

# Carbon as a Crop

## Opportunity Assessment for Carbon Credit Sales for Small and Medium Farms in Peterborough District

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### Background

Improved carbon management is vital if Canada is to mitigate climate change and reach net zero emissions by 2050. Carbon can be sequestered biologically in agricultural soils[1] (Fig. 1). Sequestered carbon does not contribute to climate change. One carbon credit represents one tonne of sequestered carbon, which can then be sold on the market[2].



Figure 1: Management practices that are known to sequester carbon such as (left) integrating trees and (right) cover crops. Image credits (right) Vet, R., (left) Kim, M.

### Objective

The purpose of this study is to produce an introductory report on the opportunity to enter the carbon credit market. Market entrance will provide an alternative income source for Peterborough District farmers.

Research Question: Are carbon markets a feasible alternative income source for small and medium-sized farms in the Peterborough District?

#### References

1. Ontl, T. A. & Schulte, L. A. (2012) Soil Carbon Storage. *Nature Education Knowledge* 3(10):35
2. Government of Canada. Canadian Greenhouse Gas Offset Credit System Regulations.
3. Government of Ontario. (2021). Farmland area classified by use of land, 2021.
4. Drever, C., et al. (2021). Natural climate solutions for Canada. *Science Advances*.
5. Denton.(2022) Provinces amend carbon pricing legislation to maintain federal equivalency.

### Methods

A literature review using primary, secondary and grey literature is being employed to assess the carbon market. For example, the current pastureland in Peterborough County's[3] potential carbon sequestration from integrating trees [4] multiplied by the expected financial value of carbon in 2030 [5] on the carbon market (Fig. 2).

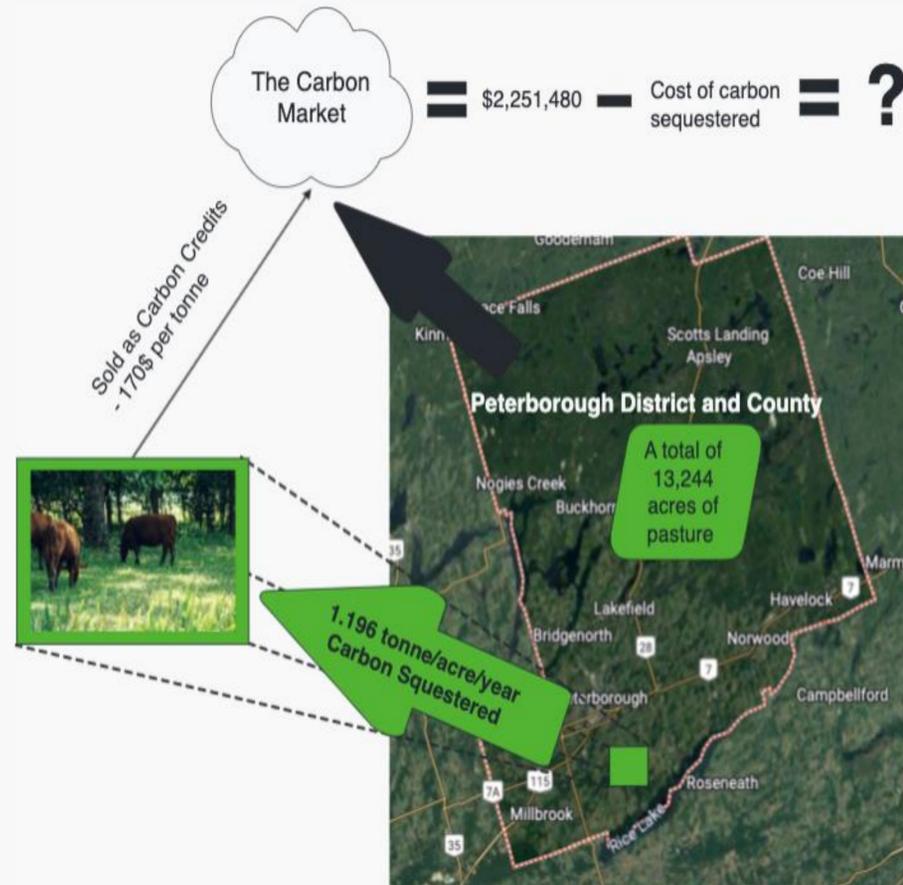


Figure 2: A visual representation of the financial opportunity Peterborough County possesses if trees are intergraded (Fig 1 (right)) into pasture management. [3],[4].[5]. Image credits (left) Nesic, D., (left) Google Maps.

### Expected Outcomes

1. A preliminary report for Peterborough District farms on the economic opportunity to enter the carbon market.
2. Recommendations for preparatory actions required for market entrance (Fig. 3).

### Long Term Project Goals

1. Conducting survey with the farmers of Peterborough District to evaluate potential involvement and baseline soil carbon sampling.
2. The preparatory stage includes organizing documentation and system creation to maximize efficiency upon market entrance.

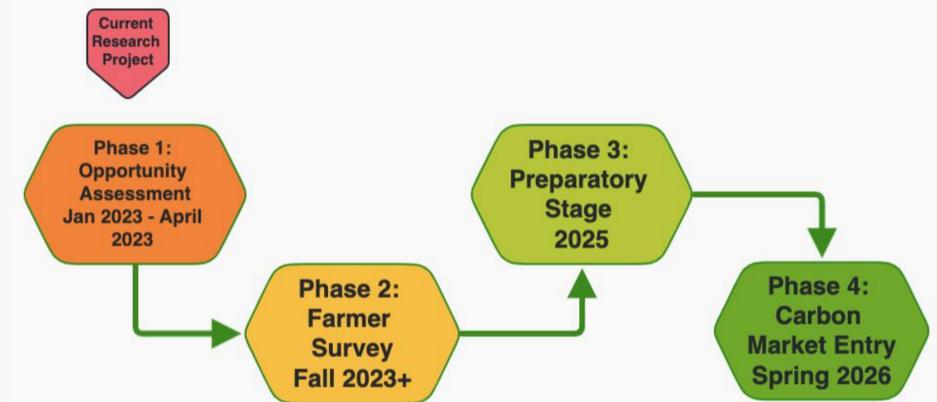


Figure 3: Timeline to achieve market entrance.

The long-term objective of this multi-phase project is to increase the incomes for small and medium farms in the Peterborough District.

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