Carbon Offsets and Carbon Credits

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This article, along with further information on carbon credits, can also be found on our website at: www.eomf.on.ca. Click Carbon Credits under our Hot Topics menu on the home page. For insight into how the Forest Science Committee is addressing this topic, on our website visit About Us > Committees.

Carbon offsets are greenhouse gas (GHG) emission reductions or removals that are used to counterbalance or compensate for *offset* emissions from other activities. These offsets can be purchased by countries, companies or individuals. The key criterion for an offset is that the GHG reduction would not have already or otherwise happened; it is additional to normal or business-as-usual activity.

The use of carbon credits is an emerging issue which involves landowners and communities in growing trees for carbon sequestration and for additional income while helping reduce the rate of climate change by taking carbon dioxide out of the atmosphere. In this way benefits accrue to the individual, the community and to the wider society through reduction of carbon dioxide in the atmosphere, a driving factor in global climate change.

Carbon credits are received by the landowner in exchange for establishing vegetation which results in high levels of carbon sequestration. These credits are then sold in the open market. The credits are usually based on tree plantings but other actions including enhancement of soil organic matter, perennial grass planting, and underground traps including large bodies of water (riparian and wetland ecosystems) are being studied by policymakers and governments. These actions involve methods of sequestration (including forestry), conservation and planting, steps that the landowner must take (including contracts), verification and implementation.

Offsetting should always be considered as a third step in a strategy to reduce emissions. The first two steps are to reduce emissions internally, either through reduced consumption or improved efficiency, and then to reduce indirect emissions such as enhancing renewable electricity use. Offsetting provides a way to balance out the remaining emissions.

Carbon offsets are considered in the wider concept of global warming or climate change where the major approach to addressing the issue is to effect a reduction in the gases, primarily carbon dioxide (CO_2), through some form of long-term storage.

Offsets are usually purchased for use in a regulated market as a compliance option for capped industries in a cap and trade system. Offsets in the regulated market offer flexibility and lower cost to the regulated industry but must be rigorous to ensure that emission offsets are real so that the emission cap is achieved. Offsets can also be purchased by individuals, businesses, and governments from the voluntary market to achieve carbon neutrality. Voluntary offsetting is also a growing market – one often used by corporations to demonstrate leadership in green branding and environmental awareness. Voluntary offsets are generally viewed as buyer beware commodities that are less credible due to a lack of oversight, fewer widely accepted standards, lower transparency, double selling and lack of verification.

Market mechanisms in general are a broad approach that has been tested for other environment problem areas, most notably that of sulfate/nitrate pollution in northeastern United States. A legislated 'cap' is set and individual polluters have to meet their quotas or buy rights in a regulated market. There are therefore market incentives and market efficiencies that are harnessed to achieve the goal of reducing harmful emissions to the environment. This approach has promise for reducing GHG emissions and many public and private organizations are studying possible approaches to follow.

Generally there are three categories of forestry offsets:
(i) Afforestation and reforestation: planting lands that have not been recently forested such as marginal private land;
(ii) Forest management: enhancing forest management practices on Crown and private land resulting in faster forest regeneration, growth enhancement or through increased use of forest products; and,
(iii) Avoided conversion: conservation actions to prevent site-specific conversion of forests to a non-forested land use such as agriculture, urban or industrial use.

The immediate question, therefore, is: What are the opportunities for eastern Ontario woodlot owners and landowners? At first glance it would seem that there are many opportunities. There is a great deal of Class 3, 4 and 5 agricultural and forest land not currently producing marketable crops which would be suitable for afforestation. Use of these 'empty' lands would also avoid the question often raised of food versus fuel. There is considerable experience and a good knowledge based in the area about which species to plant where and the infrastructure to accomplish planting on the appropriate scale. The science of carbon measurement has developed

to the point where accurate estimates are possible for these 'carbon forests.' The extensive private lands in the region would ensure security of tenure with the necessary civil and legal structure in place.

Ontario's Climate Change Secretariat (CCS) and the Ministry of Environment, along with representatives from the Ontario Ministry of Natural Resources (OMNR) and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), are working to identify a path forward on a provincial offsets system and how Ontario may proceed with protocol development and associated activities. OMNR and OMAFRA, through a series of workshops, have been exploring the opportunities for landowners to grow trees as a carbon crop, investigating ownership and payment possibilities. In this process, the individual landowner deals with an 'integrator' or larger organization which, in turn, markets large amounts of carbon (50,000+ tonnes), and functions much like cooperatives or marketing boards do now. The EOMF has already been approached by persons interested at this level, and, since this is a developing market, it is appropriate that discussions take place among all parties concerned.

The role of the EOMF could be as pilot area for testing the program and, if successful, could eventually act as the 'integrator' or 'accumulator' for landowners in much the same way as we do now in the context of our Forest Certification Program. The Mohawk community of Akwesasne could also be included as a 'landowner' to enable aggregation of carbon fixing projects on First Nations lands.

There are many issues yet to be addressed; the schedule of payment to landowners, security of the crop, the alienation of land for long periods, transfer of ownership, and other questions. The structure for carbon offsets needs a well established and trusted framework at the international, national and regional/provincial scale to ensure a properly regulated market structure. The EOMF has a role here in bringing partners and players together to address these issues. The EOMF, through its Forest Science Committee, will continue to assemble information on carbon credits for landowners with a view to informing our partners.

The EOMF, through this article, hopes to raise the subject of carbon offsets and familiarize landowners with the concept. We hope that by being better informed people will be in a better position to take advantage of any future carbon credits program.