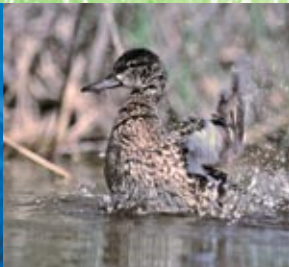


Agriculture : Climate Friendly Farms



Agriculture is an important income generating sector in Manitoba, accounting for about 12 per cent of the province's GDP when related activities are included.

More than 98 per cent of Manitoba farms are family owned.

In 2005, Manitoba's agriculture sector represented approximately 29.6 per cent of the province's overall greenhouse gas (GHG) emissions. Forty-three per cent of agricultural emissions came from agricultural soils, 41.6 per cent from livestock enteric fermentation and 15.8 per cent from manure management. Of the agricultural GHGs produced, roughly 55 per cent were nitrous oxide (N₂O) and 45 per cent were methane (CH₄). Manitoba agricultural soils could be considered as a sink for carbon dioxide (CO₂), mainly as a result of reduced tillage.

Through climate-friendly best management practices, the agriculture sector can reduce emissions by 250,000 tonnes by 2012. When new woodlot and wetlands programs are added, this figure rises even higher. Through the use of climate-friendly beneficial management practices (BMPs) such as sustainable cropping systems, more efficient use of nitrogen fertilizers, better manure management, and alternative feeding and grazing practices, it may be possible to reduce emissions by up to 20 per cent to 30 per cent by 2020.

Farmers across Manitoba are already implementing BMPs and are being recognized for their leadership in environmental stewardship. **For example, more than 6,000 producers in Manitoba have participated in Environmental Farm Planning, with almost 7.6 million acres influenced to date. In addition, a pilot project in the Rural Municipality of Blanshard (the first of its kind in Canada), has 75 per cent of farmers preserving wetlands and riparian areas, and protecting natural areas, in exchange for payments of \$5 to \$25 per acre.**

Regulations being introduced under *The Water Protection Act* as well as related financial incentives, can also reduce nitrous oxide and methane emissions.

Acting on climate change will provide new opportunities for producers to adopt more sustainable farming practices, diversify farming operations, reduce input costs, become involved in producing renewable energy and find additional sources of income through access to carbon trading markets. These changes coincide with shifts in consumer buying patterns that reflect a growing interest in environmentally friendly food choices.

A pilot project in the Rural Municipality of Blanshard - the first of its kind in Canada -

has **75** per cent of farmers preserving wetlands and riparian areas, and protecting natural areas

With reduced tillage practices, Manitoba's agricultural soils are considered a sink for carbon dioxide.

Climate-friendly best-management practices include:

- more efficient use of commercial nitrogen fertilizers, such as adjusting application rates and methods, time of application, use of inhibitors and new proposed technologies to reduce N₂O emissions
- expanded soil surveys to provide landscape information and support environmentally sustainable decision-making
- anaerobic digestion of manure captures CH₄ emissions and the subsequent application of the digested manure shows a reduction in N₂O emissions, in comparison to untreated manure
- composted manure to produce fewer greenhouse gas emissions than stockpiling it
- improved handling, treatment, storage and application of manure to reduce CH₄ and N₂O emissions
- biofuels production to reduce reliance on fossil fuels and decrease CO₂ emissions
- livestock feeding and grazing strategies to reduce CH₄ emissions
- reduced tillage practices to prevent soil erosion, conserve soil moisture and reduce fossil fuel use and CO₂ emissions
- controlled stubble burning program to prevent the release of CO₂ from crop residues into the atmosphere and provide feedstock opportunities for the bio-economy such as bio-energy, fibre and other bio-products
- increased use of perennial forages and legumes in crop rotations to reduce N₂O emissions
- land management practices for carbon sequestration, such as wetland restoration, permanent cover, afforestation and riparian area improvement
- organic farming

Actions to date

- **COVERING NEW GROUND.** Funding is in place for various projects related to sustainable farm production practices, including enhancing carbon sinks and reducing GHG emissions.
- **RIPARIAN TAX CREDIT.** Tax incentives for producers help them upgrade the management of lakeshores and river/stream banks for environmental benefit. Recent program improvements were included in 2007.
- **RETAIL SALES TAX EXEMPTION FOR MANURE TREATMENT EQUIPMENT.** This incentive to promote environmentally safe handling of manure on farm livestock operations works by providing a Provincial Sales Tax (PST) break on equipment such as slurry tanks, lagoon liners, biodigesters, composters and separation systems.
- **MANITOBA AGRICULTURAL SERVICES CORPORATION.** The Environmental Enhancement Loans and Alternative Energy Program help producers become more environmentally sustainable.

- **AGRICULTURAL POLICY FRAMEWORK (APF).** Environmental Farm Planning and the associated Canada-Manitoba Stewardship Program (\$32.67 million between 2003 and 2008) foster the health of soil, water, air and biodiversity through incentives from BMPs. The APF program will be replaced by an interim extension agreement of up to one year. The new long-term agreement, Growing Forward, is being negotiated and will take effect within a year of the old agreement.
- **BMP WATER PROTECTION TOP-UP.** This program funds up to 25 per cent of the costs associated with implementing BMPs related to water management, with GHG emission reduction benefits.
- **MARKETING SUPPORT FOR ORGANIC FARMING.** This funding for the Manitoba Organic Marketplace Trade Association Pool helps promote organic products grown by certified organic producers in Manitoba.
- **BIOGAS RESEARCH ON MANITOBA HOG FARMS.** This funding of \$300,000 is supporting the construction and feasibility assessment of anaerobic digesters for hog manure at three Manitoba operations.

Next steps: to 2012 and beyond

EXPANDING SUSTAINABLE FARM PRACTICES

- **MANITOBA SUSTAINABLE AGRICULTURE PRACTICES PROGRAM.** The program will build on existing sustainable farm practices. The province will provide technical and financial assistance to producers for reductions in GHG emissions, adaptation to climate change and participation in the new low-carbon economy. Through strategic investment, the program will enable farmers to adopt BMPs and achieve GHG emission reductions, along with benefits such as improved soil and water quality. In economic terms, the program will help producers buffer the cost of moving to more sustainable farming practices and increase resiliency on the farm. Potential economic benefits may include reduced production costs, competitive advantages, credits to sell on the carbon market, lower input costs and emerging eco-markets. Manitoba's agricultural sector is being consulted in the design of the program.

- **CLIMATE-FRIENDLY FARM WOODLOT PRACTICES.** This program will enhance carbon sequestration and ecological resilience by rejuvenating woodlots. It will also stimulate rural economic development and bioenergy crop options in Manitoba. The province will provide extension services to farm producers to implement sustainable woodlot management and build capacity for bioenergy production. It will provide direct payments to producers to implement BMPs supporting environmentally sensitive logging and regeneration. It will also provide training to micro-forestry entrepreneurs to minimize the environmental impacts of logging and maximize economic returns.



- **CROP RESIDUE BURNING REDUCTION PROGRAM.** The program will provide a comprehensive approach to address the issue of crop-residue burning and the resulting GHG emissions, air quality, human health concerns and farm crop-management challenges that arise from this practice. This program will also provide alternatives such as using crop residue for biomass energy.
- **NUTRIENT MANAGEMENT FINANCIAL ASSISTANCE PROGRAM.** Funding of \$2.5 million will help producers adapt their operations to comply with new water protection regulations.
- **ODOUR CONTROL TAX CREDIT.** Since 2006, agricultural land owners have been eligible for a new odour control property tax credit to offset 10 per cent of the purchase price of eligible odour control equipment. This equipment includes manure storage covers and anaerobic digesters. Using this type of equipment provides benefits to the climate by reducing methane emissions. The new tax credit may be claimed instead of the odour control corporation tax credit, which has been enhanced.
- **EXPANDING ORGANIC FARMING OPPORTUNITIES.** Many sustainable farm practices are already being undertaken by organic farmers. Manitoba Agriculture, Food and Rural Initiatives (MAFRI) has established an office specializing in organic farming support. Organic farming may include many practices that benefit climate protection including zero synthetic fertilizer use, crop rotation, cover crops, integrated farming systems and integrated pest management practices. Organic products are gaining in market share. While production costs can be higher, returns can be up to 30 per cent to 50 per cent greater than from conventional products, with additional savings on input costs.

Further support for marketing organic products in Manitoba was provided in early 2007 with the introduction of *The Organic Agricultural Products Act*. The proposed act defines the basis for organic food production and establishes mandatory standards for food products that carry the organic label. The goal is to give consumers greater assurance that organic production standards are monitored and enforced. The act would also cover organic livestock feed and aquaculture products. **New funding will be introduced to help producers with the costs of moving from conventional to organic food production.**

SUPPORTING LOCAL DISTRIBUTION

Buying locally grown food brings further climate and economic benefits to Manitoba by reducing transport emissions and providing greater markets for farmers here at home.

- **Grassroots initiatives** including the 100-Mile Diet encourages people to eat food grown within a 100-mile radius of where they live. The Manitoba Climate change Action Fund will support and expand Manitoba local food programs. www.100milemanitoba.org
- **In the Pembina region**, Manitoba Agriculture, Food and Rural Initiatives (MAFRI) has initiated a local food distribution network.
- **MAFRI** has posted a list of local food suppliers for Manitoba consumers interested in buying locally grown and processed foods, www.gov.mb.ca/agriculture/food/consumers/index.html
- **In northern Manitoba**, a new healthy foods initiative receives climate funding to support greenhouses and local community gardens to both reduce transport emissions and adapt to a changing climate. www.gov.mb.ca/residents/mbfood.html



- **MANITOBA CLIMATE CHANGE REGISTRY.** Carbon trading in the agriculture sector is already underway, with Prairie farmers selling carbon credits through private companies to the Chicago Climate Exchange (CCX). While these early credit trading agreements are creating a new market, Manitoba requires a system to verify agricultural carbon credits. The Manitoba government has signed an agreement with the Canadian Climate Exchange and Canadian Standards Association to develop a credit registry in Manitoba. A web portal will be launched in 2008 where green projects can be listed. Sessions are also underway to have Manitoba entities trained as verifiers.

ON-FARM ENERGY

- **AGRI-ENERGY DEVELOPMENT.** The development of biofuels, biomass energy, wind and solar power help broaden Manitoba's clean energy supply, reduce emissions and diversify the farming economy.
- **BIOFUELS.** Manitoba has one of the strongest mandates and incentives for ethanol and biodiesel in Canada. The province is supporting the development of community-based biodiesel production facilities and investigating the potential of on-farm ethanol and biodiesel production.
- **BIOMASS.** Manitoba's Agri-Energy office is working with producers to develop opportunities for the use of biomass energy. The benefits of pelletizing crop residues and dedicated perennial crops are being studied, which will ultimately enhance environmental stewardship and energy self-sufficiency on the farm.
- **WIND POWER.** In 2006, the first stage, the 99-megawatt, \$210-million St. Leon wind project, with 63 wind turbines, was completed. It will provide \$10 million in direct payments to local landowners.
- **BIOPRODUCTS STRATEGY.** Manitoba is developing a strategy for the bioproducts industry to provide opportunities for a sustainable rural bio-economy that benefits producers and rural communities.

