Ecosystem Services and Environmental Markets

Prepared by the Ecosystem Services Project Team and
The Environmental Market Opportunities Project Team

For the AEPA Board
August 2009

Ecosystem Services and Environmental Market Opportunities Report

Executive Summary

The Agri-Environmental Partnership of Alberta's vision is that **Alberta's agriculture industry is profitable, accountable and recognized for its proactive, responsible environmental stewardship.** In order to achieve this vision AEPA recognized the need to gain a clear understanding of ecosystem services and environmental markets.

Two AEPA project teams have completed their tasks of finding opportunities to enhance environmental outcomes through policy and market mechanisms. The Agri-Environmental Partnership of Alberta makes decisions through the investigation of the issue, dialogue, consultation and consensus. Both the Ecosystem Services (ES) Project Team and the Environmental Market Opportunities (EMO) Project Team used the AEPA process to reach consensus on the following recommendations.

ES also called Environmental Goods and Services (EGS) can be characterized as environmental outcomes obtained directly or indirectly from the natural environments such as clean air, water, soil and biodiversity. The goal of the ES project team was to find ways to enhance environmental outcomes, by creating a system that uses mechanisms for rewarding producers for providing ES.

EMO are ones that have the potential to capture a viable market share by providing sustainable ES. Project team members agreed that participation in an environmental market should be voluntary and the identified opportunities should be advanced via the industry and facilitated through government. The EMO project objective was to identify the real market opportunities and market risk of verifying production systems for the Alberta agriculture industry.

To reach a maximum potential for environmental policy and EMO, a strong partnership between the government and industry is needed to develop the policy, systems and process for implementation.

The recommendations made by the **ES Project Team** are as follows:

Recommendations for Industry and the Government of Alberta

1. Engage agriculture industry in identifying, managing, providing and marketing ES in the next three years by:
   - Educating and actively communicating with the agriculture industry on ES.
   - Conducting and collecting credible case studies to use as education material.
   - Developing education content based on literature review on ecosystem assessment (AENV).

2. Increase public understanding of ES and agricultures ability to provide ES on working landscapes through:
   - AEPA developing and coordinating with industry organizations communication messages to key decision makers in public (e.g. MLAs).
   - Building media relationships and contributing to media projects/initiatives (i.e. "What's on Your Plate?").

Recommendations for the Institute for Agriculture, Forestry and Environment

As the Institute for Agriculture, Forestry and Environment develop and recommend to the Government of Alberta an environmental policy framework consider the following as part of the framework or implementation plan:

3. Fostering EMO and willingness to pay for ES by:
    - Building long term commitment, capacity and infrastructure (e.g. ES exchange site) to implement excellence in ES.
    - Providing observations on initiatives and approaches, scale and any insight into likely effectiveness.
    - Researching and understanding the current application of incentive tools, their types, relative dollar amounts, and the scale of application of incentives on Alberta landscapes.
    - Using policy and subsequent tools enable a voluntary ecosystem market to work.
    - Linking and connecting ES to land-use decision making.

4. Ensuring sustainable, tangible benefit to agricultural producers in the long term.

Recommendations for AEPA

AEPA members recognize the importance and urgency in collecting scientific information on ES in the agricultural working landscape that includes:

5. Determining the current state of knowledge (types, location, extent) of ES in agriculture landscapes.

6. Identifying information needs and recommending how those needs can be addressed.

7. Evaluating progress of these recommendations in December 2009.

The recommendations made by the **EMO Project Team** are as follows:

Recommendations for Industry and the Government of Alberta

There must be a strong science based foundation for the agriculture industry to verify and build on EMO. Environmental benefits in Alberta need to be identified, understood and where possible quantified. The project team recognized that research, measurement and monitoring may currently exist, however to maximize opportunities for marketing (branding and labeling), literature reviews and further investigation is needed.

A comprehensive ecological understanding of Alberta's agricultural landscapes would contribute greatly to our knowledge of the current situation and enable creative and innovative land and water use decisions. Market analysis may also help the industry build appropriate certification/verification systems in order for them to substantiate verified claims, be seen as credible, accountable and prove to consumers the environmental benefits.

In developing the following recommendations consideration was given to the export nature of the agriculture industry, the increasing demand for food, the global food crisis, the current global economic situation and the increasing pressures on natural resources (land, water, air, habitat) to produce food.

1. Agriculture producer organizations will lead discussion with the Government of Alberta to help facilitate the development of a science based system for certifying and verifying environmental claims; this would include data development, research, analysis or literature review for the following:
    a. Evaluate and quantify agriculture's contribution to biodiversity.
    b. Evaluate and quantify agriculture's contribution to water quality.
    c. Evaluate and quantify agriculture's contribution to carbon footprint.
    d. Evaluate and quantify the reduction or efficiency gains of water for irrigated crops and livestock supply chains.
    e. Evaluate and quantify the reduction of pesticide load in the soil and water through the adoption of integrated pest management practices.
    f. Evaluate and compare the use of resources (land and water) of intensive versus extensive agriculture to help the agriculture sector measure land/water use efficiency.

2. The Alberta Winter Wheat Producers Commission with assistance from Alberta Agriculture and Rural Development (ARD) investigate the opportunity to brand winter wheat as an "Enviro-crop".

3. The Alberta Pulse Growers Commission, with assistance from ARD investigates the opportunity to brand pulse crops as an "Enviro-crop".

4. The poultry value chain, with assistance from ARD build a water footprint tool to measure water use efficiency. Potential reductions in water use could be used in an "eco-label".

5. Alberta Pork will lead a project with ARD to benchmark information about consumer perceptions of environmental attributes and identification of opportunities for Alberta producers to differentiate products in alignment with environmental footprint protocols.

Recommendation for the Institute for Agriculture, Forestry and Environment

The Institute for Agriculture, Forestry and Environment (IAFE) has a key role to assist the Government of Alberta with policy and programs to enable Alberta's agriculture industries to be strong competitors in the marketplace based on their environmental performance.

6. IAFE has part of its mandate to consider the EMO Project Team report and include recommendations that best position Alberta's agriculture industry as a leader in environmental performance. IAFE will evaluate the Land-use Framework as an EMO.

Recommendation for Agri-Environmental Partnership of Alberta and Alberta Livestock and Meat Agency

The Alberta Livestock and Meat Agency (ALMA) leads Alberta's livestock and meat industry in marketing, research and production to help them become sustainable, competitive and profitable. More specifically, ALMA is partnering with government and volunteer industry experts to create a business model and infrastructure for certification/verification. EMO Project Team members have identified potential barriers and challenges with certification and branding that ALMA in a leadership role may consider addressing.

7. AEPA will pursue opportunities to work in conjunction with ALMA to:
    a. Ensure the environmental certification/verification infrastructure is in place to capture identified EMO.

b. Research and understand the potential opportunities and barriers with eco-labeling/branding with the Canadian Standards Board and Canadian Food Inspection Agency.
c. Develop a plan to remove any barriers and enhance opportunities for eco-labeling (branding environmental attributes).

AEPA project teams also developed a Communication Plan that identifies actions and tools for specific target audiences such as agriculture stakeholders, government, and the broader environmental community. The objectives of the communication plan are to:

1. Present a common voice on ES & EMO.
2. Support agriculture representatives on the board of IAFE with information.
3. Extend information to the agriculture community.
4. Collect input from the agriculture community.
5. Present the AEPA as a credible voice.

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1. Introduction

The vision of the Agri-Environmental Partnership of Alberta (AEPA) is that Alberta's agriculture industry is profitable, accountable and recognized for its proactive, responsible environmental stewardship. In order to achieve this vision AEPA recognized the need to gain a clear understanding of ecosystem services and environmental markets. This includes evaluating and considering market-based instruments and opportunities with certification, branding and labeling.

Through innovation and cooperation, the Environmental Market Opportunities (EMO) Project Team and the Ecosystem Services (ES) Project Team were tasked with finding ways to enhance environmental outcomes that are complementary to agriculture production today. This includes tools and mechanisms that reward producers for providing ES. By virtue of vast land ownership and management of the majority of the land base, agriculture industry priorities and actions have a paramount effect on what ES are being produced, where they are being produced, and for how long they will be produced.

Over the past decade, there has been a tremendous increase in understanding with regards to the quantity and diversity of services that land and the natural environment are providing society. This new understanding is being expressed as ES. These services include our more common view of agriculture food production, as well an array of other services affecting health, quality of life, aesthetics and the processes sustaining our air, soil, water and biodiversity.

Increasingly, businesses and organizations are incorporating environmental objectives into their decisions and operations. Among many other drivers, such as compliance with regulations, risk management, cost and innovation, companies acknowledge that brand recognition by their customers and product differentiation are reasons for pursuing green products. Some consumers are becoming more discerning when choosing products and services based on the sustainability of the supply chain.

Fundamentally, a shift in decision making is needed, from the policy level down to the daily business and operational decisions a producer makes. A system of planned communication and encouragement, along with economic rewards for producers who provide valued ES would, over time, obtain desired results.

AEPA envisions a number of interacting and/or interdependent policies, actions and efforts deliberately contributing to an outcome of maintaining a flow of diverse ES from the largely privately owned agricultural landscape. A long term system would have endurance through time, and imply that this effort is deliberate. Further, and by definition, a system "is a regularly interacting or interdependent group of items forming a unified whole".

Canada and Alberta, like many other jurisdictions, have been, and currently are, actively engaged in initiatives involving the physical and social sciences, as well as stakeholder consultations and policy development.

Environmental markets have buyers and sellers that deliver financial or business benefits as well as provide a financial value for ecosystem services. The EMO Project Team focused on opportunities that are directly connected to buyers and sellers in agricultural markets including food, bio-energy and bio-industrial products. EMO would likely be combined with verification, certification or some sort of branding scheme such as eco-labels. In all cases, there should be some sort of environmental benefit or ES provided.

ES and Environmental Goods and Services (EGS) can be characterized as environmental outcomes obtained directly or indirectly from the natural environments such as clean air, water, soil and biodiversity. **Project team members agreed to use the definition of ES as described in the Millennium Ecosystem Assessment, and identified that agriculture provides many of the natural and managed ES.** ES are recognized internationally in four categories: provisioning, regulating, cultural and supporting (Figure 1).

In choosing whether to use the term ES or EGS, project team members recognized that the definition for each of the terms was used interchangeably. The advantages to using ES are that it is internationally recognized and links Alberta to an international framework, provides a common language for peers, government and other sectors and also presents an opportunity for agriculture and Alberta to be proactive in forming a basis for certification and branding. A concern that policy decision makers should be aware of is that terminology and implementation of tools will take a significant amount of education and capacity building with agriculture producers. There needs to be recognition that ES exist in working landscapes that produce agricultural (food) products; ES are not just natural areas, but integrated human landscapes.

Figure 1: Defining Ecosystem Services.

Ecosystem Services	Millennium Ecosystem Assessment Definition	Examples of ES Agriculture currently provides
Provisioning	Food, water, fibre/wood, fuel/energy, bio-chemicals, genetic, ornamental	Food, wood, fuel, fibre
Regulating	Air quality, water, climate, flood and erosion control, biological control, diseases, water/waste purification, pollination, storm protection	Carbon capture, water quality through riparian management, erosion control through good rangeland and cropland management, storm and flood protection through natural habitat areas
Cultural	Aesthetic, spiritual, educational, recreational/ecotourism, sense of place, heritage, knowledge, social relations, inspiration	Panoramic views, sense of place in rural community, aesthetics of open fields/space
Supporting	Nutrient cycling, soil formation, primary production, photosynthesis, oxygen, water cycling, provision of habitat	Nutrient cycling through manure application, soil formation through reduced or zero tillage, perennial forages and rangelands, photosynthesis by crops and grassland plants, wildlife habitat in wetlands, riparian zones, rangelands and treed areas

This report is primarily for AEPA partners and their key stakeholders. Project team members for the EMO Project Team and the ES Project Team were approved by the AEPA Board and are attached in Appendix A.

2. Ecosystem Services

The ES Project Team was tasked in June 2008 with finding ways to enhance environmental outcomes that might include tools and mechanisms that reward producers for providing ES. The hope is to build and offer a long term system that encourages and rewards agriculture producers for the provision of ES in working agricultural landscapes.

A policy framework for ES must build trust, assurance, accountability and long term sustainability. AEPA will seek to ensure the definition of ES used by policy decision-makers includes food *and* other ES as an integrated system. A baseline for measuring improvement should be established and should reflect the current situation.

Market-based instruments (MBI) facilitate incentives for those who are providing ES. Using a market approach, governments would be relying on economic signals to positively influence behaviour. The agriculture industry would make informed decisions based on the market signal, improving efficiency and potentially becoming a "seller" of an ES. It is understood that not all agriculture producers will be willing nor be required to participate in an ecosystem market.

The project team discussed several basic types of payments for producers:

- Direct payment for a verified ES.
- Beneficial management practice(s) that lead to an ES.
- Pay "fairly" for the agriculture product that is produced in an environmental responsible manner (the production of food also provides ES).
- Or a combination of the above.

The client in an ecosystem market could be any number of people or organizations including environmental groups, other producers, society (government), other industries and future generations.

2.1 Process

AEPA's ES Project Team used a four step process that included investigation of the issue, discussion and dialogue, consultation, and consensus on principles, vision and objectives.

2.1.1 Presentations

Presentations from those who could provide expertise on ES and conservation tools included:

- Meghan Ellis with Alberta Environment presented a definition of ES and a process to assess ES that included identification, isolating the priority ES, determining the conditions and trends, completing an economic valuation, identifying risks and opportunity and finally monitoring and evaluating the ES.

- Mike Barr with North American Waterfowl Management Plan (NAWMP) described a voluntary, market-based tool for biodiversity and habitat. The NAWMP achievements go well beyond bird conservation and include other ES benefits and a partnership approach that attracts funding, enables synergies and has been successfully implemented in Alberta.

- Anish Neupane with Alberta Environment defined MBI with respect to using them in an environmental context. The information helped project team members understand that science is a critical link to applying market instruments; these instruments assist in changing behavior of individuals by altering the structure of incentives that may consider and can operate efficiently with regulation, rules and government influence.

- Jason Cathcart with Alberta Agriculture and Rural Development presented information on the conservation tools listed in the Land-use Framework. Conservation easements, conservation offsets, Transfer Development Credits and Income Tax credits were presented as information and benefits and risks were discussed as a project team.

2.1.2 Workshop

AEPA consulted with key agriculture partners and stakeholders to collect input to be used as a basis in ES policy frameworks. The workshop held on October 28th was an essential first step for building a common understanding of ES and various MBI and conservation tools. Participants concluded that agriculture does provide ES and there are many examples of attributes in an agriculture landscape that have environmental value. A workshop summary is attached in Appendix C.

Workshop participants also recognized there are a variety of tools and systems that could and do reward agriculture producers for providing environmental benefits. The systems and tools discussed at the workshop include government financial incentives and taxation policy tools, certification, transfer of development credits, conservation agreements (easements); conservation offset programs and government regulation. Potential risks and benefits were discussed and summarized by the project team in this report to provide direction in an ES policy framework.

There were approximately 50 participants in attendance with the majority representing agriculture industry. While the largest benefit of the workshop was to build a common understanding of ES rewards or MBI, there were some key conclusions drawn from the input collected from participants and presenters:

- Society is becoming more concerned about human impacts on the environment and they are taking a closer look at how businesses, such as agriculture, address that impact.
- Federal approach to ES policy will be to enhance accountability and measurability. Policy will be flexible to allow for variability between provinces and implementation of MBI. MBI such as reverse auctions and water quality trading appear to be promising ES policy tools.
- Certification and branding offer a strong opportunity for improved market position, informed consumers and support from environmental groups and communities. Input from participants indicated an industry readiness to explore and develop certification and branding strategies based on environmental attributes.
- Generally speaking, agriculture industry is most willing to accept government financial incentives or policy taxation tools in comparison with other tools for rewarding those who provide ES.
- Producers need to be in the forefront of policy development so that policies reflect regional disparities, and requirement to meet the needs of the industry.

2.1.3 Dialogue on MBI

Project team members held discussions on the major MBI identified in the Land-Use Framework and other government policy. Dialogue included how the MBI might work in Alberta, connections and relationships to other MBI, benefits the MBI could have to the agriculture industry, and risks or unintended consequences.

<u>Conservation Offsets</u>

A conservation offset might be defined as activities intended to compensate for the unavoidable harm to the environment caused by development. A good example to use is the Alberta Offset System for offsetting greenhouse gas emissions.[1]

Offsets can be used by regulated entities, such as the oil and gas sector, to reach compliance under specific regulations. The offset, such as carbon sequestration provided by an agriculture system, is a voluntary

[1] http://www.carbonoffsetsolutions.ca/policyandregulation/abOffsetSystem.html

action and is non-regulated. In an offset system there are regulations, policies, science, criteria or rules to participate and often, a broker, aggregator or an exchange agency.

Payment for offsets could be directly paid from the regulated entities to those that provide the benefit or environmental enhancement or it may be a credit system.

Benefits

- Enhances social license to operate.
- Environmental outcomes can be achieved. Environmental performance is likely maintained (at a regional or provincial scale).
- Caps further loss and degradation.

Risks

- Public may not accept these programs as a way to achieve environmental outcomes. Acceptance that compensation or payment allows for further disturbance in one region (while offsetting in another).
- Significant cost to develop and administer the program.

Conservation Easements

Conservation Easements are defined as an agreement between a land owner and a land trust agency to protect, conserve and enhance the environment or agriculture area.

To override conservation easements there must be one of the following:

- An emergency (i.e. access needed because there is a flood).
- An agreement between all parties.
- A decision by the Minister of Environment.

It is important that producers have an understanding of conservation easements, in order to understand the consequences and help make appropriate investment decisions to protect, conserve and enhance agriculture and the environment.

Benefits

- Is in the public's interest to preserve land for future generations. Demonstrate value for natural features on the land at a point in time.
- Easements support sustainable agriculture practices.
- Support and protect the agriculture "culture" or way of life. Ensures that agriculture is on the landscape.
- Could work as a stand-alone tool, but should be complimented with other MBI.

Risks

- Need to understand the consequences of an agreement, and fully understand the negotiation. For example the length of the agreement may not reflect the value of the opportunity lost.
- Public views the easement or agreement as rights to access land.
- Easements can be restrictive in limiting future development such as "no use" clauses.
- Uncertainties regarding capacity for land trust agencies to buy, monitor and enforce easements.

Transfer Development Credits (TDC)

TDC help direct development away from specific areas where conservation is needed. For example, agricultural land would have credits to sell to a development area. The developer would need "extra credit" if they wanted to increase the density of a project. (E.g. A developer wants to subdivide for 12 lots, but only has approval for 10).

TDC could be connected to conservation easements that would enable land to be protected in perpetuity. There would be a need to assess land suitability for development, for ES and industry (including agriculture). A Regional Plan developed in the Land-use Framework would identify regional outcomes and thresholds that the TDC would operate under. Private land owners would own the "credit" and have the ability to sell the credit. In other jurisdictions, the credit is tied to the land.

Benefits:

- Enhances environmental stewardship.
- Coordinates land-use in regions that have high amounts of growth.
- Helps reduce further fragmentation of agriculture lands.

Risks

- Strong legislation is needed.
- Capacity for stakeholder engagement.
- The process to establishing the areas to protect and areas to densify is complex and not understood by relevant stakeholders.
- Rules and application of TDC needs further clarification (could a producer sell the credit to themselves, can only developers buy credits?).

Tax Credits and Government Financial Assistance

The agriculture industry understands government programs to incent practice change. These types of tools are appealing to the industry because they are relatively market neutral and somewhat measurable over time. Generally, the public accepts that government should pay for public goods and services, and can be a more direct way to "cleanup" or get adoption of environmental practices. Incentives from government could help bridge a gap in order to provide time for market based approaches to work.

Risks

- Government need for accountability is often translated to freedom or control given from producer to government in order to receive the incentive.
- Inequity between farm sizes.
- Early adopters do not benefit from the system.
- Payment for ES from government has high administrative costs, difficulties with determining the amount with limited funding (value of the ES versus tax base for incentives, competition with other public priorities such as health and jobs), and public value of the ES is not well understood.
- ES is not maintained in the long term.
- Programs tend to be prescriptive versus outcome based.

When land is donated for conservation easement, the seller may receive a tax credit. The tax receipt is currently good for five years, and the government is exploring whether that time should be extended to a period of 15 years. A refundable tax credit is also being considered. The credit cannot be sold. One of the

biggest hurdles faced with establishing tax credits are the complexity and political challenges with changing provincial and federal taxation systems.

2.2 Recommendations

To "***build and offer a long term system that encourages and rewards agriculture producer for the provision of ES in working agricultural landscapes***" the ES project team members identified the following recommendations:

Recommendations for Industry and the Government of Alberta

1. Engage agriculture industry in identifying, managing, providing and marketing ecosystem services in the next three years by:
   - Educating and actively communicating with the agriculture industry on ES.
   - Conducting and collecting credible case studies to use as education material.
   - Developing education content based on literature review on ecosystem assessment (AENV).

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Recommendations for the Institute for Agriculture, Forestry and Environment

As the Institute for Agriculture, Forestry and Environment develop and recommend to the Government of Alberta an environmental policy framework consider the following as part of the framework or implementation plan:

3. Foster environmental market opportunities and willingness to pay for ES by:
   - Building long term commitment, capacity and infrastructure (e.g ES exchange site) to implement excellence in ES.
   - Providing observations on initiatives and approaches, scale and any insight into likely effectiveness.
   - Researching and understanding the current application of incentive tools, their types, relative dollar amounts, and the scale of application of incentives on Alberta landscapes.
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4. Ensure sustainable, tangible benefit to agricultural producers in the long term.

Recommendations for AEPA

AEPA members recognize the importance and urgency in collecting scientific information on ecosystem services in the agricultural working landscape that includes:

- Determining the current state of knowledge (types, location, extent) of ES in agriculture landscapes.
- Identifying information needs and recommending how those needs can be addressed.
- Evaluating progress of these recommendations in December 2009.

3. Environmental Market Opportunities

The Environmental Marketing Opportunities (EMO) project objective is to identify the real market opportunities and market risk of verifying production systems for the Alberta agriculture industry. More specifically, an opportunity would be considered "real" if it reduces costs, enhances revenue or maintains a market position. This objective is based on two principles. Firstly, environmental management is systematic, authentic and beneficial to the producer based on the real opportunities in the market. Secondly, existing management tools are enhanced.

The EMO Project Team examined four potential environmental market opportunities for the agriculture industry in Alberta. These four examples are believed to have a positive balance of environmental, social and economic benefits. In order for any of the proposed environmental market opportunities to be successful the project team members felt all the examples would require some level of branding that would be supported by an accountability process such as certification/verification.

1. Establish Alberta producers as **premium stewards of its agricultural landscape,** designed to attract support from consumers and the public that the agriculture industry is doing its part to improve environmental quality. This would be an "agriculture industry" reputation that recognizes agriculture in Alberta for its land, water, air and biodiversity stewardship. This overarching reputation would resonate in local, domestic and international markets.

2. Brand an agricultural value chain or component of that chain that demonstrates that Alberta grown products are "**produced in an environmentally responsible manner".**
   - Integrated Pest Management (IPM) is a tool that could be used to demonstrate that an agriculture product is "produced in an environmentally responsible manner". Marketing products using IPM may have the potential to increase market shares or capture a premium. Adoption of IPM practices can result in increased biodiversity benefits and reduced pesticide load in the soil and water.
   - Branding a product using environmental practices as one of several key attributes in a differentiation or market platform. For example, other attributes may be related to food safety, animal welfare or nutritional value.
   - Brand and label products that reduce carbon emissions or improve water use efficiency. Carbon footprint and water labels would allow consumers/customers to identify and choose products that have been produced with reduced carbon or reduced water footprint.

3. Brand a crop that has inherent characteristics which enhance the environment or a crop that is managed in such a way that it has lower impact on the environment as an "Enviro-crop".
   - An "Enviro-Crop", for example legumes (peas, beans) or winter wheat would reduce or in some cases eliminate the use of pesticides, reduce the need for fertilizer and work with nature to enhance biodiversity, improve air quality and soil health and reduce carbon footprint.
   - Native range-land used to graze livestock that retains its aesthetic view, and maintains biodiversity.

4. Promote efficient use of land, water and energy associated with intensive agriculture to increase public awareness of the environmentally friendly aspects of this type of management system. Promoting and potential branding "using less to produce more" may attract public support and could have an economic benefit and increase market shares.

3.1 Process

The EMO project was initiated in June 2008 and started with building an understanding of the terminology for environmental markets, and Appendix B includes the definitions as discussed by the project team members. A four-step process was used to develop recommendations that will meet the project objective.

3.1.1 Strengths, Weakness, Opportunities and Threats (SWOT) Assessment

The team completed a SWOT assessment of a certification and branding system. At an initial meeting, project team members identified strengths, weaknesses, opportunities and threats of certification and branding environmental attributes in a market. More details of the input can be found in Appendix D. The SWOT assessment found that verification and certification can add credibility to the system and products, and could decrease liability through documentation and due diligence. While the ability to differentiate products and document the production process could result in maintaining/increasing market access it could also create trade barriers. There could be an advantage to early adaptors but there is also a risk that costs may not be recovered. If certification becomes mandatory the early adoption advantage could be lost.

Another strength identified which is currently in place is the Environmental Farm Plan as a risk assessment tool. Project team members feel that this tool could be used as a starting point to build an environmental platform for risk management, certification and potential branding and labeling.

3.1.2 Investigation of the issue

The team used several reports and arranged for expert presentations to build a common understanding of EMO and address the team's information gaps. Studies and reports covered topics such as consumer understanding, verification and certification, approaches to eco-labeling and branding.

The key findings from these presentations are summarized below:

Capturing Environmental Market Opportunities Project Reports

The project team was presented with key findings from two reports that were completed in March 2007: Canadian Consumer Support for Environmental Attributes of Agricultural Products and International and Multinational Corporation Market Assessment[2].

This research identified the following relevant information. Like other industries, the agriculture and agri-food industry is affected by factors driving environmental sustainability including market demand, social preferences, government policy and technological change. These factors have led to increased interest from consumers towards perceived sustainable agri-food products and production systems. Specifically, there has been a growing demand for:

- Organic, natural and eco-labeled[3] products

[2] Presented by Bernie Vincent

[3] Eco-labels are considered an effective means to communicate environmental qualities and overall quality of a product. Most eco-labels are developed for products which reduce environmental damage during the use and disposal phase of production.

- Local food[4]
- Reduced food miles[5] and carbon footprint[6]
- Verification of product attributes

Recent research revealed growing environmental awareness among consumers is evident, with climate change, water quality and air quality being the top concerns for Canadians. The emergence of "green" consumers, potentially profiled as women, liberals and people with higher levels of education and income, is a reflection of these trends. A green consumer would be a segment of society that seek sustainable or environmentally friendly products and motivated by the environmental values that product represents

Eco-labels are effectively used to increase consumer information and to influence purchasing decisions of products with environmental attributes; however, validity of eco-labels through certification is important to maintaining consumer trust in the claims. The most widespread example of Canadian eco-labeling and certification is the Environmental Choice program and the corresponding EcoLogo, developed in 1988.

There are currently no food products that use the EcoLogo, indicating a gap in this program.

Furthermore, other key components of successful market penetration, aside from attribute bundling, use of eco-labels, and varied premiums, may include marketing through mainstream channels (i.e., major grocery stores) and promotion based on consumer ethics.

A review of the corporate landscape and multi-national corporations whose business and/or marketing strategy incorporates the environmental attributes associated with agriculture and food products concluded:

1. The shift toward an environmental focus within the corporate community is very real and growing.
2. The momentum behind the shift towards environmental sustainability stems from private industry and not because of government regulations.
3. There are several options available to a company for entering the environmental market place including: (a) a total approach from start-up; (b) beginning on a special projects basis; (c) a product blending approach; and (4) the selection of suppliers that comply to environmental standards set by the company.

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[4] Examples of local food initiatives are consumers who purchase food grown or produced within a 100km radius of their home; this is sometimes referred to as the '100km Diet'.

[5] Food miles are the number of kilometers a product has to be transported from the farmer/grower to various stages of production until it reaches the supermarket and the plate of the consumer. The concept also includes the method of travel of the food (i.e., air, ship, etc). The concept is simplistic, but is becoming popular with press and some environment and other 'groups'. The concept is widespread in the United Kingdom and New Zealand.

[6] Carbon footprint is a measure of the amount of carbon dioxide (CO_2) emitted through combustion of fossil fuels as part of their everyday operations by an organization.

4. Adoption of environmental strategies is being driven by customer, investor and employee pressures. Again, these pressures are real and growing.
5. The environmental response by individual companies also impacts the business cluster that operates as suppliers of products or services to that corporation.
6. Financial rewards are not guaranteed but possible. In many cases improved financial returns are due to savings from more efficient practice.
7. Work with those leaders and companies who are truly committed to sustainable agriculture and who will be successful because of it.
8. Embracing the concept of sustainability requires a long-term view. It also requires that partners in the chain value the relationships more than they do any single transaction.

Certification Research Observations

The highlights of the Certification Research Observations[7] research are:

Reasons for certification standards include:

- they enable market access
- provide the retailer/consumer with assurance
- raise industry standards and prompt suppliers to producer products according to that particular standard
- create product awareness that establish product differentiation

Examples of standards with environmental components:

- GLOBAL GAP
- Safe Quality Food
- Organic "*biologique* ***Canada*** *organic"*
- USDA Process Verified

Key findings:

- Certification frameworks for all processes requiring verification are very similar.
- Verification usually required documentation and 3rd party audit.
- Certification standards do not replace existing country requirements (regulations).
- Standards can be prescriptive (floor is cleaned by sweeping and washing with X brand of cleaner) or outcome based (floor must be clean).
- Premium is not guaranteed.
- Need the retailer to reach the consumer – while the consumer plays an important role, meeting the needs of the retailer and the standards will be essential; without the retailer it is more difficult to reach the consumer – especially in international markets.
- Certification replaces the "old fashioned hand shake" – traditionally this was acceptable because the supply chain was shorter (less players) and the producers were closer to the market – findings show the hand shake is no longer good enough.

[7] Presented by Ava Duering and Rosalie Cunningham (Alberta Agriculture and Rural Development)

The Alberta Livestock and Meat Agency held an industry engagement workshop on October 30 focused on certification and verification. Below are the participants' key findings from the workshop[8].

- Use the credibility of international standards.
- Be market focused and keep certification simple; partnerships are key.
- Standards should be national and international (not provincial).
- Certification is required to create/protect a brand. Industry should have the choice to certify, and to only certify the attributes important to each producer/processor.
- Trust and assurance were noted as the top consumer needs that certification would satisfy.
- Certification increases consumer confidence and trust in the marketplace. However, it is also important that countries as a whole importing from Canada (Alberta) have increased assurance and confidence in the product.
- While certification systems may better meet the needs of consumers, they are not necessarily aware of these systems. Therefore, certification systems may only be valuable to a small, educated portion of the market. A larger portion of the market is likely more price-sensitive.
- Certification is valuable to the marketplace, but is it valuable to the producer? Is this affordable? Who covers the costs for the producer?
- Certification adds value through trust and market access.
- Certification increases quality and accountability on the part of the producer.

One of the speakers presented five key questions that should be answered before moving forward on certification:

1. Who is your target?
2. What are the concerns and needs of key stakeholders?
3. What is your value proposition?
4. What are the mission critical success factors?
5. When times are good, how are you going to prepare for them to turn?

3.1.3 Environmental Goods and Services Workshop

The Agri-Environmental Partnership of Alberta hosted an environmental goods and services workshop on October 28, 2008. Participants learned about various systems or tools that reward or recognize agriculture producers for providing environmental benefits. Certification was one of the many systems and tools discussed at the workshop. Participants in attendance recognized the challenges with getting buy-in from an entire supply chain in order for certification to be successful. In order for certification to be successful there must be someone willing to pay for it and must also be perceived as credible.

[8] Key messages are sourced from presentations and workshops detailed report available on www.alma.alberta.ca

3.1.4 Building Recommendations on Environmental Market Opportunities

An EMO is one that has the potential to capture viable market shares for sustainable ES. Sustainability means that the EMO is environmentally responsible, socially acceptable and financially viable.

AEPA recognizes the opportunity to integrate ES, expanding the scope of production systems beyond agriculture and food products to include the provision of ES. A system that encourages and rewards producers to supply ES will result in measurable improvement in environmental health.

3.2 Recommendations on Environmental Markets

The EMO Project Team recognizes that EMO are relatively new in Alberta; however, there is an emerging trend to differentiate agriculture and food products. There is no guarantee there will be a premium for the environmental market, but benefits could include the creation of a new markets, and the maintenance of market access.

A strong enabling policy to promote the development of MBI will enhance the opportunity for the agriculture industry to progressively pursue environmental branding and marketing. Environmental certification is a tool that provides the agriculture supply chains the ability to verify claims that an environmental need has been met through the adoption of sustainable processes. Certification is a valuable tool for the brand to build credibility.

The EMO Project Team members provided overarching direction to enhance each of the four opportunities:

- The agriculture industry should evaluate and monitor the Land-use Framework as a potential EMO.
- The government with support from the agriculture industry should build a strong enabling policy to promote the development and use of MBI to support identified EMO. In doing so, the market instruments will enhance the opportunity for the agriculture industry to progressively pursue environmental branding and the marketing of those brands.
- The agriculture industry should investigate the opportunity to develop or use an existing "Agriculture-Environmental" brand (icon) that when used on a product label builds strong consumer recognition and acceptance that the products they are purchasing are certified and verified to be "eco-friendly".
- In the context of the Land-use Framework, the agriculture industry should look for ways that both urban and agriculture landscapes can co-exist.
- Investigate the validity, opportunity and risks of intensive agriculture in terms of balancing natural resource efficiency with social and economic outcomes.

Recommendations for Industry and the Government of Alberta

There must be a strong science based foundation for the agriculture industry to verify and build on EMO. Environmental benefits in Alberta need to be identified, understood and where possible quantified. The project team recognized that research, measurement and monitoring may currently exist, however to maximize opportunities for marketing (branding and labeling), literature reviews and further investigation is needed.

A comprehensive ecological understanding of Alberta's agricultural landscapes would contribute greatly to our knowledge of the current situation and enable creative and innovative land and water use decisions. Market analysis may also help the industry build appropriate certification/verification systems in order for

them to substantiate verified claims, be seen as credible, accountable and prove to consumers the environmental benefits.

In developing the following recommendations consideration was given to the export nature of the agriculture industry, the increasing demand for food, the global food crisis, the current global economic situation and the increasing pressures on natural resources (land, water, air, habitat) to produce food.

1. Agriculture producer organizations will lead discussion with the Government of Alberta to help facilitate the development of a science based system for certifying and verifying environmental claims; this would include data development, research, analysis or literature review for the following:
    a. Evaluate and quantify agriculture's contribution to biodiversity.
    b. Evaluate and quantify agriculture's contribution to water quality.
    c. Evaluate and quantify agriculture's contribution to carbon footprint.
    d. Evaluate and quantify the reduction or efficiency gains of water for irrigated crops and livestock supply chains.
    e. Evaluate and quantify the reduction of pesticide load in the soil and water through the adoption of integrated pest management practices.
    f. Evaluate and compare the use of resources (land and water) of intensive versus extensive agriculture to help the agriculture sector measure land/water use efficiency.

2. The Alberta Winter Wheat Producers Commission with assistance from ARD investigate the opportunity to brand winter wheat as an "Enviro-crop".

3. The Alberta Pulse Growers Commission, with assistance from ARD investigates the opportunity to brand pulse crops as an "Enviro-crop".

4. The poultry value chain, with assistance from ARD build a water footprint tool to measure water use efficiency. Potential reductions in water use could be used in an "eco-label".

5. Alberta Pork will lead a project with ARD to benchmark information about consumer perceptions of environmental attributes and identification of opportunities for Alberta producers to differentiate products in alignment with environmental footprint protocols.

Recommendation for the Institute for Agriculture, Forestry and Environment

The IAFE has a key role to assist the Government of Alberta with policy and programs to enable Alberta's agriculture industries to be strong competitors in the marketplace based on their environmental performance.

6. IAFE as part of its mandate consider the EMO Project Team report and include recommendations that best position Alberta's agriculture industry as a leader in environmental performance. IAFE will evaluate the Land-use Framework as an environmental market opportunity.

Recommendation for Agri-Environmental Partnership of Alberta and Alberta Livestock and Meat Agency

The Alberta Livestock and Meat Agency (ALMA) leads Alberta's livestock and meat industry in marketing, research and production to help them become sustainable, competitive and profitable. More specifically, ALMA is partnering with government and volunteer industry experts to create a business model and

infrastructure for certification/verification. EMO Project Team members have identified potential barriers and challenges with certification and branding that ALMA in a leadership role may consider addressing.

7. AEPA will pursue opportunities to work in conjunction with ALMA to:
    - Ensure the environmental certification/verification infrastructure is in place to capture identified environmental market opportunities.
    - Research and understand the potential opportunities and barriers with eco-labeling/branding with the Canadian Standards Board and Canadian Food Inspection Agency.
    - Develop a plan to remove any barriers and enhance opportunities for eco-labeling (branding environmental attributes).

3.3 Roles and Responsibilities of Government and Industry

The project team members clearly identified the role of government (at both the Federal and Provincial levels) in regards to markets as being to support and enable. The role of industry is to control and lead. Other responsibilities of government might include funding monitoring and research, developing and enforcing environmental regulations and collecting information on EMO. Government may also want to consider collecting and extending information to the industry on the environment. In terms of structure and efficiencies, barriers and enhancements may be changed, or developed, by the government.

The agriculture industry is responsible for leading and facilitating the development of market opportunities and any standards in a certification processes. Industry is also in the best position to decide on strategy and best way forward. This might include determining if there is a critical mass in the market or supply in the production chain. Industry should lead consultations and discussions with retailers and others in the supply chain. Industry is responsible for branding and marketing.

4. Communication Plan

A key task for AEPA is to communicate and consult with agriculture stakeholders, government and broader environmental community. The following are communication objectives for this report and AEPA on ecosystem services and environmental markets.

Objectives

- Present a common and credible voice to IAFE, government, agriculture industry and broader stakeholder groups on ES and environmental markets.
- Support the agriculture representatives on the board of IAFE with information regarding ES and environmental markets that are important and relevant to the agriculture industry.
- Extend information to the agriculture community, educate on ES in terms that are meaningful and relevant.
- Collect input from the agriculture community on ES policy and environmental market strategies, ensuring key members of the community are aware and have the ability to respond to the recommendations the project teams have developed.
- Present the AEPA as a credible voice, using a consensus process to increase awareness, understanding and support of the project team's recommendations.

4.1 Target Audiences and Communication Tools

AEPA Board Members

AEPA Board Members understand the issues, process and recommendations of the ES and EMO Project Teams. Communication tools include presentations at board meetings and status updates, and information papers and final report, approved by AEPA Board.

Institute for Agriculture, Forestry and the Environment

The IAFE was created by the Government of Alberta in January 2008. The IAFE aim is to identify and lead in the development of environmentally-friendly market based options that will continue to green Alberta's renewable resource industries while making them more innovative and competitive in the marketplace. AEPA is the key forum for agriculture community to provide input to IAFE. Communication tools include developing key messages that will support the agriculture members of the IAFE board, updates at AEPA board meetings, information packages and final report to IAFE.

Government

AEPA provides a balanced forum for government, agriculture industry and other stakeholder to have ongoing dialogue and provide recommendations on ES policy framework and environmental market strategies. As a member of the AEPA board, government will be engaged on the ES policy and EMO strategy development. Government will view AEPA as a credible source of information. Communication tools include key messages and updates to government representatives and shared with other government staff, information packages and the final report.

Agriculture Industry

The agriculture industry recognizes the value of the environment and wants to be recognized by public as good stewards of the environment. The agriculture industry has the opportunity to capitalize on ES and EMO, expand the scope of their production systems beyond agriculture and food products to include the provision of ES. Communication and engagement of the agriculture industry on policy decisions is essential for buy-in and success. The policy frameworks developed for ES and the strategies to enhance markets will reward producers for providing ES and have a positive net return for agriculture and the environment. Communication tools will include; information packages that may be used in producer newsletters, presentations to producer organization boards, brochures or "one-pagers" to educate producers and provide instruction on how to provide additional information, and workshops to educate and give industry an opportunity to provide direct input.

Broader Stakeholder Groups (including Environmental Non-Government Organizations and Science Community involved with ES research)

Broader stakeholders may bring environmental and social perspectives to the process ensuring the recommendations developed are balanced and fair. A deeper understanding of the environmental and social priorities assure the public, government and agriculture industry that the process is credible, based on science and that informed decisions are made. AEPA communication tools include website, joint meetings and key messages from meetings to be shared with environmental non-government organizations and science community that are involved in ES and environmental market research. Information packages will also be developed to summarize and collect perspectives on the recommendations and conclusions in a draft report.

5. Concluding Remarks

The Agri-Environmental Partnership of Alberta makes decisions through the investigation of the issue, dialogue, consultation and consensus. AEPA's focus is on aligning or coordinating strategic actions and developing and recommending policies and strategies that contribute to the agriculture and environmental outcomes.

They strive to find solutions that achieve positive social, environmental and economic outcomes. Consultation and communication will all relevant stakeholders are essential in a balanced and fair approach to policy recommendations. This includes partners being committed to two-way communication between the partner members and other stakeholders to learn and share information in a timely manner.

To reach a maximum potential for environmental policy and EMO, a strong partnership between the government and industry will be needed to develop the policy, systems and process for implementation.

The project teams recognize that the industry must be engaged and take a lead role in developing environmental certification standards that link directly to existing and potential marketing and branding strategies. As AEPA members are carefully considering EMO, and investigating environmental certification and verification, a logical next step may be to develop environmental standards.

There is an opportunity for Alberta's agricultural producers to identify and provide ES while "greening" growth in the province. Clearly, public attention to environmental outcomes and industrial impact on the environment is increasing. The agriculture industry needs to consider environmental market demands, in order to recommend balanced policy decisions. Those policies can then facilitate the desired environmental outcomes, as well as build a profitable, sustainable and competitive industry.

Project team members are confident that the consensus-based process helped to build a common understanding of both environmental markets and ES and identify appropriate recommendations to move these policy and market opportunities forward in a meaningful manner.

Appendices

Appendix A – Project Team members

EMO Project Team members

Name	Organization
Fiona Briody (Co-Chair)	Alberta Agriculture and Rural Development
Diane McCann-Hiltz	Alberta Agriculture and Rural Development
Ashley Rietveld	Alberta Hatching Egg Producers - Poultry
Lorrie Jespersen	Alberta Milk
Don Reiter/Paula Negraes	Agriculture and Agri-Food Canada
Darcy Kirtzinger	Crop Sector Working Group
Stuart McKie	Alberta Pork
Kim Schmitt	Ducks Unlimited
John Wozniak	Alberta Barley Commission
Ward Toma	Alberta Canola Producers
Rich Smith	Alberta Beef Producers
Rick Istead (Co-Chair)	Alberta Winter Wheat Producers
Tom Jackson	Alberta Pulse Growers
Carrie Selin (Project Manager)	Agri-Environmental Partnership of Alberta

ES Project Team members

Name	Organization
Doug Sawyer	Alberta Beef Producers
Wayne Tuck	Alberta Winter Wheat Producers
Rients Palsma	Alberta Milk
Darcy Kirtzinger	Crop Sector Working Group
Sheri Strydhorst	Alberta Pulse Growers
Kim Schmitt	Ducks Unlimited
Jurgen Preugschas	Institute for Agriculture, Forestry and Environment
Roger Bryan	Institute for Agriculture, Forestry and Environment
Carol Bettac	Alberta Agriculture and Rural Development
Stuart McKie	Alberta Pork
Gary Telford	Agriculture and Agri-Food Canada
Fiona Briody	Institute for Agriculture, Forestry and Environment
Tom Jackson	Alberta Pulse Growers
Martin Van Diemen	Alberta Chicken Producers – Poultry
John Richter	Alberta Egg Producers – Poultry
Carrie Selin (Project Manager)	Agri-Environmental Partnership of Alberta

Appendix B – Definitions (from Wikipedia found at http://en.wikipedia.org)

Assurance (or quality assurance):
Quality assurance is the set of planned and systematic actions necessary to provide appropriate confidence that a product or service will satisfy the requirements for quality.

Example: Canadian Quality Assurance (CQA) Program is the Canadian Hog industry's on-farm program to support the production of wholesome pork. CQA assures customers at home and abroad that Canadian pork producers are following standards of production that promote a safe and wholesome product.

Audit:
An evaluation of a person, organization, system, process, project or product to ascertain the validity and reliability of information. Quality audits are performed to verify the effectiveness of a quality management system.

Example: Alberta Forest Product Association created FOREST*CARE* that uses a formal, independent audit to earn and maintain status in the program. FOREST*CARE* is an Alberta based stewardship program, with standards that exceed government requirements.

Certification:
The process that confirms certain characteristics of a product, person or organization. Product certification is the process of certifying that a certain product has passed performance or "quality assurance" tests or qualifications requirements stipulated in regulations or standards.

Example: Landfill and compost facilities are required to have certified operators to supervise the day to day operation. Operators that meet the requirements may receive certification under the Alberta Environmental Municipal Waste Management Facility Operator Certification Program

Corporate Social Responsibility (CSR):
Where companies consider the interests of society by taking responsibility for the impact of their activities on customers, suppliers, employees, shareholders, communities and the environment. Their obligations go beyond legislations and are voluntary actions to improve the quality of life for their employees, communities and society.

Example: EnCana recently released their Corporate Responsibility Report that outlines the company's approach to meeting corporate responsibility commitments. The report highlights performance based on social, economic and environmental indicators. EnCana uses Global Reporting Initiative (GRI) guidelines to assist in the review of their performance. GRI's include organisational information, governance, economic, environmental and social performance and reporting parameters.
www.encana.com/wcm/groups/internet/@p_www/documents/web_content/p006587.pdf)

Eco-labelling or Eco-branding:
A labelling system for consumer products (including foods) that are made in fashion to avoid detrimental effects on the environment. All eco-labelling is voluntary, meaning not mandatory by law.

Example: Canada Canadian Standards Association "Sustainable Forest Management (SFM)" mark to indicate that the product originated from a certified forest, standards and criteria were developed by the Canadian Council of Forest Ministers in an open, transparent, multi-stakeholder consensus-based process. Products

can include traditional forest products such as lumber, pulp and paper to maple syrup and Christmas trees. (http://www.certificationcanada.org/english/csa/)

Ecosystem Services (defined by Millennium Ecosystem Assessment, and adopted by AEPA):
Ecosystem Services are often defined as environmental outcomes that can be obtained directly or indirectly form the natural environments such as clean air, water, soil and biodiversity. Ecosystem Services are recognized internationally in four categories of provisioning, regulating and cultural and supporting.

Example: Agriculture currently provides many ecosystem services in all categories such as food, fibre, carbon capture, water quality through riparian management, panoramic views, soil formation through reduced tillage and habitat for wildlife.

Environmental management system (EMS):
Is part of a management system of an organization in which specific competencies, behaviours, procedures and demands for the implementation of an operational environmental policy of the organization are defined. The implementation of an EMS should lead to improved environmental performance and more consistent legal compliance

ISO 14001:
Environmental management standards that help organizations minimize how their operations negatively affect the environment and comply with applicable laws and regulations. ISO 14001 specifies requirements for establishing environmental policy, determining environmental aspects and impacts, planning environmental objectives and measurable targets, implementation and operation of programs to meet objectives and targets, checking and corrective action and management review.

A part of the ISO 14000 series, a set of internationally recognized standards based on a process or systems approach rather than a specific prescriptive approach. ISO 14001 focuses on environmental management systems for small to medium sized businesses.

Example: Weyerhaeuser Grande Prairie/Grand Cache has achieved certification to the ISO 14001 Environmental Management System standard and was audited by the Canadian Standards Association.

Verification:
The act of reviewing, inspecting, testing to establish and document that a product, service or system meets regulations, standards or specified requirements.

Example: Green Alberta designed and uses their own verification tool that confirms that the information put forth by building manufactures is accurate and true (http://www.greenalberta.ca/index.php)

Validation:
Verification is ensuring “you built the product right”, validation is ensuring “you built the right product”. Validation is the process of checking if something satisfies a certain criterion, or confirms that the needs of a consumer, stakeholder or user of the product, service or system are met.

Example: The Alberta Health Care Insurance Plan requires applicants to meet validation requirement that are documents that prove Alberta residency, identity and legal entitlement to be in Canada. http://www.health.alberta.ca/ahcip/ahcip_validation.html

Appendix C – Workshop Summary

Available by request from Carrie Selin via email (carrie.selin@gov.ab.ca) or phone: 780-427-3908.

Appendix D – SWOT Analysis

Strengths

- Adds credibility to the system, products and environment
- Adds value to the product
- Adds safety features to the consumer
- Opens market access
- Maintains market access
- Diversity in the province – meaning lots of potential
- Leadership in Alberta readiness to respond to export customers that may start to demand a certified product
- Industry recognized that from an environmental perspective that they may not be currently doing enough
- Gives documentation to the good things industry is doing
- Provides a forum to market products
- Potential to differentiate
- Proactive in developing standards, taking action before someone (government or market) demands
- Competitors may not be doing this – gives a market advantage
- Encourage beneficial management practices for environmental stewardship
- Basis for identifying environmental goods and services
- Market based rewards for environmental goods and services
- Timing is right because of the media attention to Alberta – "dirty oil"
- Improves the sustainability image for Alberta encourages dialogue and communication in agriculture sector.

Weakness

- may not be full cost recovery
- added bureaucracy
- may become "way or cost of doing business" versus a way to differentiate
- large amount of resources to increase consumer awareness in order for benefits to be realized (profits)
- competitors may not be placing resources here… leading to uncompetitive industry
- creates market barriers in interprovincial trade and transportation
- added liability with documentation – unforeseen problems become documented
- takes time for training and to change the structure of a business
- uncertainty in how fast or when
- regulations that lead to more regulations
- can move away from voluntary and become mandatory
- effective standards means everyone has to do – need enough of the product to capture the market benefit
- Commodity market structure may need to change.
- Uncertainty about the product/system when its not recognized
- Need for consumer education – expensive
- We do not necessarily feed the needs of the market
- Miss-read the market

- Some environmentalists may perceive that the system does not go far enough or fast enough.

Opportunities

- employment
- transparency
- balance system, balance policy
- branding – market what we already have
- recognition from environmentalists
- grow markets
- industry engagement in process to set the standards/policy in a practical manner
- protect markets
- if a premium is achieved – may show flaws in the commodity market
- since we are in beginning stages – can harmonize the system
- ISO 14001 – global standard, recognized as the deluxe system should be the industry goal
- Understanding or tighter alignment in the value chain
- Create or enforces new value chain opportunities
- Decrease liability thought documentation and due diligence
- Society invests in agriculture through EG&S

Threats

- limiting market because large portion is commodity
- inability to recover costs
- consumers are fickle
- WTO barriers
- If you create a premium – others will then participate/certify to take the premium, and then becomes a market standard
- No-one participates – limited supply to capture the market premium
- Is this the "buzz" word or initiative – end up with more than one system
- Becomes too complex, costly and fails
- Tangible loss for late or non implementers