

Briefing Note

Retiring Marginal Farmland to Capture Greenhouse Gases

Marginal farmland: Soil rich with possibilities

Widespread retirement and restoration of marginal farmlands offers an untapped tool for reducing carbon emission and would provide the new solutions needed to achieve Canada's Emissions Reductions Plan of an ambitious 30 percent reduction in carbon emissions by 2030 [1-2].

Marginal lands – poor-yielding parts of fields – store soil organic carbon when retired from production and restored back to vegetation or wetland. Incentivizing farmers to retire marginal farmland to foster carbon storage provides an opportunity to address climate change, while providing economic supports to farmers and enhancing biodiversity.

To implement retirement and restoration of marginal farmland for carbon storage, the government must incentivize farmers to overcome barriers of upfront costs and awareness.

Canada's untapped carbon storage

Agricultural soils already serve as a vital carbon sink, offsetting 6% of annual sector emissions [3]. But there is vastly more capacity to be realized. Marginal farmland has low profitability, but high potential for carbon capture when retired and restored.

Restoration, replacing annual cropping with permanent, non-harvested wetlands or prairie, is a short and long-term climate solution: plants and soil capture atmospheric carbon and store it long term if the land is undisturbed. Leaving the plants undisturbed provides storage long-term and increases the soil's health and ability to store more carbon [4].

"About 60-70% of soil organic carbon can be resequenced... The objective is to adopt land saving technologies such that marginal lands can be taken out of production for nature conservancy" [3]

Recommended government incentive and frameworks

To facilitate the large-scale adoption of marginal farmland retirement and restoration for carbon storage, a multi-pronged policy approach is necessary to maximize impact.

Introduce incentive strategies for land retirement by expanding the Ecological Gifts Program (EcoGifts) to include marginal farmland retirement

Support ownership and government frameworks for conservation easements, co-management with conservation groups, and collective ownership for communities.

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Retiring marginal land provides environmental and economic benefits.



Reduced Costs: Marginal land often yields zero or negative profit [5-6].



Maintained Production: Retiring lands often enables increased productivity on surrounding high-yielding areas [7].



Ecosystem Services: Restoration increase wildlife habitat, pollination and pest predation [8-9]. Permanent cover also reduces soil erosion and nutrient leaching, mitigating waterway pollution and harmful algal blooms [10].

1. Implement incentive strategies

Expand the Ecological Gifts Program (EcoGifts) to Include Marginal Farmland Retirement

The EcoGifts program provides tax incentives to landowners who donate ecologically sensitive land. We recommend amending the definition of “ecologically sensitive land” to include retired marginal farmland, allowing farmers who commit to land retirement for biodiversity and climate benefits to receive long-term capital gains tax exemptions and other financial incentives.

This expansion would provide farmers with economic security while ensuring lasting legal protection. Unlike discretionary funding, EcoGifts is enshrined in the Income Tax Act and protected under the Canadian Environmental Protection Act (CEPA), meaning changes require parliamentary approval. This added legal security ensures that farmers undertaking the often-complex process of land retirement continue to receive financial compensation, even amid shifting political priorities.

2. Support ownership and governance frameworks

Empower local conservation and agricultural organizations for co-management

To ensure long-term success of marginal farmland retirement under the EcoGifts scheme, local conservation organizations should be granted co-management roles. Organizations like **ALUS Canada** and **Provincial Soil & Crop Associations**, already have expertise in the field of marginal land retirement and local adaptations.

These organizations can provide technical support, ensure compliance, and facilitate habitat restoration. This decentralized governance model would enhance program efficiency and local engagement. We call on the government to allocate discretionary funds which conservation and agricultural organizations can apply for to support their role in this effort.

Granted funds could be used for costs associated with: training seminars and materials given to local landowners applying for and currently in the EcoGifts program, compliance monitoring, ongoing research for land retirement optimization, and on-farm demonstration projects to showcase successful land retirement initiatives. By integrating local expertise, this approach strengthens conservation efforts while equipping farmers with the knowledge and resources needed for sustainable land management.

Policy supports are critical to overcome barriers.



Upfront costs for site preparation, planting and maintenance deter farmers.

In Canada, 28.8 percent of cropland is marginal yet cultivated due to market pressures and insufficient financial incentives [11].



The soil health and biodiversity benefits of land retirement are not commonly known. Farmers may also lack access to region-specific evidence, reducing their confidence in the outcomes of land retirement [12].



Geographical variation can complicate implementation as carbon storage depends on soil type, climate, and past land use. This variability makes farmers hesitant to adopt these practices.

The opportunity

Retiring and restoring marginal farmland is a significant opportunity for Canada to address climate change.

With bold action and long-term commitment, Canada can transform marginal farmland into a powerful tool for carbon storage, benefiting Canadians for generations to come.

Contributions & Partners

This policy brief was developed through the CARE program, in partnership with Food from Thought and the Arrell Food Institute.

Project coordinator/lead author: Elizabeth Mallory (MSc, University of Guelph)

Co-authors: Chloë Chang (MSc, University of British Columbia) & Alexandria Cosby (PhD, University of Guelph)

Advisors: Dr. Andrew MacDougall, Bryan Gilvesy (ALUS), Cinthia Braidwood (AAFC/AAC) Rosemary Brockett, Shelley Morrison, Jeanna Rex, Elizabeth Shantz.

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