

FAACS Regional Pilots Summary Report

**Draft
Feb. 14, 2005**

Table of Contents

Introduction.....	3
The FAACS Initiative.....	3
Afforestation Pilots.....	4
Background.....	4
Objectives of the FAACS pilots.....	5
Description.....	5
Methods and Results.....	6
British Columbia.....	6
The Prairies.....	9
Ontario.....	12
Quebec.....	16
The Maritimes.....	Error! Bookmark not defined.
Summary.....	19
Bibliography.....	20

Introduction

On August 12th, 2003, the Government of Canada announced the details of an investment of over \$1 billion towards the implementation of the Climate Change Plan for Canada. As part of this investment, Natural Resources Canada's Canadian Forest Service (CFS) received \$20 million over two years to demonstrate and assess the potential role of fast growing plantations to help address climate change. The Forest 2020 Plantation Demonstration and Assessment (PDA) Initiative has been evaluating and developing options that could attract investment, both internationally and domestically, into future Canadian plantations, by taking advantage of the combined benefits of both wood fibre and carbon values. The initiative is also establishing a series of plantation sites to test and improve the biological information and demonstrate that fast-growing trees can help offset greenhouse gas emissions.

In addition, under Action Plan 2000, the Feasibility Assessment of Afforestation for Carbon Sequestration (FAACS) initiative has been exploring the feasibility of large-scale afforestation as an effective response to Canada's climate change commitments. Through the FAACS initiative, efforts have been underway to fill key information needs on afforestation in Canada, and to build the capacity to meet our Kyoto Protocol reporting requirements for afforestation. Current work efforts include: collecting information on past afforestation activities and future potential activities; assessing policy issues including design, mechanics and potential incentive structures; establishing a network of afforestation pilots to test private landowner's interest and participation in afforestation; and, developing afforestation carbon accounting tools.

These two initiatives have now been combined under one umbrella, in order to explore the goal of increasing afforestation in Canada. This report summarizes the findings of the FAACS afforestation pilots.

The FAACS Initiative

With ratification of the Kyoto Protocol in December 2002, Canada committed itself to reduce greenhouse gas (GHG) emissions to 6% below 1990 levels, once the Protocol comes into force, over the 2008 – 2012 period. A portion of these GHG emission reductions can be achieved through increased carbon sequestration in forests. In order to understand the potential scope of afforestation in meeting our goals, the government of Canada started the Feasibility Assessment of Afforestation for Carbon Sequestration (FAACS) under Action Plan 2000.

The recognition of carbon sequestration by forests in the Kyoto Protocol creates the potential for forestry activities to contribute to Canada's efforts to achieve our Kyoto target. Currently, forestry activities such as afforestation, reforestation, and deforestation (ARD) are included in the Kyoto Protocol under Article 3.3, which allows for the use of carbon sequestration as a means to offset GHG emissions. Although definitions for the

ARD activities are still being negotiated, for the purposes of the Kyoto Protocol it is likely that under all possible definitions for afforestation, lands targeted under the FAACS initiative would be acceptable.

The FAACS initiative is the result of the analytical work jointly undertaken by the Forest Sector Table and the Sinks Table. The Forest Sector Table Options Report provided an assessment of afforestation and concluded that it was an important carbon sequestration option. However, due to various uncertainties surrounding ARD and information gaps it was concluded that a phased approach to afforestation would be conducted. The initial phase is essentially a preparatory measure intended to evaluate whether a large-scale national afforestation effort is feasible and what a potential large-scale program would involve. A subsequent phase, implementation of a large-scale afforestation program, would be pursued if the results of the first phase assessment proved to be favorable.

As a result, the FAACS initiative includes a series of projects designed to assess the feasibility of large-scale afforestation projects as an effective means of addressing part of Canada's Kyoto targets. FAACS is primarily focusing on private landowners, and aims to fulfill its mandate through land assessment, information development, demonstration pilots and other linkages.

Afforestation Pilots

Background

Over the last twenty years, the CFS has been involved in a number of tree planting programs, from the traditional cost-shared activities on public and private lands under the FRDAs to the more community based and smaller scale projects under the Tree Plan Canada Program. Whereas the goals for tree planting under the FRDAs were primarily economic in nature, those of TPC were primarily environmental and secondarily social. In each of these programs, the mechanisms for management and delivery were different and to a great extent reflected the respective policy goals of each.

In examining the potential of afforestation to contribute to our Kyoto targets there are a number of dimensions under active assessment, including past and future contributions, technical issues around measurement and monitoring, issues around ownership of carbon and domestic trading and issues and opportunities around expanding afforestation. The potential for expansion of afforestation in Canada is related almost entirely to incentives...the more lucrative it is (regardless of who pays, e.g. the private sector or the public) the more trees will go in the ground. There remains a lot of work to do around the issues of incentives and program delivery mechanisms, and the sensitivity of combinations of these to tip the balance for landowners or investors toward putting trees on private lands.

The dimension that is currently a consideration in examining afforestation is the potential dollar value of carbon. Whereas in the past CFS has experience with tree planting programs for economic and broad environmental purposes (non-quantified), this new dimension allows for the quantification of another benefit from tree planting that may attract new interest and change some of the traditional incentives (i.e. government pays) of the past. It is likely that, if the afforestation option is included in a Kyoto or non-Kyoto plan, the government will be looking for novel mechanisms to finance and deliver the activities so that the cost, risks and benefits are shared among private and public sectors and so that the carbon dimension is clearly visible in financing options.

Assessing some of these incentives is a key part of the demonstration dimension of the FAACS initiative. Specifically, the pilots aim to show how landowner and partner participation changes in response to different program partnership and delivery mechanisms. This offers the opportunity to introduce and test run some new and creative models that attracts landowners and investors that have some interest in tree planting, climate change and the emerging carbon market.

Objectives of the FAACS pilots

The primary policy objective of the afforestation pilot component of the FAACS initiative is to assess potential afforestation interest and participation. While some regions have expanded the scope of their pilots, the primary objectives for all regions are listed below. More specifically, through evaluation and demonstration the afforestation pilots:

- Test the design and mechanics of incentive options.
- Assess a variety of potential partnership arrangements and evaluate effectiveness.
- Examine the levels of participation of partners across the diverse range of partnership models.
- Offer recommendations on cost effective models that maximize partner participation while delivering early carbon returns.

Description

The Afforestation Pilots have used, and built upon, a survey of landowner surveys performed by Environics (2003). To supplement this survey, five afforestation pilots were undertaken across Canada as part of the FAACS initiative. The regional CFS forestry centres have led the development and implementation of the afforestation pilots in their respective regions. In partnership with provinces, industry and landowner associations, the FAACS pilots have been designed to test the responsiveness of landowners to a range of incentives, in order to expand forest cover in Canada for climate change and economic benefits.

The pilots have taken slightly different approaches to evaluating what incentives would be needed to encourage landowners to plant trees. Most research undertaken, however,

has been in the form of surveys and stakeholder workshops. These consultations were designed to both inform landowners of the goals of FAACS and to solicit their ideas and concerns surrounding afforestation, as well as investigate significant factors affecting afforestation and the level of interest in afforestation. The main, recurring themes from these discussions include concerns over: property rights, tax incentives, disincentives through other programs/policies, availability of technical services, ownership of carbon credits, commitment period, and (resoundingly) cash subsidies for start-up costs.

The following provides a brief description of the afforestation pilots undertaken by each region:

British Columbia Pilot – The Pacific Forestry Centre has been working with the Federation of BC Woodlot Associations to determine the level of interest in afforestation, exchange information, and solicit input from landowners in the Prince George area.

Prairie Pilot – The Northern Forestry Centre has worked with the Manitoba Forestry Association to examine current and past tree-planting programs. Prairie-wide landowner focus groups were conducted to assess their attitudes towards afforestation and understand the required incentives for the delivery of successful afforestation program.

Ontario Pilot – The Great Lakes Forestry Centre and Eastern Ontario Model Forest worked in partnership to elucidate landowner attitudes and concerns towards afforestation and explore the use of incentives to encourage afforestation on rural lands in southern Ontario.

Quebec Pilot – The Laurentian Forestry Centre, along with a number of partners from academia, the provincial government, demonstration site owners and other groups, have been establishing experimental sites for afforestation with hog manure application to solicit interest of regional stakeholders in this unique approach to promote afforestation and dispose of animal waste.

Atlantic Canada Pilot – The Atlantic Forestry Centre has been working with Nova Scotia Power Inc. to examine the potential for afforestation on private lands along and adjacent to Nova Scotia Power's power line right-of-ways in order to determine landowners' receptiveness to afforestation.

Methods and Results

British Columbia

The Federation of Woodlot Owners commissioned Harold Reedy to prepare a report on options for aggregating and selling afforestation carbon credits from small landowners. The process involved two questionnaires and a facilitated workshop, along with input from several experts across the country.

Woodlot Owner/Association Questionnaire

Questionnaires were distributed by the Canadian Federation of Woodlot Owners to the various Canada-wide provincial woodlot owner related organizations: woodlot-owner associations, woodlot-owner marketing boards, etc. Thirteen questionnaires were completed and returned from six provinces, providing woodlot organizations' views on forestry carbon credit aggregation and incentives for afforestation. These woodlot organizations consist of landowners who are already managing trees.

These organizations and associations were unanimous in stating that their existing organization (or the formation of a new affiliated cooperative or corporation) would best suit their landowner members to assist regional aggregation of carbon credits. Some of these organizations have existing infrastructures used to aggregate and sell their members' logs (regional marketing boards).

Agroforestry Producer and Buyer Questionnaire and Workshop

In addition to the Woodlot Owner/Association Questionnaire, in the fall of 2002, an Agroforestry Producer and Buyer Questionnaire was circulated throughout British Columbia for the purposes of developing an Agroforestry Strategic Plan for BC. One hundred and seventy-two producer surveys were returned. The survey and report was completed by SYLVIS Environmental. Portions of the survey data have been relevant in understanding the profile of BC landowners and their perspectives related to growing trees, and to carbon credits.

From input provided from landowners, the BC report identified the following landowner motivational factors that would be key factors for motivating landowners to plant trees:

- Awareness of the government's afforestation program.
- Better awareness of the economic, environmental, and social benefits of trees.
- Identification of personal and family long-term benefits of growing trees.
- Identification of the financial risks and rewards associated with growing trees.
- Anticipation for nil to low capital costs for planting trees (personal \$).
- Assurance of a simple and clear agreement between landowner and funding agency / investor.
- Agreement term of no longer than 15 years.
- Assurance of minimal to no strings attached within legal agreements.
- Direct participation in decision-making; i.e., tree species selection, etc.
- Assurance of minimal to no infringement on landowner rights or freedom to manage.
- Assurance of minimal and simple paperwork for the landowner.
- Assurance that extension services will be available for technical assistance / advice.
- Assurance of stability of government program(s) associated with the plantation.
- Assurance that growing trees will not raise property taxes.
- Assurance that expenses will be deductible from off-farm or off-woodlot income.

Carbon Workshop

To supplement this questionnaire, a workshop was held in Prince George, BC in March 2003 entitled "Cashing in on Carbon Credits." Over 100 private landowners, First Nations, forest & other industry, government, & non-government, and utility companies attended and participated. The majority of attendees were rural landowners.

BC landowners attending the Prince George 2003 carbon workshop had many more questions than there were answers available about the business side of afforestation carbon credits. Although lengthy, the BC report provides landowner readers with an easy to understand overview of the business as viewed today by carbon credit buyers and others.

From participants' input during the workshop, several common themes emerged in the BC report:

- The concept of a carbon sequestration program was appealing to landowners.
- Participants felt that it was important that a carbon sequestration program not infringe on landowner's private property rights.
- There must be clarity and certainty around the definition of land eligibility for carbon sequestration.
- There was a demand for monetary / business analysis of carbon sequestration projects. (Is it good business to grow wood and carbon credits on their private land?)
- There should be a free market for carbon credits, without interference by government.
- There should be two distinct components to a carbon sequestration program: a) establishment and growth of carbon crops, and b) the measurement and sale of carbon credits.
- There must be good communications by all parties at all levels regarding all aspects of Kyoto and the carbon sequestration program. (There are currently many more questions than answers about an afforestation program).

Overall Conclusions of the BC Report

The BC report concludes that in addition to sequestered carbon helping to mitigate climate change, tree-planting provides various other environmental, social, and economic benefits to landowners, communities, and to society as a whole. These other benefits far exceed those of sequestering carbon in most people's eyes, but are often difficult to measure in terms of return on investment. Landowners need to be better informed of the other benefits to planting trees.

The report also suggests that landowner organizations such as woodlot associations and provincial woodlot federations have experience in planting trees and have the trust of landowners. Government could provide these organizations with financial support to

promote and encourage tree-planting throughout Canada. As well, these organizations could assist with the delivery of government funded afforestation programs.

Aggregators will be selected based on landowner's trust of the aggregator to look after their best interests, and the ability to conduct aggregation activities at a low price. Landowner organizations such as provincial woodlot federations or agriculture federations meet this aggregator selection criterion for trust and representing landowner's interests, and may already be helping deliver afforestation programs. These landowner organizations operating at a provincial scale are good candidates to follow through with aggregating and selling their landowner members' carbon credits.

For reducing aggregation costs, economy of scale is an important factor. Therefore, a national body providing centralized administration may be needed. For example, the Canadian Federation of Woodlot Owners has shown preliminary interest in forming an affiliated, but independent, corporation to provide national, centralized administration. In theory, a further step to improve the economy of scale is for several national organizations such as the Canadian Federation of Woodlot Owners, the Federation of Agriculture, and the Canadian Cattlemen's Association to form a corporation for the purposes of aggregating both forestry and agriculture credits.

There are other business factors that can influence who become an afforestation carbon credit aggregator. For example, in the situation where lowest aggregating price becomes the primary selection criterion, then already established national or international aggregators may have competitive advantages. Aggregators of landfill methane gas credits and agriculture credits will become established several years in advance of large volumes of afforestation credits being available to aggregate. New start-up aggregators directly, or solely, associated with afforestation credits may not be able to provide aggregation services as competitively as those aggregators who are already established.

Due to marginal economics for landowners, it is expected that the price of aggregation services will be a key selection criterion used by landowners. The competitive marketplace will likely be used to determine who will become afforestation aggregators.

The Prairies

The Manitoba Forestry Association, a non-profit education organization based in Winnipeg, Manitoba, established a collaborative research partnership in November of 2002 with the Canadian Forest Service (Northern Forestry Centre) in Edmonton, Alberta, to deliver a FAACS Pilot Project for the prairies.

The Prairies FAACS Pilot Initiative was designed to develop, test and evaluate the design and mechanics of potential afforestation incentive options for private landowners. This project became an extension of the landowner focus group sessions that the Manitoba Forestry Association conducted in 2002/03. The overall objectives of the first focus group sessions held in 2002/03 were: 1) to determine landowner attitudes towards

participating in an afforestation program for the purpose of carbon sequestration, and 2) to determine what characteristics the program should have to attract landowner interest.

In the initial round of focus groups held in 2002/03, seven focus groups were held throughout the Prairie Provinces: three were held in Manitoba, two in Saskatchewan, and two in Alberta. Generally, each focus group site was the most central location for participants that had to travel from up to two or three hours away.

The participants were selected on the basis of their geographic proximity to the selected sites and their diversity in terms of farm size, farming type, interest in afforestation, and previous personal experience with forestry-related issues. There were also participants who were not landowners, such as technical experts in afforestation, woodlot management, local municipal officials, local agrologists, and local agricultural representatives.

For the more recent round of focus groups, which occurred in February of 2004, the participants who attended the earlier focus groups were contacted once again. These participants were informed that the project that they previously participated in had evolved and had reached its next planning phase. The participants were invited to attend one of three workshops that would be held in the Prairie Provinces.

The objective of these focus group sessions was to identify the incentives that would encourage landowners to participate in an afforestation initiative on their land. Each of the three focus groups was run identically to the others, and began by asking the participants to explain their primary interest or reason for attending the session. This often elicited the participant's overriding rationale for attendance and made subsequent comments and concerns raised by participants easier to contextualize and interpret.

The FAACS planning group then presented participants with a series of scenarios representing possible incentive mechanisms, and sought landowners' criticisms, opinions and comments. Throughout each of the group sessions, participants were encouraged to contribute their response to a number of different incentive options and packages that were designed with the intent of eliciting their participation in a proposed afforestation initiative.

Because of the purposeful sampling method and the relatively homogeneous nature of the participants, however, results from the focus groups may not be representative of the larger population of private landowners in the Prairies. Participants were selected based partially on their experience with afforestation or their interest in becoming involved in afforestation. Landowners who might be skeptical of an afforestation program were excluded from this portion of the study.

While landowners who attended did express an interest in afforestation, there were a number concerns that these participants indicated would need to be addressed before afforestation would be a viable venture for most landowners:

- The participants were open to carbon credits if they would truly have the capacity to benefit from them.
- The participants repeatedly commented about the amount of risk involved in an afforestation venture.
- It was stated that many landowners might be interested in afforesting small areas of land, at least as an initial trial.
- Landowner participants commented repeatedly that the federal government should make it worthwhile for landowners to keep the trees already in existence on their land.
- A barrier to some participants was the impression that their cooperation would be a means for large industrial polluters to continue polluting.
- Many participants were enthusiastic about afforestation not because of business opportunities, but because of the environmental and aesthetic benefits that would accrue from doing so.
- There was uncertainty regarding how property assessment and tax rates would be affected by afforestation.
- Landowners commented on their lack of knowledge in regards to growing trees.
- A federal initiative will need to be flexible to attract landowners to afforestation.
- An economic analysis of afforestation would provide landowners with a substantive source of information from which to make their decision.
- These participants were open to the idea of partnerships between private landowners and industry.

The participant landowners, who contributed feedback into the process of identifying incentive mechanisms that could attract landowners to an afforestation initiative, also provided a number of recommendations as part of their feedback:

- Carbon credits should be traded for their market value, and not held to a low price for the benefit of industrial polluters.
- Trees should be considered as an insurable crop.
- All landowners interested in afforestation should qualify for federal incentives, regardless of the amount of land they are willing to commit.
- Incentives should be provided to discourage the amount of deforestation that is presently common among landowners.
- The federal government needs to ensure that polluters are reducing emissions.
- Ensure that landowners concerned with solely environmental and aesthetic values in relation to afforestation are compensated and allowed access to the same incentives as others.
- Create a tax environment that is conducive to landowners interested in afforestation.
- Provide local and accessible information and assistance for landowners pursuing afforestation.
- Ensure that any federal initiative for afforestation remains flexible, allowing for regional and personal needs and situations.
- Conduct an economic analysis of afforestation.

- Provide landowners with a choice of incentive packages.

Ontario

The FAACS Pilot for Ontario was developed through a series of focus sessions on: landowner incentives, policy barriers in Ontario and the Carbon Marketplace. In addition a series of surveys was undertaken including experts and key stakeholders that allow for an overall understanding of the market place for Offset Credits from afforestation projects.

Workshops

The Eastern Ontario Model Forest and several partners hosted a series of workshops across southern Ontario in November of 2003. The primary goal of these sessions was to address issues surrounding establishing new forests in Ontario to address Canada's Kyoto commitments. The Focus Sessions heard from a broad spectrum of rural landowners, forest and agriculture sector, carbon brokers and industry surrounding three broad categories of issues:

- Landowner Incentives - "What Incentives are Required to get Trees in the Ground?"
- Policy Barriers - Overcoming Policy Barriers to Afforestation on Private Lands in Ontario
- Offset Credits from Afforestation, Customers Needs and the Investment Challenge (Ontario)

Landowner Incentives

Utilizing a network of provincial and regional organizations actively involved with rural landowners across southern Ontario, 100 landowners were invited to participate in one of the three workshops held in Kemptonville (eastern Ontario), Barrie (south central Ontario) and Woodstock (south western Ontario). Participants were invited based on a criterion of having available open land (agriculture and/or rural vacant lands) and who had an interest in establishing trees on these lands. It should be noted that although individuals from both the farming and forestry communities were invited to attend all sessions, attendees were predominately from the forestry community (i.e. those involved in forestry organizations and/or active in planting).

The primary goal of the Ontario sessions was to hear from a broad spectrum of rural landowners about the type of incentives it would take for them to become involved in a potential afforestation program. In addition, their views on afforestation agreements, offset credits, and opinions on real or perceived issues that may arise by undertaking such an initiative, were also sought.

Landowners indicated there was considerable interest in participating in a potential afforestation program. However, during the Landowner Incentive Focus Sessions, landowners stated that a number of questions would have to be clarified by any program/delivery agency prior to an agreement to participate. These include:

- Long-term program stability.
- Delivery of any program by a locally based agency or organization.
- Respect of landowner's management objectives and property rights.
- Financial Assistance.
- Benefits that are competitive with other potential land use opportunities.
- Landowner ownership of the initiative through a cost-sharing approach.
- Favourable Property Taxes.
- Harmonization of Provincial and municipal government agriculture and forestry policies.

Moreover, and due to the different roles and responsibilities of the parties involved in establishing a plantation to produce both wood and offset carbon credits, participants felt that it is likely that two separate agreements will be needed. One agreement for the establishment and growing of the trees, and a second agreement covering the sale of offset credits. During the Landowner Incentive Focus Session discussion surrounded other considerations that need to be taken into account in the development of an agreement. These include:

- Landowners will be more receptive to an agreement that is simple, written in plain language.
- Having any agreement registered on title caused concern.
- The roles and responsibilities of all parties need to be clearly spelled out.
- Landowners indicated a preference for a flexible agreement that was shorter in length.
- Landowners felt that the agreement should offer flexibility in the ownership of the wood and offset credits.
- Regardless of the length of the agreement, an exit clause, clearly outlining the penalties involved, is required.
- A flexible agreement offering an array of different arrangements would be much more attractive to landowners.
- The management plan must be harmonized with other plans currently being used by landowners.
- Responsibilities and penalties for both parties must be clearly defined in the agreement.
- An arbitration process to resolve any disputes should be provided.

Policy Barriers

The "Policy Barriers to Afforestation in Ontario" Focus Session was held on November 5th, 2003 in Cobourg, Ontario.

The goal of the session was to identify the most significant barriers to private land afforestation and to determine strategies and actions to overcome these barriers. Throughout the session there was active discussion of the barriers. This session was attended by approximately 50 individuals from a wide variety of interested groups, including individuals from both the forestry and agriculture sector involved in private land forestry, as well as representatives from academia and environmental groups.

By synthesizing historical information and the stakeholder input from the FAACS Policy Barriers Focus Session, it was found that the most significant barriers to afforestation on private lands in Ontario are:

- A lack of long-term commitment from the government.
- Unfair taxation methods that are acting as a disincentive to owning forested land.
- A lack of recognition for afforestation and green spaces in municipal planning.
- The present seed and stock availability crisis in Ontario.
- The fact that landowners are responsible for the full cost of environmental services to society.
- The fact that there is a lack of public civic duty and/or values with respect to the environment.

Offset Credits from Afforestation

The purpose of the Carbon Focus Session was to look for common ground, a potential business structure, and key business aspects for landowners, Carbon brokers and Large Final Emitters all interested in afforestation projects for the purposes of carbon sequestration. The session participants were comprised of 50 individuals from the forestry sector, carbon brokers and LFEs. This session was convened November 19, 2003 in Toronto, Ontario.

The session concluded that the primary concern of participants revolved around the issue of risk. Buyers will require assurance that risk management strategies are in place to reduce their exposure to the loss of Offset Credits that they have purchased. This can be done through holding a proportion of the Offset Credits in reserve to protect buyers against unexpected loss. Another approach could be to sell only the Offset Credits contained in the merchantable stem.

Participants also indicated that there will also be a need for Offset Credit aggregation. There are organizations now establishing themselves as aggregators specializing in CO₂e from agricultural and afforestation sequestration programs as well as agricultural emissions reduction projects. These organizations will be able to pool Offset Credits from a variety of projects thus spreading the risk and enhancing the value of their pooled assets. To a degree the choice of type of aggregator depends on the investor. Landowners will want to deal with organizations that they know and trust and believe to be working in their interests. These may be extensions of existing agricultural co-ops or woodlot owners

associations. Institutional investors may be more comfortable working with a specialized and incorporated forest management organization, possibly a forest products company.

The group also noted that any organization established to aggregate Offset Credits from afforestation programs will have an advantage if it is closely linked with the plantation establishment organization.

Afforestation Survey

The Ontario FAACS Pilot conducted a random telephone survey of 375 rural landowners in key areas of Ontario. Regions with low land opportunity costs in Eastern, South-Central and South Western Ontario were targeted, with landowners needing to own a minimum 10 acres (4 ha) of land in order to qualify.

Questions were based on those asked in the National Environics surveys in 2000 and 2003, and the primary aim of the survey was to gauge the interest of rural landowners in a potential tree planting program. The survey also aimed to provide baseline information on both current and future tree planting activities as well as types and sizes of land holdings.

Landowners show a significant level of willingness to participate in an afforestation program and, not surprisingly, have expectations of financial support, reductions in property tax, income tax deductions, and technical assistance with planting. However, landowners want to plant trees that are native to their regions, and they want to own the mature trees. Landowners want to maintain control of their land.

There is widespread awareness of the role of trees in improving air quality and reducing global warming, but there is virtually no awareness of their role in carbon sequestration.

Landowners will respond to incentives, but their concern for flexibility has tended to make them shy away from restrictive long-term deals. Moreover, landowners express a clear preference to work with woodlot/forestry associations and Conservation Authorities, rather than government.

Successful afforestation programs will be flexible and respond to differences among landowners with regard to their ownership motivation and management objectives, the size of land holdings, their occupation and their capacity to cost-share or provide in-kind support.

Opinion Survey of Large Final Emitters (LFEs) in the Oil and Gas Industry

The Ontario FAACS Pilot, in conjunction with the BC FAACS Pilot, also developed a questionnaire designed to find out the views of LFEs on the purchase of Afforestation Offset Credits as a way to meet their GHG emissions reduction target. A group of LFEs, in Alberta, was visited and asked a series of questions. Most of the LFEs questioned were associated with the oil and gas industry.

The Ontario FAACS team reported that there was a general agreement among LFEs that afforestation offset credits suffer from the following disadvantages in the marketplace:

- Many LFEs desire to deal in offset credits developed through projects that are related to their core business.
- Most LFEs do not fully understand the process of carbon sequestration by trees.
- The long time periods required to develop substantial volumes of offset credits through afforestation.
- The perception that offset credits developed through afforestation lack permanence.
- The weight given to this lack of “permanence” will determine the size of any price discounts.

Moreover, there is general agreement among LFEs contacted that there will be a shortage of offset credits available on the domestic markets and that Canadian offset credits will be competing with offset credit products available on world markets. Respondents indicated that Canadian offset credits from afforestation must be cost-competitive, as Canadian LFEs will pay no more than world prices for Canadian offset credits.

Quebec

In Quebec, the FAACS Initiative is being implemented by the Canadian Forest Service (CFS) in conjunction with the Quebec Department of Natural Resources, Wildlife and Parks (MRNFPQ). In 2002, a joint CFS-MRNFPQ coordinating committee selected the proposal of the *Agence de mise en valeur des forêts privées des Appalaches* for implementation of the pilot project in Quebec.

The strategic focus of the pilot project in Quebec takes into account the different perspectives of agricultural and forestry stakeholders, with particular focus on the use of wildlands and the problems associated with spreading liquid hog manure. These issues represent major constraints to the afforestation of wildlands and marginal cropland in Quebec.

The Chaudière-Appalaches region is the area in Quebec most affected by liquid hog manure surpluses, with 8.4 M kg of P₂O₅ according to 2000 Quebec Department of Agriculture, Fisheries and Food (MAPAQ) data. In addition, on June 15, 2002, the Quebec Department of the Environment (MENV) adopted the Agricultural Operations Regulation, which in the medium term will have the impact of increasing pressure on wildlands and deforestation for agricultural purposes, since farmers will need a larger area of land in order to spread liquid hog manure under the new standard, which takes phosphorus rather than nitrogen into account.

Liquid Hog Manure

The main focus of the Quebec pilot project is to test the use of liquid hog manure for fertilizing plantations used to produce durable goods (especially lumber and veneer products, without excluding a portion for papermaking pulp). This approach is intended as an afforestation incentive for hog producers and some owners of wildlands and marginal cropland. In addition to rapid carbon sequestration, this initiative is anticipated to give other benefits, including:

- Reconciling the interests of hog producers and wildland owners.
- Improving the often-deficient fertility of the sites to be afforested, particularly for fast-growing species (hybrid poplar).
- Providing an economically productive use for liquid manure and its by-products while minimizing impacts on the environment.
- Generating benefits over the medium term (15 years) for landowners and industry.
- Helping to combat deforestation associated with the spreading of liquid manure.

A key challenge for the success of this main focus of Quebec's pilot project is to ensure that it is monitored for the next 15 years. After March 31, 2005, the 2003 and 2004 experimental designs will be established, and the Agency, landowner, hog producer and researcher partnerships will be established.

Landowner Survey

The second focus of the pilot project is to collect additional information through surveys aimed particularly at the owners of land that may be eligible for afforestation under the Kyoto Protocol. These surveys seek to gather information on such subjects as:

- The characteristics of the land eligible for afforestation.
- The landowners' interest in afforestation.
- The landowners' interest in new afforestation approaches, particularly the one being tested in the pilot project.
- The issue of deforestation.
- The profile of the landowners.

The Quebec Pilot has now also completed the planning of a survey of wildland owners in the Agency's territory. The planning phase has included the preparation of a questionnaire, data collection from the RCMs, data processing, determination of the population according to three sampling units, and preparation of part of the specifications for the survey firms.

Atlantic Canada

Nova Scotia Power Inc. (NSPI) has partnered with the Canadian Forest Service over several years to conduct a pilot "afforestation/reforestation" project in Nova Scotia. This

project was designed to test partnerships with private landowners, with a view to estimating the carbon-sink potential of existing forestlands, industrial lands and private lands. Working together, NSPI and the CFS have worked to assess Nova Scotia landowners' awareness of carbon sequestration, and the level of interest in taking part in an afforestation initiative. To this end, Corporate Research Associates Inc. (CRA) was commissioned to undertake an Afforestation Study in 2003. The objectives of this study were to:

- Assess Nova Scotia landowners' awareness of carbon sequestration;
- Determine interest levels in participating in an afforestation project in Nova Scotia; and
- Identify which organizations landowners consider most appropriate in implementing such an initiative.

The study consisted of 400 random telephone interviews with Nova Scotia landowners and was administered between March 19 and 22nd, 2003. The study estimated that a sample of this size drawn from the population provides results accurate to within plus or minus 4.9 percent in 95 out of 100 samples.

Results of the 2003 NSPI Afforestation Study indicate that there is widespread awareness of the benefits of trees in relation to improving air quality and reducing global warming. Conversely, there is virtually no awareness of the science of carbon sequestration. Clearly, the language used to promote the plantation of trees will be critical in terms of gaining support of this important issue, and study concluded that the use or promotion of the term carbon sequestration would likely not benefit any afforestation program.

There is, however, a strong recognition among landowners of the importance of their help in improving the environment by planting trees. There is also a significant level of willingness among those surveyed to do so.

At the same time, expectations regarding the technical and financial assistance required to assist those willing to plant trees on their land is somewhat surprising. There are, for example, higher expectations for technical support than financial support with regard to participation in an afforestation program. This would seem to indicate that there appears to be some sense among landowners of shared responsibility for such an initiative.

For example, the most important assistance expected by those willing to plant trees on their land was related to information regarding the choice of species to plant. Conversely, only half of those willing to plant trees expect financial assistance in the purchase of the trees. Significantly fewer expect assistance to either plant the trees or in the long-term management of the trees.

Finally, among those both willing to plant trees and having some level of interest in a national afforestation program (39%) of the landowner population in Nova Scotia, nearly half (45%) would be most comfortable working with forestry or landscaping companies

on such an initiative. An environmental group was the next preferred choice, followed by the government.

Summary

Although the regions approached the FAACS Pilots in different ways, some fundamental, common themes have emerged from landowners. Initially, landowners need to have a better awareness of the economic, environmental, and social benefits of trees, including the identification of the financial risks and rewards associated with growing trees. Moreover, landowners need an assurance of stability of government program(s) associated with the plantation

Once these factors have been established, the take-home message is that a well-designed program, which provides long-term commitment to program participants, respects landowner's rights and management objectives, provides a range of attractive incentives, and utilizes a landowner 'friendly' agreement, is more likely to attract landowner participation.

Some regional landowner differences did emerge, however, notably Maritimers' preference for government aid in the form of extension services, as opposed to grants to cover plantation establishment costs. And differences also occurred within regions or provinces, particularly in response to differences in initial land values. In any case, a national afforestation program will need to take any potential intra- and inter-regional differences into account.

Current barriers to afforestation will also need to be addressed. For example, competing land-use incentives for alternative land-uses, such as agriculture, need to be adjusted, and there must be full recognition, by the government and society, for the value that afforestation provides to society in terms of both market and non-market values. Quantification and identification of lesser-known co-benefits, such as the application of hog manure and municipal waste, or the benefits of recreational land-use, is likely to go a long way in convincing both governments and landowners of the value of planting trees.

Finally, appropriate aggregators, for both carbon credits and for timber supply, as well as delivery agents for services will also need to be identified.

Bibliography

Corporate Research Associates Inc., 2003, 2003 Afforestation Study: Summary Report, Prepared for: Nova Scotia Power Inc. & Canadian Forest Service

Eastern Ontario Model Forest and Natural Resources Canada, Canadian Forest Service, 2004, Overcoming Policy Barriers to Afforestation on Private Lands in Ontario, Focus Session held in Cobourg, ON, In partnership with: Conservation Ontario, Ontario Ministry of Agriculture and Food, Ontario Ministry of Natural Resources, Ontario Woodlot Association, and Trees Ontario Foundation

Eastern Ontario Model Forest and Natural Resources Canada, Canadian Forest Service, 2004, Landowner Incentive Focus Sessions, In partnership with: Conservation Ontario, Ontario Forestry Association, Ontario Ministry of Agriculture and Food, Ontario Ministry of Natural Resources, Ontario Soil and Crop Improvement Association, Ontario Stewardship, and Trees Ontario Foundation

Eastern Ontario Model Forest and Natural Resources Canada, Canadian Forest Service, 2004, A Report on Examining the Feasibility of Afforestation for Carbon Sequestration in Ontario: Landowner Interest and Incentives, Policy Barriers and Investment and Market Conditions Prepared for: Canadian Forest Service, Great Lakes Forestry Centre

Manitoba Forestry Association and Natural Resources Canada, Canadian Forest Service, 2004, Prairie Provinces Pilot: Landowners' Perspectives on Incentive Mechanisms for Afforestation

Reedy, Harold, RFT, 2003, Exploring Options for Aggregating and Selling Afforestation Carbon Credits from Small Landowners, Prepared for Canadian Forest Service, Pacific Forestry Centre, Federation of BC Woodlot Associations, and Canadian Landowners

Reedy, Harold, RFT, 2003, Exploring Options for Aggregating and Selling Afforestation Carbon Credits from Small Landowners: Appendices, Prepared for Canadian Forest Service, Pacific Forestry Centre, Federation of BC Woodlot Associations, and Canadian Landowners

Smith, Ross, in collaboration with the Social Science Research Group Canadian Forest Service & Manitoba Forestry Association, 2003, Tree Planting and Conservation Delivery Organizations, Programs and Projects Across the Prairie Provinces

Szwaluk, Kevin, Manitoba Forestry Association, 2003. Tree Planting and Conservation Delivery Organizations, Programs and Projects Across the Prairie Provinces