

# Exchange of Ideas 2006

## Carbon Credits

Presented by

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# Carbon Credit Estimator Worksheet

The producer can input his **planned or existing acres** of no-till cropping, grass stands, restored wetlands, and/or enhanced rangeland practices in cells (B7 through B11) to come up with an estimated annual total of carbon credits allowed by the Chicago Climate Exchange.

He can also plug in the **current price of the carbon credits** as shown in the “Markets” section of the Chicago Climate Exchange web page ([www.chicagoclimatex.com](http://www.chicagoclimatex.com)) in cell F14.

The calculations are set up to show annual tons per acre on the farm, what the annual payments before and after the deductions are taken out, what the final escrow payment would be, as well as the total of the multi-year contract at today’s carbon contract price.

Please note that the carbon is priced annually for the next 5 years, so the current price shown may not be the value of credits earned and sold in future years.

An on-line version of this is available on the ND Farmers Union website ([www.ndfu.org](http://www.ndfu.org)) (click on carbon credit icon). There may be slight variations in the annual accrual rate in states outside the northern plains, but the worksheet should give a reasonably accurate estimate of the potential income of the carbon credits.

For a producer to actually enroll, a contract must be signed, and the FSA form 578, actual field maps, and an itemized list of land tracts and descriptions will be needed.

For producers in the northern plains states of North Dakota, South Dakota, Montana, Minnesota, and Wisconsin, there will be downloadable forms for actual enrollment as additional contracts are available in the coming months.

## **Additional questions?**

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## CARBON CREDIT ESTIMATOR

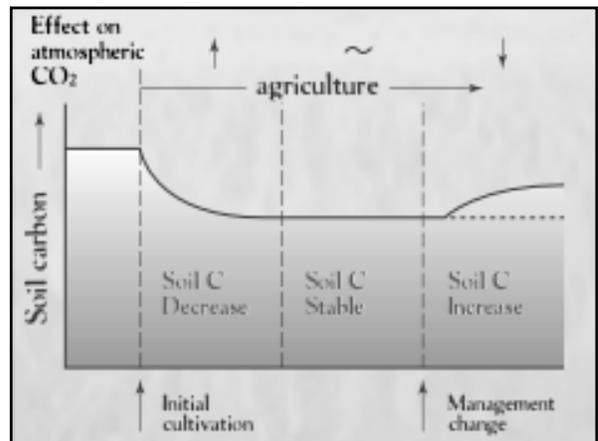
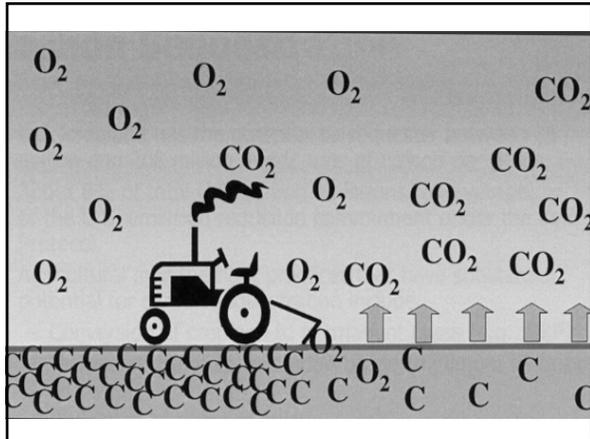
<i>Management Practice</i>	<i>Acres</i>	<i>Seq. Rate/ Acre</i>	<i>Metric Tonnes/yr</i>
No Till Cropping	1420	0.4	568
Seeding Long Term Grass	110	0.75	82.5
Restoration or Creation ofWetlands	45	4.5	202.5
Enhance Rangeland Vegetation	140	0.4	56
<b>Total Farm Tons Annually</b>			<b>909</b>
<b>Price per Ton</b>			<b>3.5</b>
<i>Total Annual Gross Payment</i>			<i>3181.5</i>
<i>Less Aggregator 10% commission</i>			<i>3181.5</i>
<b>Annual Net Contract</b>			<b>2863.5</b>
<i>Annual Net Times 80% To Farmer (5 annual Payments)</i>			<i>2290.8</i>
<i>Final Pymt. At Contract End</i>			<i>2863.5</i>
<b>Total 5 year Contract Income</b>			<b>14316.8</b>

## Carbon Credits - How Producers May Benefit From Storing Carbon

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For  
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Exchange of Ideas

## Carbon Sequestration

- Carbon sequestration can be defined as the capture and secure storage of carbon that would otherwise be emitted to or remain in the atmosphere.
- What are Carbon Credits?
  - Carbon credits encompass two ideas:
    - (1) Prevention/reduction of carbon emissions produced by human activities from reaching the atmosphere by capturing and diverting them to secure storage.
    - (2) Removal of carbon from the atmosphere by various means and securely storing it.



## Agricultural Soil Carbon Sequestration

- Soil organic matter is an important repository of carbon (C).
- Soils may act either as a **source**, releasing C to the atmosphere, or a **sink** into which C from the atmosphere is deposited.
- Agricultural practices that increase soil organic matter also serve to increase the C content in soils, thus removing CO<sub>2</sub> from the atmosphere.

## Potential for Agricultural Soil Carbon Sequestration

- U.S. cropland has the potential to sequester between 75 million and 208 million metric tons of carbon per year.
- About 8% of total U.S. carbon emissions (on average) or 24% of the U.S. emission reduction commitment under the Kyoto Protocol.
- Agricultural management practices that have substantial potential for carbon sequestration include:
  - Conversion of cropland to permanent grass (e.g., CRP).
  - Increased use of conservation tillage (minimum till or no-till).
  - Reduction of summer fallow.

## An acre of land could produce:

- Income from the sale of a grain crop
- Income from a government crop subsidy
- Income from the lease or sale of minerals under the surface
- Income from recreational uses
- Income from the wind development rights
- Income from the storage of carbon

## Chicago Climate Exchange

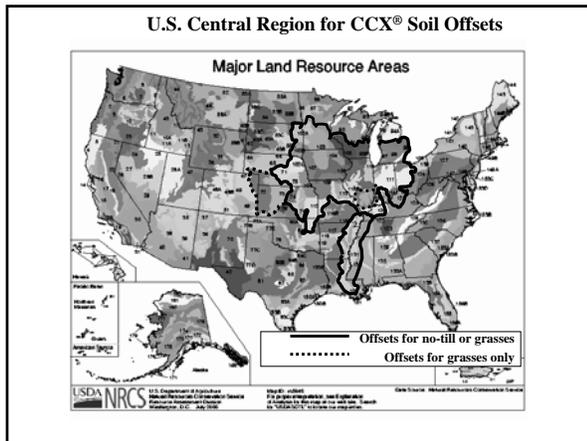
- The Chicago Climate Exchange (CCX) is a voluntary, pilot GHG emissions trading program targeting emissions and offsets in North America (US, Canada and Mexico) as well as limited offset projects in Brazil.

## Chicago Climate Exchange

- Carbon sequestration in soil and biomass will be recognized on the CCX through credits generated by projects that are registered and verified on the Exchange.
- Additional on-farm GHG emission reduction activities, such as methane capture and reduced nitrogen application, are also targeted for inclusion.

## ND Farmers Union Carbon Sequestration Project

- Enable farmers and ranchers to sell carbon credits on the Chicago Climate Exchange at minimal cost and risk.
- Educate producers and others on the issues of climate change and how agriculture may be a partial solution
- Plan is to “aggregate” credits to achieve large enough blocks of credits to sell.
- Patterned after successful Iowa Farm Bureau Carbon Credit Project in its fourth year (about 400,000 acres)
- ND Project began in spring 2006, but plans are to expand to Montana, South Dakota, Minnesota, and Wisconsin (Farmers Union Enterprises) in the next couple of years.



- **Pricing:** The transfer price of the XSOs covered by this contract shall be the sales price as determined by sale through the Chicago Climate Exchange less a 10% service fee.
- Plan is to offer a bundle of potential carbon credit practices

- ### NDFU Carbon Sequestration
- **Conversion to No-till cropping** (.4 metric tons per acre)(Potential 12.9 million new acres)
  - **Seeding long term grasses** (.75 metric tons per acre)(Water-bank, Grassland Reserve, Switchgrass)
  - **Enhanced range management with increased vegetative index** (.4 metric tons per acre) (Cell grazing and short but intensive grazing practices)
  - **Creation or restoration of wetlands** (4.5 metric tons per acre)(Priority in Prairie Pothole region)
  - Began aggregating acres in spring 2006

- ### Additional Practices?
- Forestry - Reforestation or new forest areas may be recognized for carbon credits (CCX has provision for forestry projects.) At today's price maybe only \$15-20 per acre, and may require long term easement or some restriction as to thinning or harvesting.
  - Manure management - anaerobic digesters may provide credits based on methane destruction and other offsets - current price maybe about \$20 per cow annually, but may be worth more than that depending on other programs for nitrogen or phosphorus or maybe even clean water credits or if electricity is sold or consumed.
  - Switchgrass may have potential as both a carbon credit mechanism as well as a feedstock for ethanol production or co-firing in coal power plants

- ### NDFU Carbon Sequestration
- Contracts will be written for 5-6 years with penalties for early withdrawal.
  - Carbon credits earned each year will be priced early in the next year so producers will not lock in prices for future credits.
  - Contracts will be written with landowners or long-term lease holders. Tenants can participate with agreement from landlord.
  - Producers will be paid the amount of the CCX payment annually less 10% service fee to NDFU.
  - 20% of each annual payment held in escrow until the end of the 5-6 year contract to insure contract performance.
  - Same contracts will be used for all aggregators.

- ### Future Potential?
- Low prices for stored carbon may not cause much demand immediately
  - Depending on US political climate and concern for environmental issues will determine success of this project
  - North Dakota has about 30 million acres of cropland, 15 million acres native prairie and grasslands, and 2 million of acres of wetlands, and not many acres of forest.
  - The other 4 states have a wide range of potential cropping, rangeland, forestry, and manure management projects
  - Realistically, even if we could achieve enough income to pay real estate taxes, that would be a huge impact to rural economies. (\$3-10 per acre)

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