Greening Regional Agriculture

A Case Study of the Paid Ecosystem Services PES concept applied at a regional scale

Location:	Columbia Valley Region of East Kootenay, British Columbia
By:	Katie Wells and David Zehnder
Report Date:	April 2014
Research Dates:	July 2013 - March 2014

This project supported and funded by:

real estate foundation BRITISH COLUMBIA

Columbia Basin trust

Regional District of East Kootenay

This project expanded the Paid Ecosystem Service (PES) concept from a single farm to multiple farms in the same geographic region (the Upper Columbia Valley). The case-study question being addressed was ***"Could a PES program meet regional objectives of preserving ecologically sensitive areas on agricultural lands for community/society values?"***

The PES concept is not new and has been used in Europe and around the world for many years. The wide scale application in North America is relatively new and has been under development in BC over the past 5 years (see Ecosystem Services Initiative Progress Report March 2014)[1]. Working with many stakeholders and funders, the ESI group has previously worked to understand:

- The viability of the concept for potential for wide scale application in BC and Alberta,
- what a workable model would consist of in these jurisdictions,
- how to measure the effect of beneficial management practices on ecosystem services,
- how to measure the economics of ESI projects in terms of producer costs and benefits, and society (the public and funders) willingness to pay,
- the level of support from producers, funders, government, the public and all stakeholders in the future development of such a project, and
- how to expand beyond pilot research.

This previous work has determined that the concept has good potential, and that it should be developed at a regional scale. It also developed the tools, and identified the infrastructure that would be required to support this concept over the long term[2].

[1] This report is in final editing stages with BC Ministry of Agriculture and should be publicly available in June2014
[2] See Ecosystem Services Initiative Progress Report (March 2014) for a summary of work to date in BC

The key objective of this current project was to assess a regional scale pilot program to determine its viability by[3]:

- Pilot testing the Rapid Assessment Tool to measure ecosystem services on multiple sites and refine the process as required; make recommendations on using the tool on a larger scale.
- Pilot testing the rapid economic data gathering process and determine if an add-on to the economic Rapid Assessment tool can be developed; make recommendations on using the tool on larger scale.
- Holding focus groups to gauge public and producer support for the pilot program and possible future programs.
- Gaining insight from the implementation of a regional program into how a multi-region program could be initiated.

Several conclusions and findings have arisen from this work. Our ecological research confirmed:

- the rapid assessment tool developed previously by the Alberta Biodiversity Monitoring Institute is an effective tool for conducting ESI evaluations on multiple sites.
- An initial on-site assessment is required with future visits ideally annually but possibly every 3-4 years.

Our economic research confirmed:

- The rapid assessment tool developed in this project by Wells Business Solutions (economic) from the previous work can be an effective tool for conducting ESI evaluations on multiple sites.

[3] All methodologies are covered in the individual research reports.

- An initial on-site visit is required. Further evaluations may or may not require on-site visits.

- the flexible formula for determining payments, developed as part of this project, confirmed effectiveness in terms of relevancy and possible fairness of payments and allows for flexibility based on funding available and regional and funder priorities.

The individuals who performed the rapid assessments (Dave Zehnder – ecological and Katie Wells – economic) both felt that with the right training the assessment could be done by one individual in a single visit (e.g. an Environmental Farm Plan Advisor).

The research to gauge public, funder and farmer support further confirmed:

- There is a willingness to pay from the public,

- There is support for a conservation fund (tax), and support for direct public involvement to fund such initiatives as a partner with other governments and funders,

- Many funding organizations have objectives aligned with ESI objectives, and

- Producers are engaged and supportive of the program.

There were several **questions raised** during this research project:

- *Could the tools be modified such that an on-site visit was not required or does the team foresee this as an ongoing cost of delivering the program?* Solution: For now onsite visits are required at least for the initial visit for both economic and ecological assessments. Then perhaps every 2-3 years for ecological and economic assessments can possibly be done by phone interview. However, once a larger scale program is developed, regional trends may emerge that create more automatic assessment methods.

- *How will a future program determine ecological priorities factor into the economic payment calculation tool?* Solution: We modified the tool such that the calculations

can be modified to adjust priorities within the payment pool region. Additionally funding can be split and or combined. (For example, there could be a local conservation payment calculator taking into account local priorities and then an overlay from a national funder for a specific priority such as a specific species at risk)

- *Should the Ecological Rapid Assessment Tool be applied to Problem Areas or Representative Areas?* One step in the rapid assessment process requires the assessor to choose an assessment site. They need to choose a site that is either a representative or critical site within the riparian area. A "critical" site is one that may be sensitive, or already has some specific problems; while a "representative" site will provide an overall impression of the health of the larger riparian area. Different results are obtained if the tool is applied to a problem site as opposed to a representative site within the riparian area. Solution: It is therefore important for future regional programs to make a decision as to which type of assessment to direct the assessor to complete before they go to the site. This will result in a consistent approach and comparable data for analysis.

This project met its goals which were to:

1. Continue testing and geographically expanding the concept of the ESI initiative to determine viability of a future long-term regional provincial ES Program,

2. Expand the testing of the concept that will determine the viability of a future long term regional and provincial ES program, eventually featuring a voluntary payment for ecosystem services (PES) that will help offset farm costs for implementing more ecological enhancements,

3. Complete the appropriate financial analysis necessary to support the program, and

4. Refine a science-based protocol to help verify in a rapid and standardised manner so that ecosystem benefits claimed on a particular farm are sufficiently credible.

And met its objectives which were:

- Increase the number of regional demonstration sites within the target area (watershed),
- Gauge regional support of the public and farmer for the Paid Ecosystem Services concept,
- Conduct the assessments of the sites using the protocol developed for the ESI by the Alberta Biodiversity Monitoring Institute,
- Establish relevant ecosystem service values to determine fair incentive level for farmers, and
- Create final report with recommendations for a long term program

More specifically the project was successful in:

- Demonstrating that the Ecological Rapid Assessment tool developed in a previous project works and that it can be used to gather a baseline and monitor changes. It is ready to go for expansion to a larger program.
- Demonstrating that the economic assessment tool can be used to gather input data for the economic payment calculator. This research demonstrated the wide range of costs and benefits being seen by producers completing ESI impacted by a number of factors such as size of project, loss of grazing, initial capital costs, maintenance, cattle and feed prices, etc.
- Showing specific calculated payments may be fairer and equitable than providing lump sum participation amounts. Running the data through the economic development tool calculator showed a wide range of payments (larger and smaller) than the payments producers were receiving for being part of this study (flat rate). When reflecting on the numbers, the calculated results were deemed more appropriate based on impact and effort. This showcased that having specific metrics that calculate payments based on producer impact (relative to peers) and regional priorities yields a range of payments that make sense rather than just doling a lump sum payment to each participants.

- Developing the tool to calculate the minimum funding requirements to run a program (equal to producer costs) and developing method for distribution of additional funds and/or funds obtained for specific initiatives that may not affect all participants within the regional pool (eg a particular species risk such as a badger or a certain type of frog).

- Demonstrating Public Support for PES concept learning that the benefits must be regional so that the public can relate to the results in their communities and with their tax dollars.

- Demonstrating Producer satisfaction being part of the pilot and research programs to date. Showing their willingness to participate and their pride and commitment to being part of the solution of preserving ecological values and priorities.

- Testing the systems such that the researchers believe that the tools are now at a readiness level for much larger scale implementation on perhaps a provincial or multi-regional level.

This project tested the culmination of the work done to date to set the framework for a PES program. It has shown that the following elements developed can work on a regional scale and could now be applied and tested in on a larger scale:

- Both the ecological and economic assessment tools are in place for a larger scale PES program,

- It is felt that both of these assessments could be completed by one entity with appropriate training (eg. An Environmental Farm Planner),

- The funding model framework is viable and flexible to be adapted to meet regional and multi-regional priorities,

- There is producer support for participating in a PES program, and

- There is public support for a PES program on regional or multi-regional levels.

- There is funder support for supporting a PES program where it aligns with funder goals and objectives.

It is recommended that the findings from this study and the numerous projects completed to date will be used to guide the next step of the ESI which is a larger longer term multi regional pilot program.

# # #

Appendices

(3 reports generated from this project work plus 1 additional relevant document)

A. *Gauging Support for Payment of Ecosystem Services in the Columbia Valley*
   September 2013 by Return-on-insight (Bruce Cameron)

B. *ESI Phase II Component- Economic Analysis*
   Building a tool for rapid economic assessment of multiple sites abd baseline payment determination from a producer perspective
   December 2013 by Wells Business Solutions (Katie Wells)

C. Site Establishment and Monitoring Report
   Establishing and monitoring of demonstration sites for the Regional PES trial Project
   March 2014 by Zehnder Consulting (David Zehnder)

D. Ecosystem Services Initiative Progress Report
   March 2014 by Zehnder Consulting (Kristen Harma and David Zehnder)
   (Note this report was funded by the BC ministry of Agriculture separate from this project but is relevant providing up to date chronology of work done to date)