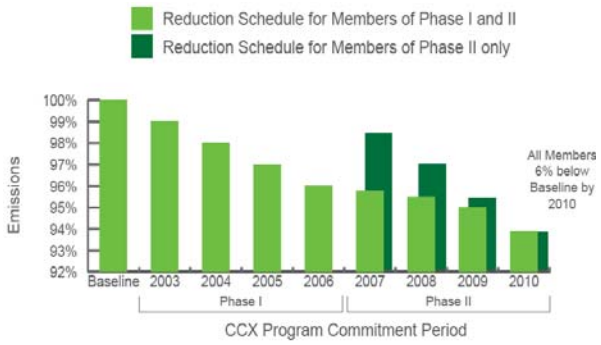
CCX Market Architecture (2003-2010)

Phase I: Commitments to reduce 1% per year below baseline from 2003-2006
Phase II: Commitment to reduce to 6% below baseline by 2010
Baseline = Avg. emissions from 1998-2001, emissions in 2000 (Phase II)



CCX Trading Model
- Rules-based Exchange
  - Members set the rules
- Voluntary decision to join, but legally binding commitment
- Ag Offset program
  Standardized protocols
  Enforced through contracts

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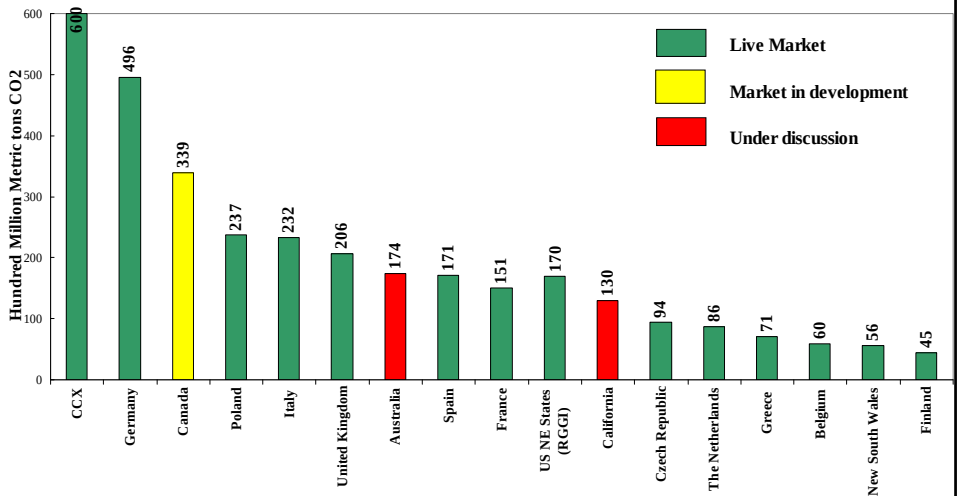
Size of Live, Emerging, Possible GHG Markets



CCX includes more industrial emissions under its legally binding cap than any country in the world

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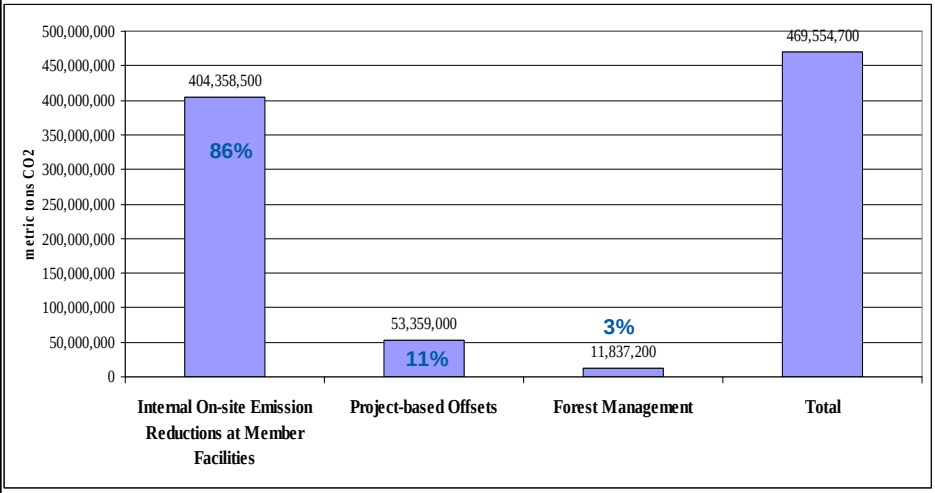
Emission Reductions and Project-based Offsets in CCX 2003 through 2007*

(metric tons CO_2)



*As of 2-20-09. A portion of new member emission reductions are currently undergoing verification.

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CCX Offset Projects

- As science directs, foster emission reductions all sectors: low cost, win-win
  - Landfill, agricultural and coalmine methane capture/destruction
  - Agricultural soils best management practices
  - Afforestation & forest management
  - Fuel switching, renewables
- All projects must be independently verified by an approved entity
- CCX Offset Rules can be found at:
  - http://www.chicagoclimateexchange.com/docs/offsets/CCX_Rulebook_Chapter09_OffsetsAndEarlyActionCredits

Predictable: facilitate carbon finance

Additional: beyond regulation, recent

Verifiable: eligibility, quantity, ownership

No cherry picking – emitters must take entity-wide reductions

Fungible: All Carbon Financial Instruments are equivalent

Avoid perverse incentives

Conservative crediting

Reserve pools for sequestration assurance

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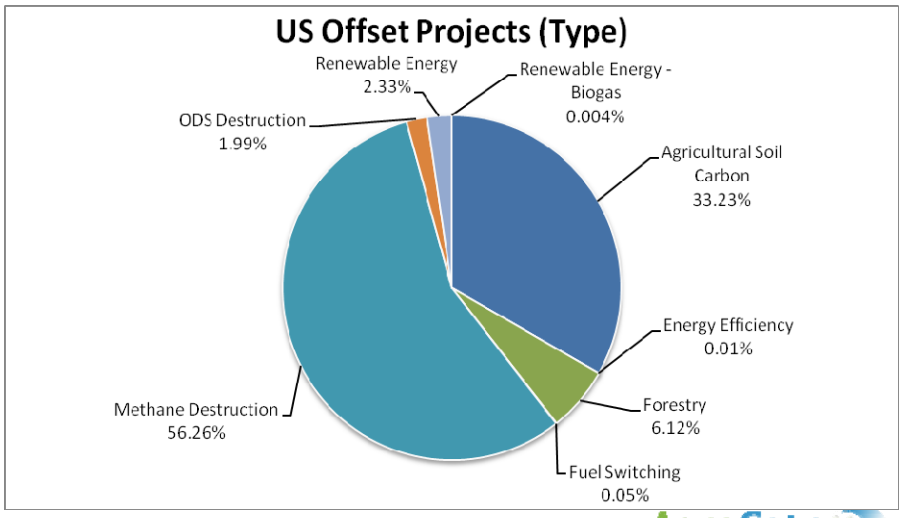
Composition of CCX Domestic Offsets Pool through April 2009



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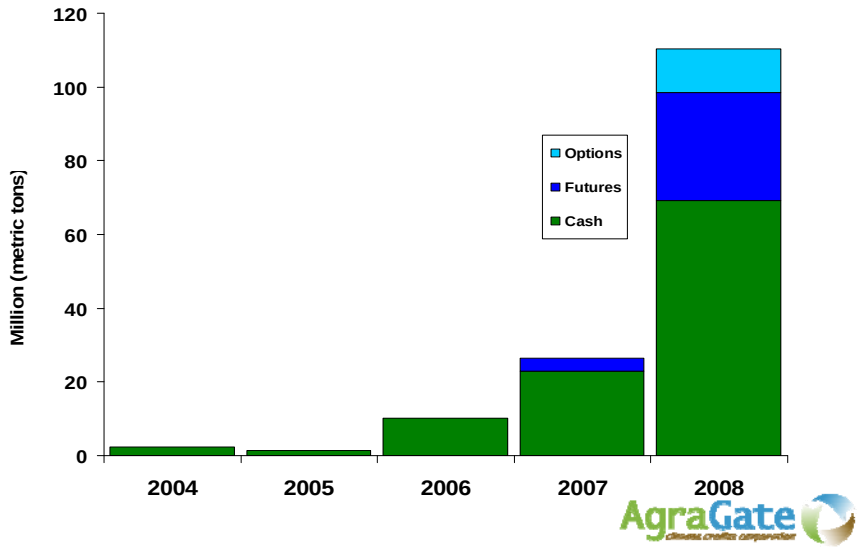
CCX CFI spot and derivatives volume 2004-2008



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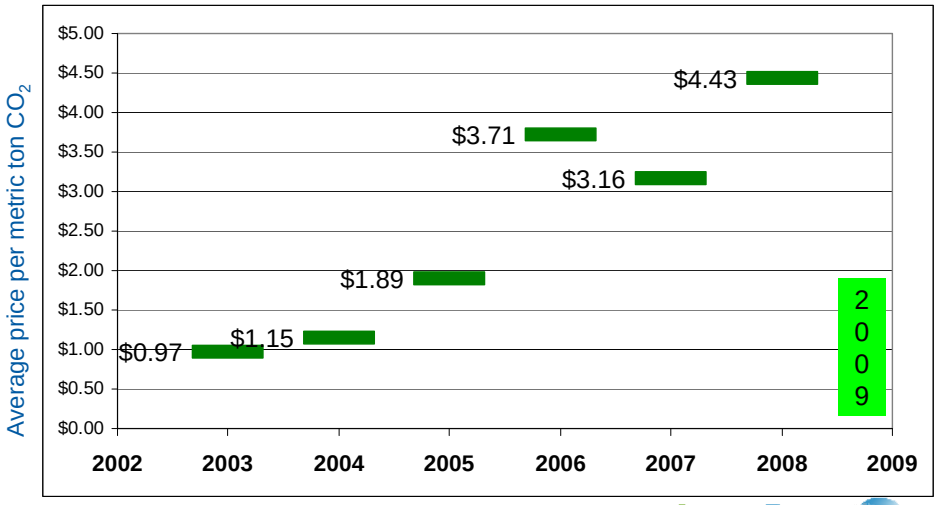
Annual Average* Price for CCX CFIs 2003-2008



* Volume-weighted average for spot market trades

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U.S. Farmer Participation in CCX

- 16 million acres nationally in 36 states
- 9,000 farmers, ranchers & landowners
- 25 professional verification entities approved
  - "green jobs" employment & income is a reality at CCX
- Tens of millions of dollars in new income through global environmental services

- 2 major soils aggregators
  - AgraGate & Farmers Union
- Several minor aggregators

  - 4.5 million acres no-till
  - 2 million acres grass establishment
  - 5 million acres rangeland
  - 0.5 million acres afforestation
  - 4 million acres managed forest
  - ag methane projects

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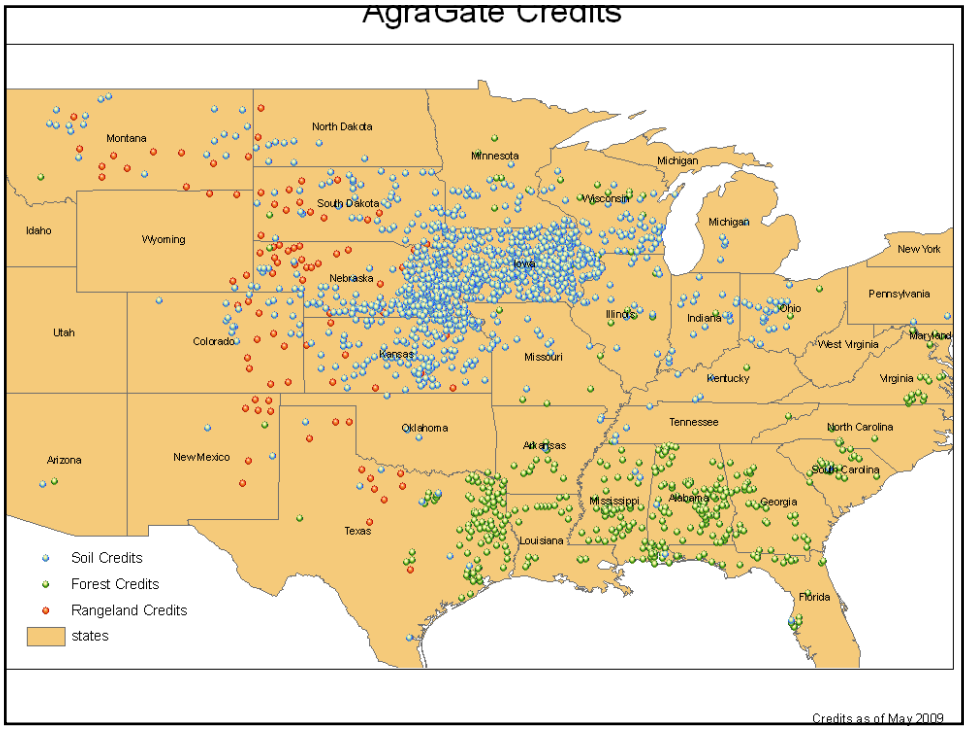
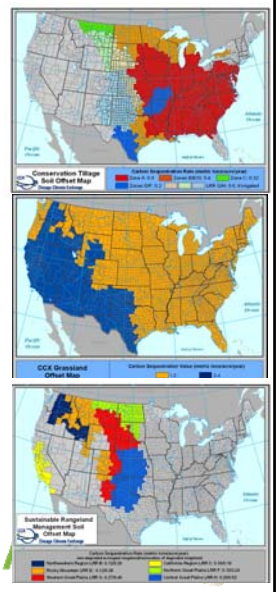


Agricultural soil sequestration offsets in CCX

- No-till, New Grasslands, Rangeland
- CCX Special Committee on Soil Carbon (scientific committee) provided guidance on annual carbon gains, geography
- 20% Implicit Reserve to mitigate against post-contract reversals
- 20% Explicit Reserve to mitigate against in-contract reversals
- Full accountability in-contract
- Avoided perverse incentive to till if only "new" no-tillers allowed in
- 100% annual certification; 10% visual inspection;
- Pilot project on satellite imagery



Forestry Offsets

Two Protocols

1. New tree plantings -- Planting and/or natural regeneration on private non-forest lands after Jan 1, 2003.

- Credits based on net annual increase in carbon stocks (CO_2 equivalents) during 2003-2010.
- Thinning of a tree stand is not allowed.
- Proof of ownership and legal description of land.
- Statement of Intent to keep as forest
- 15 year contract.

2. Sustainably Managed Forests -- Must provide evidence of sustainable forest management of all their managed forest land.

- Must have a forest management plan and must be member of the Sustainable Forestry Initiative or American Tree Farm System.
- Provide a description of forest management activity and quantification model used.
- Stand thinning & harvest **is** allowed.
- Long-lived wood credits
- 15 year contract.

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Methane Offsets

- Ag Methane destruction projects that were put into place after Jan 1, 2003.

- Eligibility
  - Liquid slurry storage
  - Pit storage below animals (> 1 month)
  - Uncovered anaerobic lagoons

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CCX Offsets Issued 2009

Agricultural Soil Carbon Offset	10,857,400
Forestry Offset	6,022,000
Landfill Methane Offset	1,840,700
Renewable Energy Offset - Wind	1,557,200
Energy Efficiency Offset	1,413,400
Coal Mine Methane Offset	1,159,300
Renewable Energy Offset	1,041,700
Fuel Switching Offset	904,200
Agricultural Methane Offset	483,800
Renewable Energy Offset - Biomass	472,300
Waste Disposal Offset - HFC Destruction	255,700
Ozone Depleting Substance Destruction Offset	175,300
Renewable Energy Offset - Biogas	55,800
Wastewater Treatment Methane Recovery Offset	44,300
Organic Waste Disposal Methane Offset	25,700
Grand Total	**26,308,800**

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Emerging Issues for Carbon Markets

- Scope of Coverage
- Eligibility
- Consistency of Rules
- Financial Impacts
- Environmental Considerations
- Unintended Consequences

Farm Bureau Policy

We support:

- A voluntary market-based carbon credit trading system
- Farmers being compensated for planting crops or farming practices that keep carbon in the soil or plant material;
- Alternative energy sources
- Incentives to industries for energy efficiency or emission reductions
- Market-based solutions rather than federal or state emission limits

We oppose:

- Climate change legislation that establishes mandatory cap-and trade provisions;
- Any regulation of GHG by EPA under the Clean Air Act
- Reporting of GHG by ag entities
- Regulation of GHG from livestock
- Unilateral climate regulatory action
- Indirect land use changes in other countries
- Taxes on carbon uses or emissions

Other Ag Industry Participants

- Corn -- According to NCGA president Darrin Ihnen, Corn Gorwers couldn't support the Waxman-Markey bill on the House side due to potential adverse economic impacts on corn growers. Ihnen notes NCGA will "also wait for the official analysis from the Environmental Protection Agency in the coming weeks."
- Wheat -- The NAWG Board of Directors has directed staff to engage in climate change legislation negotiations to achieve an outcome that is in the best interest of our grower-members. On Sept. 4, 2009, the NAWG Board of Directors approved a resolution regarding greenhouse gas regulation requiring a net economic benefit from greenhouse legislation or regulation for a measure to gain NAWG's support.
- National Farmers Union -- president Roger Johnson says "NFU has long supported legislation that provides an opportunity for agriculture to play a positive role in addressing our climate and energy needs," and that the discussion draft announced last week by Senators Kerry and Lieberman "continues along that path."

  "We continue to seek opportunity for farmers and ranchers who want to do the right thing environmentally but need the right economic incentives. We strongly support economic incentives from the climate change bill to enable agriculture to play a positive role," the NFU president notes.

Impacts of Climate Change Legislation*

- If enacted, the ultimate cost of H.R. 2454 would be determined by the response of the economy to the technological challenges presented by the bill.
  - Allocation of allowances determines who ultimately bears the cost.
  - Availability of offsets is the key factor in determining the cost of H.R.2454.
  - Long-term depends on low-carbon electrical sources such as nuclear power, renewables, natural gas, and coal-fired capacity with carbon capture and storage technology.
  - Attempts to estimate household effects (or other fine-grained analyses) are fraught with numerous difficulties that reflect more on the philosophies and assumptions of the cases reviewed than on any credible future effect.

*From CBO analysis of H.R. 2454

Costs and Benefits of Climate Policy to Agriculture

- Four main issues:
  - Production costs : energy and fertilizer inputs
  - Offsets/incentives: GHG reduction potential
  - Renewable energy: Wind, bioenergy
  - Global food security
- Agriculture is energy intensive:
  - Fertilizer and fuel costs account for 50-60 percent of variable costs of production for corn;
  - Because of higher personal transportation expenditures, rural households are more likely than urban households to feel the pinch of increased gas prices.
- The costs should be considered against the potential benefits from offsets and renewable energy markets

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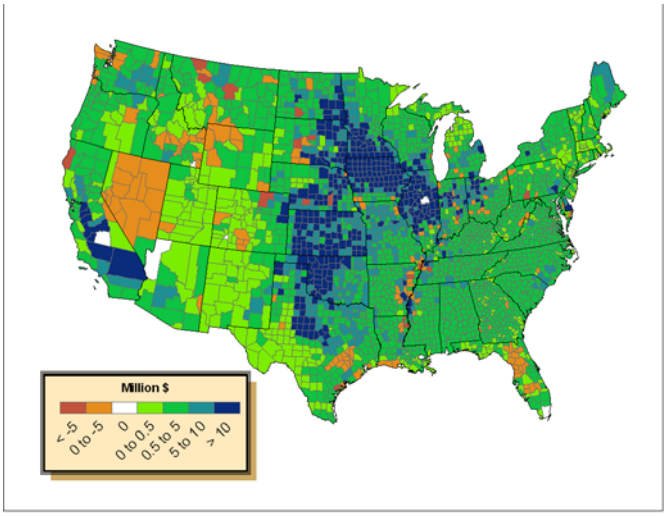
Total Ag Net Returns in 2025*



*University of Tennessee analysis, October 2009

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Issues for Ag & Forestry

- Who regulates?
- Will offsets be included
- Who will set standards for ag & forestry?
- Effects on ag inputs
- Effects on energy markets
- Effects on economy
- Linkages to world markets

Key Carbon Offset Issues (RSVP&E)

- Real – Quantification methodology
- Surplus – Additionality measures
- Verified – 3rd party certification
- Permanence – Duration & reversability
- Enforceable – Contract terms & ownership

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Asking the Right Questions

- What can agriculture and forestry do to mitigate carbon emissions?
- Focus is on reductions:
  - Less nitrogen
  - Less cattle
  - Reduced stocking rates
  - Land-use change
  - Afforestation
  - Grasslands
  - Forest preservation
- How can we achieve global food security in a carbon constrained world?
- Focus on resource use efficiency
  - Output per unit of input
  - Increased food production
  - Technology solutions
  - Minimizes land-use change
  - Resource utilization
    - Managed forest
    - Grazing efficiency
- Adaptation

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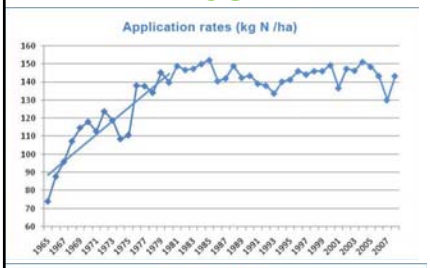
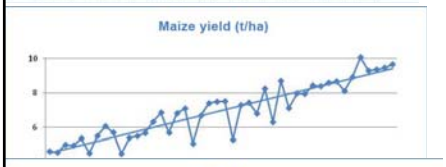
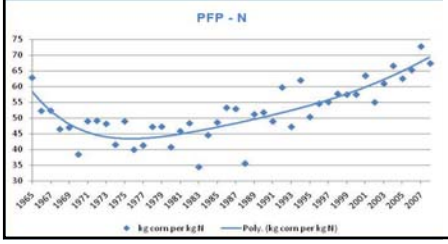
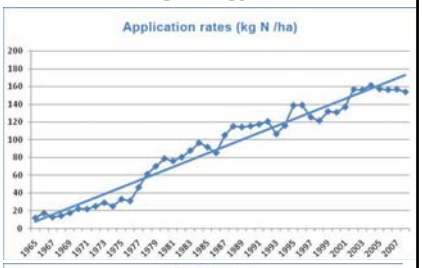
US

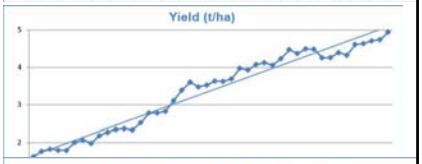


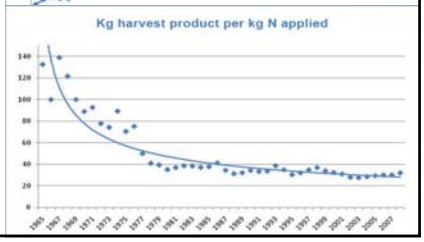




China







Lessons Learned

- The US “voluntary” market has allowed ag & forestry to “learn by doing”
- Ag & Forestry offsets are the oil that will enable a GHG reduction program to run smoothly
- As the carbon market matures, more opportunities are likely to emerge for ag & forestry
- Over-estimation of offset supply
- Political uncertainty can kill fledgling markets
  - Specific authority & recognition of ag & forestry offsets
  - USDA needs to be the lead agency on ag & forestry offsets
  - “grandfathering in” of early action credits
- Perfection is the enemy of progress & success
  - Mechanisms designed for developing countries are not necessarily good for the US
  - Zero tolerance does not work for ag
  - Reasonable operating criteria for offsets – must work on “working lands”

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Lessons Learned

- Contract length matters
  - Land control turnover
  - Commitment
- The paperwork requirements may be more than most farmers will put up with.
- Offsets vs USDA programs
- Voluntary eco-system markets are not reliable enough for most farmers
- Myths & perceptions are hard to overcome
- There are a lot of people who are quite content to dictate production practices to farmers

Concluding Thoughts

- Farmers are skeptical of claims that carbon opportunities will be good for ag
- Policies that result in a sector shrinkage are not going to be embraced
- Carbon emission reductions need to be measureable, verifiable, and consistent with the over-arching goals of producing food, feed, fiber and fuel
- Agriculture has already proven they can provide offsets at scale if the protocols are practical and reasonable
- A growing economy may need to consider GHG intensity reductions as well as absolute reductions.

Let us remember:

- For society as a whole, there is a very strong correlation between energy use and standard of living. Energy makes manual labor more efficient; is a catalyst for transformation of ingredients and raw products to usable goods; and energy extends the capabilities of the human mind.
- For society to prosper, it must grow. The debate cannot become one of, “maintaining the status quo with less”. It must be a debate about “how to do more with what we have.”

Questions?

For more information

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