

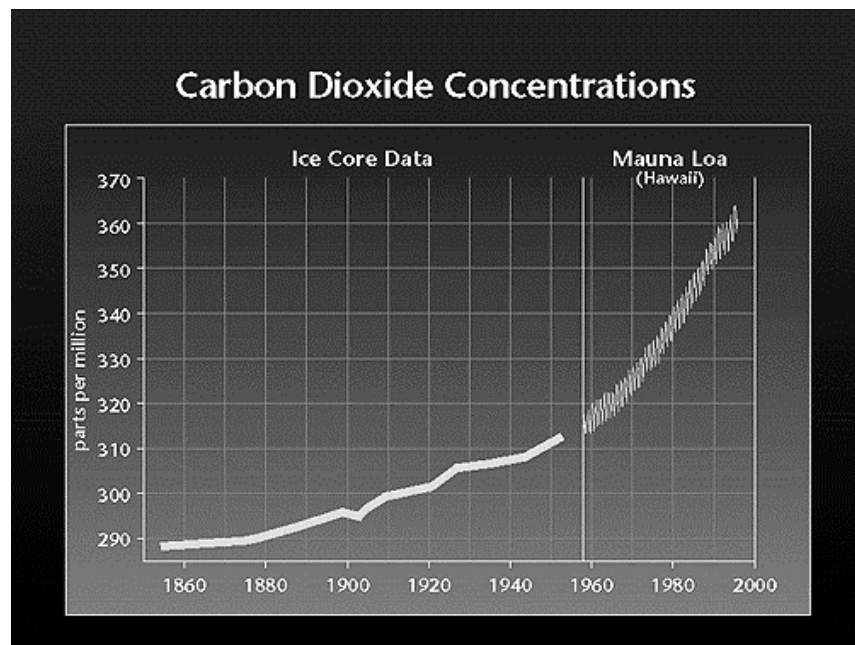
## Developments in Canada's Carbon Credit Market System.

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For those acquainted with the game of chess, government policy development seems to be very similar to this game except the rules are being made up, in part, as the game is being played. There is not the action of a hockey game but deliberate moves made after considering known options. In trying to develop a carbon credit trading system in Canada, there are numerous stakeholders trying to influence the game rules to their own advantage. For eight years the SSCA has put forward ideas and concepts that we feel would be workable in the real world, create incentive for farmers and to protect the value farmers could generate for Canada as Canada strives to meet its Kyoto commitments. For those who are familiar with Carbon Credits, please skip ahead to "SSCA Activities on the C File" to see the current information available at the time of writing. For those who are new to the "Carbon Portfolio", please read on for a brief background on this issue.

### The Kyoto Protocol

Current science has been identifying significant changes in earth's climate systems. These changes are being attributed to the growing concentration of greenhouse gases (GHG) in our atmosphere. The concentrations of GHG's have been rising dramatically in the last 100 years as more and more countries become industrialized and the use of petroleum-based energy grows. Current GHG levels are significantly higher than any in the last 150 thousand years.



The Kyoto Protocol is an international agreement with the aim of stabilizing GHG levels in the atmosphere that would prevent dangerous man made changes in Earth's climate. The objective is for 55 industrialized nations, having 55% of targeted emissions ratify the protocol and reduce their emissions to 6% below 1990 levels. Canada ratified the protocol in 2002. With Russia's

ratification in November 2004, The Kyoto Protocol will come into force February 16, 2005. Kyoto's first commitment period is from 2008 to 2012.

What does this mean to Canada? Assuming a business-as-usual economy, Canada would miss its commitments by 238 Million tonnes/year or by over 40%. Some industry analysts feel this is underestimated. The anticipated cost to Canada is \$33-50 Billion per year.

Bringing it closer to home, what will this mean on the farm? The Kyoto protocol will have direct impacts on the farm's bottom line and our management practices. Production costs, especially in fertilizer, pesticides, and transportation, will all increase as costs are past on to the price taker. Management practices too will be influenced. These include fertilizer application, manure storage and application, and feed ration management. Fortunately, research is showing changes in farm and livestock management practices to reduce GHG emissions usually also result in increased productivity.

**Canada needs Agriculture's Potential.**

To meet Canada's commitments to Kyoto, two methods are available. They include:

1. Emission reductions at the source (ERU), and
2. Biological removal (creation of carbon sinks)(RMU).

Canadian agriculture produces approximately 10% of Canada's total GHGs. The GHGs of concern are Carbon Dioxide (CO2), Methane (CH4) and Nitrous Oxide (N2O). Adopting Beneficial Management Practices (BMP) will allow the producer to reduce his GHG emissions. Table 1 highlights the sources of these gases and what BMP's could be utilized to generate reductions. Once adopted, the BMP's create a permanent reduction in emission levels. Because the reductions are permanent, credits generated from these practices could be offered as a commodity in a market place. How these ERU credits generate value is described shortly.

Table 1 Ag GHG sources and BMP's for mitigation.

<b>GHG</b>	<b>GWP*</b>	<b>Source</b>	<b>BMP</b>
CO2	1	Soil OM	Shift to direct seeding, minimal soil disturbance
CH4	21	Manure, Cattle	CH4 collection and burning, cattle rations supplements
N2O	310	N fertilizers, Manure	Application at time of seeding Incorporation during application

\*GWP – Global Warming Potential

The second method is to remove and store CO2 through the creation of Carbon (C) sinks. Plants remove CO2 from the atmosphere and accumulate it as organic matter in the soil. In agriculture, the adoption of practices like direct seeding or the planting of permanent grass cover creates and maintains organic matter so long as the management practice is maintained. Storage however is not permanent. The C sink can be destroyed by reverting to tillage or perhaps by changes in climate. It is because of "non-permanence" that C sink credits need to be treated differently than emission reduction credits. Should a farmer sell C credits from a sink, treating them like a permanent credit, the farmer would have a permanent liability to maintain that C sink or risk

going to the market place to purchase replacement credits should the C sink be destroyed. The SSCA has put forward the concept of “leasing temporary storage” of carbon and deriving value for the farm in that manner. Because these are temporary credits, they would trade at a discount to permanent credits.

To aid various industry sectors in meeting their national obligations, Canada is developing a carbon credit trading system. A simple analogy is as follows. Company ABC and XYZ, through their manufacturing processes, each generate 100 units of GHG emissions. To meet Canada’s Kyoto commitment, they must each reduce their emissions by 6%, that is, to 94 units. ABC Company adopts new management practices but is able to reduce their emissions to only 98 units. XYZ Company invests in new technology and is able to reduce its emissions to 90 units. XYZ Company could sit on its “extra” reductions (credits) or it could take those credits to a market place and offer them for sale. Companies like ABC would create a demand for these credits and would offer to buy the credits so long as the bid price is below the cost of any penalties the government would impose on ABC Company.

Perhaps, ABC Company is very close to implementing its own new technology but cannot meet the Government’s deadline. ABC Company could go to a group of farmers and offer to lease temporary credits until it can meet its own commitments. ABC Company meets its national commitments at a lower cost, farmers receive a source of income and the farmer does not have a liability beyond the terms of the lease agreement.

Why is Canada interested in C sink credits? As mentioned earlier, Canada, without a plan, could miss its Kyoto commitment by a projected 238 Mt/year. Current national direct seeding adoption rates are around 25% (see Figure 1). Should adoption rates increase to 80%, agriculture could create well over 20% of Canada’s requirements to meet Kyoto (assuming a sequestration rate of 1 t/ac/year). The bottom line, Canada will have to acquire fewer carbon credits from an international market. Current European C credit values are trading at approximately CAD\$10. This value is three years before the first commitment period and eight years from final deadlines.

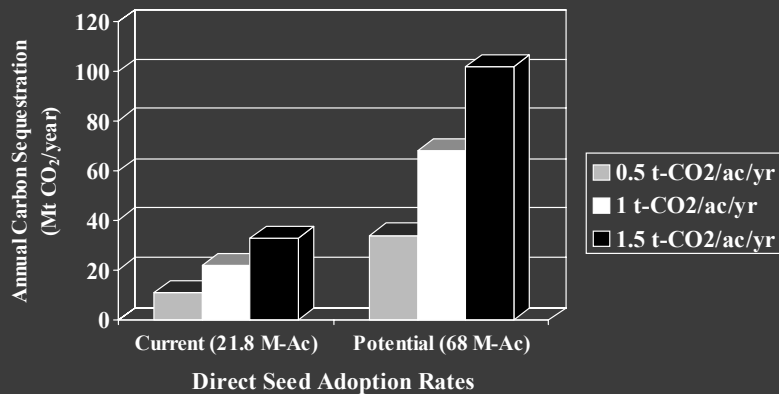
### **SSCA Activities on the C File.**

The following is a list of the more significant activities conducted by the SSCA in the last 12 months including:

March 04 Reviewed and declined participation in the PERRL initiative. This is a government sponsored learning initiative meant to develop knowledge, expertise and technology related to reducing GHG emissions. The development of a carbon credit trading system is one component to Canada’s Kyoto action plan. Agricultural C sinks are a significant component of a trading system. Upon careful review of the documentation and inquires responded to, the SSCA declined to participate. The principal reasons for not participating, related to issues of liability for “temporary credits” needing to be “permanently” maintained and the requirements that new credits be generated by incremental activity. This promotes the notion of multiple pools of credits, which would not be workable on a national scale.

Figure 1.

## Annual Sequestration for both Current and Potential Adoption using Three possible Sequestration Rates



August 04 Offset Working Group Meeting in Saskatoon.

The SSCA together with its partners from ACTS, ManDak, and SCCC met for informal discussions with high level federal officials on the development of a workable carbon credit trading system for Canada. Federal representatives came from Environment Canada, National Resources Canada, and Agriculture and Agri-food Canada as well as provincial representatives from Alberta and Saskatchewan. The meeting facilitated the exchange of ideas on trading system development and was felt to be very successful.

October 04 USDA–USEPA Stakeholders Views on Climate Change Policy.

At the invitation of the USDA and EPA, SSCA staff attended and presented SSCA views on how a workable C credit trading system would be designed.

November 04 USDA – USEPA State of the Carbon Cycle.

John Bennett accepted the invitation to present SSCA views, to a group of scientists, considerations necessary to create incentive and commitment of farmers to participate in a C credit trading system.

December 04 PERRL 2 Announced.

A second round to the PERRL initiative was announced and, at the time of writing, is under review. Barring any unusual liability issues or requirements, the SSCA will submit a proposal to undertake a contract to store C for a set period of time. The deadline for submissions is February 3, 2005. More details will be available at the time of the conference.

January 05 Natural Resources Defense Council (NRDC) Meeting.

The NRDC is an American association of producer groups, non-governmental organizations, and ag industry representatives that meet on a regular basis to discuss policy issues related to agriculture. The role of C sinks and the trading of C credits in the future of American agriculture is now becoming of interest. This meeting provided an excellent opportunity to network with our American neighbours and to influence policy in a direction beneficial to farmers on both sides of the border.

Early 2005    Lobby effort in Ottawa.

Now that Kyoto is coming into force, Canada must make decisions on how to proceed with plans to meet its commitments. This may be the last major opportunity to influence C credit trading policy. Plans are being made to meet with influential Ministers, Senators, and Ag Caucus members of the different parties in addition to high level bureaucrats developing Canada's action plan to Kyoto.

### **Current SSCA Concerns on C Credit Market Development.**

Concerns the SSCA have identified include:

1. Creation of a Price Assurance Mechanism (PAM),
2. Limitation of C sink credits to a domestic market,
3. Use of coefficients to generate C credits,
4. Baseline establishment and re-assessment,
5. Reduction of emission reduction obligations,
6. Over emphasis of C sink "non-permanence".

#### **Price Assurance Mechanism**

The implementation of PAM would create a price cap to domestic Large Final Emitters (LFE). The value is rumoured to be \$15/t. This would effectively place a price cap on a domestically traded C credit. In addition, because C sink credits will be traded at a discount to permanent credits, LFE's could use the domestic PAM price to create artificially low value for temporary credits.

### Limitation to Domestic Markets

The limitation of C sink credits to the reduced demand of a domestic market will result in reduced value to the producer. In addition, the reduced number of buyers would limit the efficiency of price discovery on the market (i.e. Flax on the WCE).

### Use of Coefficients

On the plus side, using coefficients to calculate generation of C credits will greatly reduce administration costs, there is the risk that the Government of Canada (GOC) will use a high coefficient for international accounting and a low coefficient for domestic accounting. This will strip away producer created value while leaving him the cost burden of Kyoto.

### Baseline Establishment and Re-assessment

Baselines refer to when Canada starts to counting sequestered tonnes of C. International Kyoto Baselines are set in 1990. The GOC is proposing 2002. In effect, the GOC will strip away sequestered C to use for the “National Benefit”.

Management practices are under risk of reassessment every second commitment period. The GOC position is “If direct seeding becomes the industry standard, why should we continue to pay?” This position ignores the value of sink maintenance and locks the producer into a production practice.

### Reduction of Emission Reduction Obligations

Canada as a whole, and various sectors of the economy are going to have a difficult time meeting their Kyoto commitments. Should the various economic sectors successfully lobby the GOC for leniency, this could reduce demand, and therefore value of C credits on the market. Ultimately the Canadian taxpayer will pick up the cost of Canada not meeting its commitments.

### Risk of Non-permanence.

The GOC is ultimately liable if a C sink reversal occurs and the GOC is uncomfortable with this. For temporary C credits to be successfully utilized, there must be on going incentive for producers to utilize Beneficial Management Practices (BMP). So long as the BMP is maintained, the sink is maintained barring a change in climate. To aid in mitigating risk, a form of insurance could be created.

### Conclusion

The Agricultural community has a unique opportunity to aid Canada in meeting its Kyoto commitments. The SSCA, along with its partners, have consistently put forward policy proposals that would facilitate the creation and maintenance of C sinks. The fundamentals to a successful C sink credit trading system must recognize that it is the producer’s actions that create and maintain Ag soil sinks and that any value generated by the C sink must accrue to the producer creating the sink.

The end game is at hand. The SSCA looks forward to your continued support as we try to achieve a successful conclusion.