

# Scoping Statement on PhD Research

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# **Presentation Overview**

- **Title**
- **Background**
- **Research Objectives**
- **Research Questions**
- **Research Methodology**
- **Research Implications**

# **Title:**

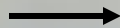
## **Payments for Ecosystem Services (PES) that are Provided from Private Forest Land in Ontario**

### **Statement:**

- Ecosystems are providers of goods and services that should be paid for.



**Forest Ecosystem**



**Bird Habitat**



**Pollination**

- If PES scheme is carefully designed it can protect and conserve ecosystems and produce ES.



# ***What is PES ?***

***A PES scheme is :*** a voluntary transaction in which



**ES Provider-**

**Wetland Ecosystem**

- Water filtration
- Flood control
- Species breeding ground



**ES Provider-**

**Forest Ecosystem**

- Carbon sequestration
- Soil health
- Pollination



**ES Buyer**

**ES Beneficiaries:**

**Government,  
Local People  
Industries**

# Background

## International

- The Millennium Ecosystem Assessment: about 60% of the world's ES are being degraded or used unsustainably
- PES has been a response to The Millennium Ecosystem Assessment
- PES is being implemented in various locations around the globe
- Problem with ES definition, measurement and valuation of ES

## Example

ALUS at Norfolk County

Wetland Ecosystem → Flood Control } How to measure this service?

ES Buyer (Beneficiaries)—Government or local People can't pay for this service if flood does not visit that area or if it is not measured

## Canada

- Canadian ecosystems increasingly degraded and the ES reduced;
- PES has been a response to Ontario's Biodiversity Strategy-2005 and The Fifth National Forest Strategy (2003-2008);
- Existing PES program in Ontario (ALUS) is still underdeveloped;
- A huge knowledge gap about ES among economic, social and environmental policy makers

# **Objectives**

**To investigate a comprehensive approach to the design of PES mechanism**

## **Research Questions**

- 1) How to define ES for PES program that would be easily tractable and measurable;**
- 2) How to identify the standard unit of account to measure and aggregate the value of ES;**
- 3) How to set up appropriate categorization of ES and payment structures;**
- 4) How to identify demand for and supply of ES.**



# Research Methods

Ecological; Socio-economic; Economic tools and Actual measurements of ES

**Payments  
For  
Ecosystem  
Services**

**Financial Accounting Tool**

**Design Payment Structure**

**Economic Valuation Tool-**

**Monetary Value of ES**

**Natural Resource Accounting Tool-**

**Physical Amount of ES**

**Management and Ecological Tool--**

**Provision of ES**

**Case Study at Private Forest Property**

**For specification and verification  
of economic and statistical tool**

**Survey of Consumption Expenditure on non-market ES**

**Demand for ES**

**Survey of Producer's Expenditure**

**Supply of ES**

**Analytical Tool- Economic and Socioeconomic**

**Quantitative and  
Qualitative**

# **Implications of the Research**

**This research is of four-fold importance:**

- **First, it will serve as a guide for better operationalizing PES schemes.**
- **Second, it will contribute to the theoretical frameworks for the valuation of a bundle of ES.**
- **Third, this research will contribute to the private land management decision support tool.**
- **Finally, it will contribute to the enhancement of existing incentive program formulation of government policies to operationalize ES concept.**



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8. **Zobel, M. et. al. 2009. Quantifying the contribution of organisms to the provision of ecosystem services. Bioscience, Vol. 59 No.3 pp. 123-235.**

## Internet:

1. **ALUS website: [www.norfolk.ca](http://www.norfolk.ca)**
2. **IISD, Markets for Ecosystem services. <http://www.iisd.org>**