

Brief Research Proposal

My proposed doctoral research focuses on the relationship between forest resource economics and forest resource management specifically through the concept of Payments for Ecosystem Services (PES). Based on the idea that ecosystems are providers of goods and services that should be paid for, PES is being implemented increasingly in various locations around the globe as a promising new policy instrument for ensuring the provision of ecosystem services (ES) (UNEP, 2006)¹. PES has also been a response to The Millennium Ecosystem Assessment which recently indicated that about 60% of the world's ES are being degraded or used unsustainably (www.millenniumassessment.org). Ontario's Biodiversity Strategy-2005 has also contained PES as incentive program such as Alternate Land Use Services (ALUS). Several studies indicated that as Canadian ecosystems have become increasingly degraded and the valuable services that they provide reduced, there must be appropriate incentives so that private landowners and public officials take into account the values of ES in their decision making (Anielski and Wilson 2005²; Olewiler 2004³),. The Fifth National Forest Strategy (2003-2008) accords with this view with its theme "Develop and implement incentives for the provision of ES from private woodlots" (Internet: <http://nfsfsc.forest.ca>).

As a doctoral candidate, I want to build a critical mass of expertise in the area of ES. It is a goal that is fueled by the lessons of sharp decline in ES in the past. Moreover economic, social and ecological significance of ES have contributed to this dream. My assessment of the existing incentive program ALUS in Norfolk County at Ontario Nature and Ontario Ministry of Natural Resources showed that this program is still underdeveloped. In my work I have found that there is still a huge knowledge gap about ES among policy makers of economic, social and environmental sectors. It is my firm view to educate students in the academia and assist policy makers in the professional arena through research, publications and presentations.

The purpose of my doctoral program will be to investigate a comprehensive approach to the design of PES mechanism for the provision of ES from private forest land in Ontario. PES researchers indicated to me that much confusion around the application of ES comes from ES definition and its valuation itself. In light of these issues, my PhD research will address the following 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. The research questions outlined above will be answered by designing an integrated set of mixed scientific and ecological economics research methods and analytical tools.

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 programs and formulation of government policies to operationalize ES concept.

¹ UNEP. (2006). Developing International Payments for Ecosystem Services: A Technical Discussion. Geneva, Switzerland, September 12, 13.

² Anielski, M. and Wilson, S. (2005). Counting Canada's Natural Capital: Assessing the Real Value of Canada's Boreal Ecosystems. The Pembina Institute. (www.borealcanada.ca, www.pembina.org)

³ Olewiler, N. (2004). *The Value of Natural Capital in Settled Areas of Canada*, Ducks Unlimited Canada and the Nature Conservancy of Canada.