



International Think Tank on Market-Based Instruments to  
Preserve, Support and Enhance Ecosystem Services

Summary Report

March 2009

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for the Institute for Agriculture, Forestry and the Environment**



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## Introduction

The world is changing at an ever-increasing pace. Conserving the planet's environment is widely accepted as one of the primary challenges of this century. Economies are undergoing fundamental shifts in their structures and institutions. Policies and strategies which seemed certain so recently are now being scrutinized through new lenses and realities. It's no surprise that governments are under increasing pressure to sustain and grow their economies while protecting the environment and natural assets.

Alberta is no different. It faces the same challenges and Alberta is prepared to lead in adapting to new global realities and opportunities.

The province is looking at strategies for its economy, environment and its resources in more integrated ways. It is open to the best ideas in the world - and seeks the best outcomes from innovation and change.

With this attitude of openness the Government of Alberta (GoA), through the Institute for Agriculture, Forestry and the Environment (IAFE), invited some of the world's leading experts in the emerging policy field of market-based instruments (MBIs) to drive Ecosystem Services (ES) to come together and provide advice at an International Think Tank held in February, 2009 in Banff.

The IAFE asked these experts to tell Alberta how to "get it right" as the province moves forward to apply economic tools to generate desired environmental outcomes.

Discussions were wide-ranging, frank and robust. The highlights are summarized in this report. Consistent advice from the Think Tank participants is outlined in the conclusion. Primary Points were:

- Start with an understanding of the ES problem before devising a specific market-based solution.
- Don't underestimate the need for public support for a shift in policy direction of this nature.
- Acknowledge right from the start of program design that setting ES outcome targets, and meeting them, is key to the credibility of the ES market.
- Verification and certification processes are an essential ingredient to developing and sustaining marketable ecosystem services.
- Resolve private property issues as part of the policy framework. It will be a significant barrier to any success if not addressed up front.
- Develop the capacity and knowledge about MBIs and ES in the public and private sectors. Policy makers and program people need to understand the options, experiences and realities of this new policy direction.
- Alberta has an opportunity to lead in this new policy area – and should move quickly on some ready pilot projects.

In order to gain an understanding of what has been done in this emerging policy area in other jurisdictions -and what is currently in development -the IAFE hosted an International Think Tank in Banff, Alberta from February 5 to 7, 2009.

The IAFE Board would like to thank everyone who participated in the International Think Tank for the quality of their discussions and for the contribution made to future policy development in Alberta over the course of these few days.

## The Opportunity to Use Market-based Instruments to Generate Ecosystem Services

Government policy makers around the globe are shifting their perspective on environmental conservation from identifying environmental compliance as a cost, to integrating environmental outcomes as a *new way of doing business*.

Here in Alberta, there have been a number of key policies developed in the last five years that include opportunities to use MBIs within their frameworks. For example:

- *The Land Use Framework*: This policy has identified six MBIs that have the potential to be used to encourage land stewardship (public, private and transboundary).
- *The Water for Life Strategy*: This strategy sets out an intention to explore the application of MBIs along with other policy tools to enhance water productivity and conservation. It also speaks to setting a value for water and enabling transactions among parties. In response to this strategy, a Cross-Ministry Working Group on Water Strategy Economic Tools has been established within the GoA.

In 2008, the Government of Alberta established the Institute for Agriculture, Forestry and the Environment. The IAFE is a key part of the government's commitment to managing the environmental pressures resulting from Alberta's economic growth. One of the Institute's mandated roles is to recommend a policy framework for market-based policies and processes to encourage environmentally-sound practices in Alberta's agriculture and forestry sectors.

The Institute believes the net result of applying the right mix of market-based instruments to environmental conservation and enhancement in Alberta can be an increase in the level of environmental sustainability, and the emergence of value-added profit centres for its forestry and agriculture sectors.

### What are Ecosystem Services?

Ecosystems, and the biodiversity contained within them, provide a stream of goods and services which are essential for society's well being. Ecosystem Services are the benefits that people obtain from these natural systems.

Ecosystem goods are things that are produced from natural assets like soil, water, plants and animals. Ecosystem services flowing from natural assets provide society with financial, ecological and cultural benefits. These services include fundamental life-supporting ecosystem functions such as clean air and water, water storage and flood control, and pollination of crops and other plants, as well as less tangible cultural, spiritual and educational services.

A variety of policy tools and instruments can be used to enable environmental enhancement and stewardship. These include regulatory mechanisms that use strict terms and conditions, or more flexible policy mechanisms such as market-based instruments which recognize and encourage the behaviours and practices that provide ES.

*"Water property rights are created by government legislation. Carbon markets are created by government legislation. In many cases governments get it wrong. If you don't get the market design right, you risk a market failure. A very important part of our work is working with government to make sure that the regulatory framework will produce the desired real-world result."*

*Think Tank Attendee*

## What are Market-based Instruments?

Market-based instruments engage the marketplace to affect people's behaviours in order to create desired ecosystem services. The underlying rationale is that human beings react to market incentives. Policies, programs or initiatives can use MBIs to provide economic motivation or incentives to achieve specific environmental and resource management objectives in certain circumstances.

MBIs alone will not improve the environmental performance of individuals and organizations, however, they can be a viable and effective policy option to encourage systems and practices that result in environmental enhancement and stewardship.

MBIs include a range of economic tools that use the market to influence the behaviour of people and organizations. They are generally facilitated through a regulatory framework or with a regulatory backstop for assurance. MBIs can be grouped into the following market incentives. Some MBIs fit into more than one of these categories:

- *Payment for Ecosystem Services (PES)*: paying landowners directly to change certain practices and behaviours (payments might be by NGOs, governments or other agencies). This has been the most common global economic tool to date to affect environmental outcomes.
- *Market prices*: changing market prices through user charges, taxes, subsidies, etc.
- *Market rights*: capping or adjusting the quantity of a product or pollution emission, and linking that cap or quota to a market; and
- *Market advantage*: creating new markets or improving advantage within existing markets such as information disclosure (eco-certification).

## Uses of MBI's

Research indicates that, in certain circumstances, using MBIs can be more efficient and effective than using regulatory instruments. MBIs can provide positive incentives (if designed properly), so participants are more willing and open to change. MBIs are less prescriptive and more flexible, and they can encourage participants to seek creative solutions to increase efficiency. However, experience also shows that the most effective approach is often the use of optimal mix of policy tools.

*"Payment for environmental services is a different way of saying subsidies.  
When you cannot make agents change their behaviour you pay them to do it."  
Think Tank Attendee*

## Other ways MBIs can be used are:

- When regulatory approaches are difficult to design, implement and administer. MBIs are likely to outperform other policy instruments. However, MBIs might not be appropriate as stand-alone tools for controlling toxic substances that accumulate in the environment. This may require a direct regulatory approach.
- MBIs may have the potential to lower costs associated with possible environmental outcomes, for example, as a result of reducing costs for compliance.
- MBIs are also a good choice where there is scope for innovation in improving environmental performance.
- When there are many solutions to a problem, and each solution differs in cost.
- MBIs help to include missing environmental attributes in market prices, allowing society to make more informed decisions about how much of a product or service to produce and/or consume.

## The IAFE International Think Tank

The development of policies, legislation and specific initiatives to enable market-based initiatives for ecosystem services in Alberta will require careful planning and the use of global best-practices.

The IAFE International Think Tank forum brought together a number of the world's leading thinkers on market-based instruments for ES to share their expertise and provide guidance and advice to the IAFE's Board. The goal of the International Think Tank was to be a catalyst for the development of a well-informed Alberta MBI policy framework by sharing the ideas of national and international experts in terms of preserving, supporting and enhancing ecosystem services.

*"Markets reward effort and innovation. Where markets don't exist, innovation isn't stimulated. So our systems produce too much food and pavement, and not enough ES."*  
Think Tank Attendee

### Focus for Discussions

The International Think Tank was chaired by Dr. Vic Adamowicz, Think Tank Chair, Associate Dean (Research), Faculty of Agriculture, Life and Environmental Sciences, University of Alberta.

Participants had the benefit of hearing three keynote speakers address one of three core topics below. Discussants followed these speakers with presentations on various aspects of that topic. The full group of participants then engaged in a wide-ranging discussion. The three core topics were:

***Ecosystem Services*** - Speaker David Brand, talked about payments for ecosystem services and the future of land management. He cited a number of specific MBI examples underway in Australia. Discussants who followed addressed such issues as:

- How do you know you have an ES product and how do you ensure it becomes a commodity?
- How do you make a public good a private good?
- How to measure outcomes.
- Trends in defining ES products.
- How certification of products link practice to objectives.

***Market-based Instruments*** - Speaker David Zilberman addressed the primary issues and concerns in moving from command and control to market-based instruments to meet specific environmental objectives. Discussants considered such issues as:

- What might Alberta's opportunities and challenges be relative to ES?
- What makes an MBI robust and sustainable?
- What can the unintended consequences be of certain MBIs?

***Institutional Innovation*** - Institutional innovation in this context refers to changes in the "rules of the game" such as legislation, governance structures and policies that lead to improved environmental policies and practices. Speaker Jim Salzman addressed what institutional innovations or levers are required or effective in moving towards MBIs for ES. Discussants spoke to their specific experiences in operationalizing market-based incentives, and how their experiences might be transferable to Alberta.

The following day, salient points from discussions on each of these topics were synthesized and used to focus on the topic of *Developing Directions and Policy Setting*. This final discussion translated the spectrum of advice and insights into ways to develop appropriate MBI policies, and how Alberta might proceed to "start the ball" rolling and introduce MBIs as an effective policy tool.

## Speakers

### ECOSYSTEM SERVICES

#### **David Brand**

Chairman and Managing Director New Forests Pty Ltd.

### MARKET-BASED INSTRUMENTS

#### **David Zilberman**

Professor of Agricultural and Resource Economics, University of California, Berkeley

### INSTITUTIONAL INNOVATION

#### **Jim Salzman**

Samuel Fox Mordecai Professor of Law, Duke Law School  
Nicholas Institute Professor of Environmental Policy  
Nicholas School of the Environment and Earth Sciences  
Duke University

## Discussants

### ECOSYSTEM SERVICES

#### **Earl Dotson**, President/CEO

Validus Services

#### **Shane Gabor**, Research Biologist

Ducks Unlimited Canada

### MARKET-BASED INSTRUMENTS

#### **David Primozych**, Executive Director, Willamette Partnership

#### **Nancy Olewiler**, Professor of Economics

Simon Fraser University

### INSTITUTIONAL INNOVATION

#### **Gary Stoneham**, Chief Economist

Department of Sustainability and Environment  
Victoria, Australia

#### **Stewart Elgie**, Professor of Law

University of Ottawa

## Participants

For a full list of participants see Appendix 3.

Senior Government of Alberta representatives including Minister of Sustainable Resource Development, the Honourable Ted Morton, participated in the discussions throughout. Public sector participants offered commentary and asked questions from a wide range of perspectives, which reflected their diverse roles and expertise. The Honourable George Groeneveld, Alberta's Minister of Agriculture and Rural Development also attended a portion of the sessions.

Presentations delivered by speakers and discussants are available. See Appendix 4.

## **Setting the Stage for Discussion**

Natural capital consists of natural resources, environmental and ecosystem resources, and land. These resources are assets that yield ecosystem services over time which are essential to the sustained health of our environment and the economy.

On the opening evening of the International Think Tank, Dr. Brad Stelfox, Adjunct Professor, Department of Biological Sciences, University of Alberta, and Department of Environmental Design, University of Calgary, presented an overview of the ecosystems pressures on the Alberta landscape. Dr. Stelfox pointed out that many diverse activities and industries in Alberta are putting cumulative pressure on our natural capital.

Dr. Stelfox concluded that the current “market” incentive structure in Alberta rewards farmers, ranchers, foresters and energy companies for producing products, but not for maintaining and enhancing benefits. The subsequent loss of natural capital carries economic risks with it, as Alberta must have adequate supplies of water and land to produce the commodities and services that drive its economy and support its growing human population.

He also commented that GOA Ministries handling resource-related portfolios need to ensure greater policy alignment. He indicated that natural capital is currently not part of the economic equation in Alberta, nor in many other jurisdictions. However, Alberta has a distinct, and timely, opportunity to integrate natural capital considerations into its decision-making using diversified, sustainable market incentive structures.

## **Directions to Alberta from the International Think Tank**

In their discussions, participants acknowledged that there has been a historical conflict between resource development and environmental goals. The time has come for the synergies between these two policy objectives to be identified, aligned and targeted in order to respond to the realities of today and to develop appropriate policies for the future.

Participants made the case that the development of markets for ES can be economically sound when designed and implemented with appropriate care. MBIs can achieve environmental goals at a substantial economic saving when compared to other approaches, however, participants were clear in saying that government leadership will be critical to create markets for specific ES in Alberta.

There was consensus that a viable ES market in Alberta would create:

- Investment that makes a difference to the environment
- An efficient, fair and transparent way for people to buy and sell environmental benefits
- Business models that make ecosystem assets profitable

## **Advice to Alberta from the Experts**

A distillation of advice and direction from the presentations and discussions at the Banff session has been framed in two distinct sections which follow. Each section integrates input and advice from all three International Think Tank topic areas: (Ecosystem Services, Market-based Instruments and Institutional Innovation).

### **Section One**

Experience to Support Making Sound Policy Decisions. Information summarized in this section can be used in developing decision frameworks as Alberta policy makers design and develop specific MBI initiatives.

### **Section Two**

Implementation Advice. The synthesis of advice in this section focuses on how Alberta should move to implement MBIs in Alberta. It includes broad strategic directions for an Alberta MBI policy framework, and more specific direction on next steps for implementation.

## **Section One: Experience to Support Sound Policy Decisions**

The broad range of participants' experience seeded a rich discussion on ES, markets, and MBIs. The following themes arose repeatedly:

### **Ecological Complexity**

We heard many times that market-based approaches must be tailored to the ecosystem. More specifically we heard that:

- Ecosystems are dynamic, and market-based instruments must therefore recognize the particular dynamics, and the economic context, of markets.
- Because markets are also dynamic, MBIs must have the capacity to adapt. MBIs must address factors such as existing property units, public perception of urgency, fairness and costs, and the dynamic nature of benefits and income available to a specific ES initiative. This means an adaptive management approach should be in place, where lessons learned continuously feed improvement of MBI policies and mechanisms.
- Distributional issues must also be considered in order to avoid market failures. Think Tank participants warned about the potential for market failure if ES are not fully or efficiently allocated across the market, due either to the nature of the ES, the inefficiency of the MBI or a lack of an existing market. We also heard that there is the potential for market failure if the ES value is not perceived or understood by consumers.
- Participants said frequently that there are often unintended consequences of specific market interventions. Policies must be rigorously tested in order to avoid negative consequences.
- Adding to complexity is the fact that ES may provide local, regional, national and global benefits (for example, it was noted that preserving wetlands has potential benefits at all levels). In addition, certain MBIs may be better applied at a landscape level than at a regional or provincial level due to the nature of a particular ES. Policies and programs should recognize this distinction.

At a landscape level, MBIs such as water quality trading and auctions may work best given the market scale. At a regional or provincial level, these mechanisms may also apply, but others such as offsets, cap and trade, tradable rights, conservation agreements and tax credits can also be effective.

### **Problem Definition**

One of the points on which participants gave their clearest and strongest advice was in how to decide which ES and MBIs present viable market opportunities. The group reiterated several times that policy makers must look first at the underlying environmental problems – then examine the best approaches to resolving them. Taking this “problem first” approach will inform which ES, as well as the best design of MBIs. They said, *“Identify the problem, then tailor the market solution.”*

One approach to defining the ES problem is conducting an ES assessment. These assessments identify which ES are at greater risk – and why. They provide an appraisal of the economic, social and environmental values in an ecosystem in order to allow decision makers to better understand the connection between the environment and human well being. However, there were differing views among the experts about the extent to which policy and program action on MBIs should wait on full and comprehensive ES assessment processes to be completed. The advice to Alberta was to move on those ES where the problem is currently identified.

### **Market Requirements**

Not all markets are about bringing traditional buyers and sellers together. Many markets involve the government as a single buyer, particularly regulatory markets.

When setting policy to establish markets, participants identified a number of key elements which must be carefully considered:

- Uniform standards to ensure a level playing field.
- Market confidence and validity for buyers and sellers.
- An institutional framework for registering transactions that provides certainty and records of transaction.
- Market oversight.
- Strengthening and promoting investments made in the markets over time.

Policy makers should also understand and consider the architecture of successful market transactions.

Key elements of market architecture which were discussed included:

- *The need to understand the transactional requirements of providers (public or private landowners or communal landowners or communities) and beneficiaries.* Buyers and sellers need to know the attributes of the transaction: what is delivered, when, how and for what price. The specific benefit of each MBI initiative must also be clearly defined and communicated to the marketplace. Buyers also want to know that the ES being purchased will have continued value – and that its value is certified.
- *Market demand.* While there is latent demand for ES, there is often little or no effective demand for these services, due to the absence of institutional frameworks to support them. The purpose of MBIs is to harness the latent demand and encourage demand growth for ES.
- *Mechanisms for the providers and sellers to agree on price and measures of service provision* (e.g. mitigation and offsets, subsidies, payment for service, auctions).
- *Mechanisms to set a value for an ES* (how much we should pay for it). Valuation processes need to consider the triple bottom line of economic, environmental and social value. Currently, quantitative and qualitative valuation mechanisms are still evolving as more ES are valued and as markets begin to respond to pricing strategies and deliver data. There is debate among MBI policy experts about whether policy makers should wait while more developed valuation mechanisms prove themselves, or whether projects should proceed and adjust as markets and data emerge.

Participants advised that once an ES market is established it must be nurtured and developed to maturity.

*"In terms of conditions for using MBIs in Canada; we have very few regulations in this area, it is mostly voluntary."  
Think Tank Attendee*

### **Risks/Unintended Consequences**

Unintended consequences can include slippage, exacerbation of other ecosystem issues, monopolistic pricing, secondary losses such as tax revenue in the longer term, and the impact of present performance on future earnings.

Another unintended consequence raised by participants was the potential impact of myriad factors on transaction costs. Factors such as the level of education and awareness about ES options and opportunities, monitoring, verification, certification, record keeping, auditing – all drive costs upwards and jeopardize viability. Participants advised that there are a number of existing procedures and tools Alberta can examine to reduce these costs.

Further unintended consequences are social risks such as the potential for greater socioeconomic marginalization of aboriginal peoples and the poor (among other social groups).

### **Outcomes and Measurement**

Throughout discussions, participants said that it is critical to clearly define the desired outcome (a measurable improvement in such factors as water quality or human health) in an ES and to track it over time.

It is equally important to know how best to measure those outcomes (what metrics, such as efficiency standards).

Participants advised Alberta policy makers to "do the market research and use it to design the programs." In order to target incentives to generate maximum benefit and ensure the performance of any MBI, we heard that policy makers must know:

- The cost to achieve the identified outcomes.
- Who is gaining and losing from application of this market mechanism.
- What conditions make various targeting approaches optimal.
- What the potential adverse, unintended consequences might be.

Outcomes must be tied to practices and standards, and practices and standards must be measurable, monitored, tracked and reported to ensure program compliance, efficiency, etc. In addition, protocols for developing a common set of performance measures should determine participation rates required for viability, measure total costs and benefits of MBI programs.

The design and applications of MBIs is most often context specific. In determining the appropriate MBI to generate specific ES results, strategies should be based on sound science and economics for end results must be clearly defined. It was also said many times that setting baselines and establishing units of measure is critical.

At the same time, measurement and monitoring need to be feasible. One participant put it bluntly when he said, *"ES is controlled by the worker in the field, not a scientist in a lab"*. Advice was also given that *"Alberta may have to start performance measurement with moderate levels of rigour and learn by doing, thereby increasing rigour"*.

Third party audits are key to the credibility of ES markets. Verification methodology should certify that the practice is meeting objectives – and many participants made the point that verification should be defensible.

Consistent methods for evaluating programs should support adaptive management practices required to inform ongoing program development.

There was agreement all around the discussion tables that without all of the following components in place, MBIs would be vulnerable to failure: credible measurement, reporting, compliance, monitoring and dispute resolution mechanisms.

*“There are always more things that we want to know. What we need to know is how to make systems work now. Don’t become paralyzed by mounds of data – make it real now, make it perfect later.”*  
*Think Tank Attendee*

## Section Two: Implementation Advice

### Broad Strategic Directions

#### Alberta’s Opportunity

Experts at the Think Tank started their discussions by giving their perspectives on Alberta’s opportunities. They said that, given trends, Alberta should consider greater global alignment with major ES markets such as carbon. These markets are emerging quickly and early participation would position Alberta for longer-term market competitiveness. At the same time, a number of Alberta participants said we must keep a sharp eye on how specific MBI policies – and the MBI policy framework as a whole – might affect the province’s competitive position (positively or negatively) in domestic and export markets.

The Alberta government was also advised to play a lead role in establishing policy and regulatory frameworks to create market demand for ES products. Governments have a pivotal role to play as market regulator, in product standardization and verification and monitoring. It is also clearly the role of government to direct legislative requirements.

#### Property Rights

Another issue that was repeatedly mentioned was the need for governments to acknowledge and address issues related to public/private goods, lands and rights in order for MBI policies to be viable. These issues include:

- Issues of “duty of care” (responsibilities for environmental stewardship for which land owners should be held accountable). A baseline of landowner behaviours needs to be established, beyond which incentives might be provided.
- Issues of compensation.
- The ability to allocate ES rights much like resource rights.
- The means to clarify and secure rights to create or use ES via legislation or agreements in order to create rewards or payment obligations.

*“Property rights – if farmers have the right to allow manure to run off into the stream, we’re paying them not to exercise that right. Once you pay them not to exercise that right, you’re crystallizing that right. Now they definitely have it.”*  
*Think Tank Attendee*

## **Communicating with the Public**

We heard as well that communications to the public will be critical to the credibility and effectiveness of market-based policy implementation.

This is a big challenge. Public awareness and attitudes in support of environmental protection and enhancement may be at a high in society today, but understanding ES will take solid messaging and communications support. People need to understand the social, economic and ecological values of ES.

The experts advised that public communication and education efforts must position ES payments as a fair price/fair deal for a public good, versus a payment to stop bad behaviour by private interests. They told us that the ability to influence this perception will be affected by what people think the baseline should be on duty of care.

## **Other Considerations**

Policy approaches and strategies should identify opportunities for linkages between, and bundling of, ecosystem services. Australia has used bundling to leverage MBI initiatives to a greater effect. For example, there are case studies on how carbon, water and biodiversity have been combined on landowner property for multiple benefits and added ES value. The recognized rights of Aboriginal peoples in Alberta and the province's obligations under treaties and agreements should be acknowledged in the policy framework.

Innovations in regulation will be required for MBIs to be effective. At the same time, policy and regulatory environments must be flexible in order to enable the development and maturation of ES markets. For example, they must be adaptable to changing economic and environmental conditions and to how outcomes can best be achieved. As mentioned, this is key to developing an adaptive management approach to MBI policies.

## **Next Steps for Alberta**

Participants acknowledged that Alberta has a unique opportunity to learn from other markets and experiences in developing its own rules and guidelines.

### **Identifying Priority ES**

Participants suggested that the spectrum of ES opportunities in Alberta can be viewed through the "lens" of:

- *Strategic ES*: those government-driven opportunities, public policy initiatives directed at a public good. In Alberta these would include ES related to carbon (forestry, agriculture, energy), water, endangered species, grasslands, urban sprawl, conflicting land uses.
- *Opportunistic ES*: those ES opportunities driven by private interest. In Alberta these would include ES related to value added forestry and agricultural products (both green products and those that drive benefit back to the resource base).

It was suggested that Alberta develop a set of targeted ES as soon as possible in order to enable early movement on MBI initiatives. Alberta needs to take an integrated perspective of environmental issues and longer-term ES outcomes. In order to do this, an ES assessment of key ecological services should be underway – but action on MBIs should not wait.

### **From Pilots to Policy**

Alberta should take a pilot to policy approach, recognizing that viable markets will inevitably need certainty in order to develop and mature. Accept that this will be a "learn as you go" experience. Start with do-able issues where MBI's can generate a win, for example:

On a newly regulated issues, rather than having to “undo” existing regulations.

- A change that is going to have to be made anyway.
- Look where there is experience elsewhere and good existing information bases linking markets to outcomes, and for measuring success.
- Look to compelling issues or problems for the government or the public at large.

In taking a pilot to policy approach, participants advised:

- Be prepared with policy design research.
- Identify the “easy, early” wins. There is good information accessible on Alberta’s pilot ready initiatives and on other pilots in Canada from which there may be learnings. Those mentioned for Alberta included: water quality; carbon; grasslands; endangered species; urban sprawl; value-added products in both forestry and agriculture.
- Consider a pilot on forestry carbon that could include tradable disturbances and endangered species offsets. Forestry carbon would be suitable for an early pilot because:
  - GHG is a policy priority in Alberta.
  - There are existing protocols for establishing carbon credits.
  - A carbon offset market already exists.
  - There is the potential to bundle with biodiversity ES.
  - Such an initiative would enable Alberta to take leadership.
- When establishing pilots, acknowledge the differences between southern and northern Alberta, for example wetlands mitigation may be a higher priority in northern Alberta, while water quality trading is a higher priority in the south.
- There are also a number of agriculture sector pilots that could be early candidates, including:
  - Extending water trading pilots.
  - Water quality issues and the use of best management practices such as soil erosion, soil quality, organic matter management etc.

Alberta should ensure its ES/MBI initiatives are of a sufficient scope to be successful. Alberta-only markets, and regional and local markets, may be “too thin” for certain ES (for example, carbon) and market tools.

### **Institutional Structure**

Another of the consistently supported pieces of advice from participants was that Alberta should consider the establishment of an independent, arms length agency to develop pilots, and apply adaptive management when implementing its policy framework. *“Don’t reinvent the wheel – look to the USDA model recently established by the U.S. Secretary of Agriculture.”* This model is a U.S. government-wide Environmental Services Board mandated to:

- Identify priority ecosystem services for research, analysis and guideline development.
- Adopt measuring services methods guide data quality, verification and reporting.
- Incorporate guidelines in agency programs and operations.
- Ensure the use of the latest science and technical information.
- Enable a broad array of stakeholder input (through a Federal Advisory Committee).
- Consider the appropriate institutional structure for credit registration and trading (may be part of the independent, single purpose agency above).

*“What makes this work is people. The reason that Australia is so far ahead is because of champions that have made it happen”.*  
Think Tank Attendee

## **Knowledge, Skills and Education**

Participants also said a critical element in implementation will be the need for enhanced knowledge and skills in the areas of designing and implementing MBI's:

- Make the best use those who have ES/MBI experience now.
- Actively develop and reinforce levels of knowledge and experience of the public sector with respect to this emerging policy area (and change culture to be responsive and adaptive to it).
- Look to next generation of graduates and develop their knowledge and skills.
- The IAFE can develop guiding materials about MBIs (such as, what they are, how they are selected, how to design them and how to evaluate them).

Participants also advised Alberta to engage stakeholders early and often. Stakeholders should be involved in policy design and pilot identification, as well as delivery and evaluation. A shift to market-based instruments in Alberta may be lead by the GoA, but success will require the ideas, perspective, experience and buy in of a broad range of stakeholders.

## **Conclusion**

Participants in the session lauded the IAFE for its foresight in holding an open discussion on this timely policy topic. The discussion reinforced the opportunity for Alberta to set new policy directions to enable MBIs to generate ecosystem services. In fact, participants expressed that Alberta can become a leader in this field.

Advice was clear and consistent throughout discussions in a number of areas:

- Start with an understanding of the ES problem before devising the solution. Alberta should develop a set of targeted ES as soon as possible.
- Know how markets work, and what the best mix of options might be to develop and sustain a specific ES market.
- Don't underestimate the need for public support for this shift in policy direction.
- Acknowledge right from program design that setting targets and meeting them is key to credibility (also that you need baselines to set targets).
- Verification and certification are essential ingredients to developing and sustaining marketable ecosystem services.
- Resolve private property issues as part of Alberta's MBI policy framework. It will be a significant barrier to any success if not addressed up front.
- Don't wait for perfection before getting started. Move early and learn as you go. There is good information and growing experience to build on globally.
- Develop the capacity and knowledge about MBIs and ES in the public and private sectors. Policy makers and program people need to understand the options, experiences and realities of this new policy direction.
- Create Alberta cultures of innovation and ingenuity – adapting and responding as experience and markets provide learning.

The IAFE committed that the advice and input from the International Think Tank would be presented to the Institute's Board of Directors by April, 2009. This report will be used to inform the Board's recommendations to the Government of Alberta, through the Minister of Agriculture and Rural Development, on policies that would enable Alberta to use market-based instruments, where they prove to be an effective tool to generate ecosystem services.

*"How do you link practice to objectives and then validate these practices for specific products?"  
Think Tank Attendee*

## Appendices

### **Appendix 1 - The Institute for Agriculture, Forestry and the Environment (IAFE)**

In December 2006, Premier Stelmach gave the Minister of Agriculture and Rural Development the responsibility to lead in the establishment of the Institute for Agriculture, Forestry and the Environment. Established in 2008, the IAFE is a key part of the Government of Alberta's commitment to managing the environmental pressures resulting from Alberta's economic growth. Its role is to recommend to the government a framework within which it can develop and implement market-based policies and processes that will encourage environmentally sound practices in Alberta's agriculture and forestry sectors.

The IAFE is governed by a Board of Directors. Its structure has been designed to ensure integration between the Government of Alberta, the forestry and agriculture industries, the environment and other stakeholders. The Board is responsible for directing and coordinating work programs, setting reporting standards, and recommending policy frameworks to the government. The government will make policy decisions based on these recommendations, enabling the forestry and agriculture industries to be partners in improving their environmental performance.

The IAFE's mandate includes of four key areas:

#### **1. Conservation and Stewardship Strategy**

The IAFE will lead in the development of a province-wide strategy for conservation and stewardship on private and public lands in Alberta. The strategy will provide a consistent, long-term approach to landscape management in the province.

#### **2. Market-Based Instruments**

The IAFE will develop a recommended policy framework for the Government of Alberta for the evaluation, selection and implementation of market-based instruments that will maintain and enhance the provision of Ecosystem Services (ES).

#### **3. Documenting Environmental Integrity**

The IAFE will develop a recommended approach to documenting the environmental integrity, content and management of renewable resource products produced in Alberta including certification and branding.

#### **4. Innovation**

The IAFE will recommend a strategy to the Government of Alberta that will help to brand Alberta as a leader in environmental innovation. This strategy will be based on the identification of worldwide best practices that will make Alberta a leading developer and first adopter of technologies that support increased environmental stewardship.

## Appendix 2 - Think Tank Agenda

<b>Thursday February 5, 2009</b>		
6:30 – 10:30 pm	Welcome Reception	
7:30 – 8:15 pm	Welcome Speakers, Discussants, Participants	Chair, Vic Adamowicz
7:30 pm	Introduction of IAFE Opening Presentation Guest Speaker	Ken Nicol Brad Stelfox
<b>Friday February 6, 2009</b>		
7:00 – 8:00 am	Breakfast	
8:00 – 8:45 am	Opening Session Welcome and Introductions Setting the Stage for the Future Overview of the Think Tank, Objectives and Expectations. Process for Policy Framework Development	Chair, Vic Adamowicz Moderator Margaret Bateman
8:45 – 10:30 am	Theme 1 – Ecosystem Services (ES) Key Note Speaker – David Zilberman Discussants – Nancy Olewiller, David Promozich	
12:00 – 1:00 pm	Lunch	
1:00 – 2:00 pm	Theme 2 (continued) Questions and discussions	
2:00 – 3:00 pm	Theme 3 – Institutional Innovation Key Note Speaker – Jim Salzman Discussants – Stewart Elgie, Gary Stoneham	
3:00 – 3:30 pm	Coffee break	
3:30 – 4:30 pm	Theme 3 (continued) Questions and discussions	
4:30 – 5:00 pm	Synthesis of the Day	
5:00 pm	Adjourn	
5:00 – 6:30 pm	Reception	
6:30 – 10:00 pm	Dinner	
8:00 pm	Guest Speaker	Honourable George Groeneveld

<b>Saturday February 7, 2009</b>		
7:00 – 8:00 am	Breakfast	
8:00 – 8:15 pm	Summarizing the Proceedings To date	Moderator
8:15 – 8:45 am	Key Observations and Discussions	Moderator/Group
8:45 – 10:00 am	Theme 4 – Developing Directions – Policy Setting Translate key findings and priorities discussion on best ways to develop policies and policy environment	Moderator/Group
10:00 – 10:15 am	Coffee Break	
10:15 – 11:30 am	Theme 4 (continued) Identifying Gaps/Finding Wisdom	Moderator/Group
11:30 – 12:00 pm	Closing Comments	Moderator/Chair, Vic Adamowicz
12:00 – 1:30 pm	Lunch Further Discussions Adjournment	

### **Appendix 3 - Think Tank Attendees**

Vic Adamowicz, Think Tank Chair, Associate Dean(Research), Faculty of Agriculture, Life and Environmental Sciences, University of Alberta

#### ***Keynote Speakers:***

David Brand, Chairman and Managing Director, New Forests Pty Ltd.

Jim Salzman, Samuel Fox Mordecai Professor of Law, Duke Law School, Nicholas Institute Professor of Environmental Policy, Nicholas School of the Environment and Earth Sciences, Duke University

David Zilberman, Agricultural and Resource Economics Professor, University of California, Berkeley

#### ***Discussants:***

Earl Dotson, President/CEO, Validus Services

Shane Gabor, Research Biologist, Ducks Unlimited Canada

Stewart Elgie, Professor of Law, University of Ottawa

Nancy Olewiler, Professor of Economics, Simon Fraser University, Director of the Public Policy Program, Simon Fraser University

David Primozich, Executive Director, Willamette Partnership

Gary Stoneham, Chief Economist, Department of Sustainability and Environment, Victoria, Australia

***Participants:***

Carol Bettac, COO, Institute for Agriculture, Forestry and the Environment

Ted Bilyea, Agri-food Consultant

Clark Binkley, Managing Director, International Forestry Investment Advisors

Peter Boxall, Professor and Acting Chair, Rural Economy, University of Alberta

Richard Boyd, Senior Policy Analyst, Climate Change Central

Fiona Briody, Manager, Institute for Agriculture, Forestry and the Environment

Daphne Cheel, Executive Director, Life Sciences Branch, Research Division, Alberta Advanced Education and Technology

Con Dermott, Industry Co-Chair, Alberta Forestry Research Institute

Alan Gardner, Executive Director, Southern Alberta Land Trust

Kimberly Good, Project Manager, Miistakis Institute

Honourable George Groeneveld, Minister of Agriculture and Rural Development, Government of Alberta

Frank Kennedy, ADM, Science and Information Resources Division, Ontario Department of Natural Resources

Mike Kennedy, Senior Resource Economist, Pembina Institute

Gillian Kerr, Manager, Environmental Tool and Economics Team, Alberta Environment

Keith Leggat, Director, Climate Change, Air and Land Policy Branch, Alberta Environment

Honourable Ted Morton, Minister of Sustainable Resource Development, Government of Alberta

Keith Murray, Director of Policy and Regulation, Alberta Forest Products Association

Robert Nichol, Board Member, Institute for Agriculture, Forestry and the Environment

Avelyn Nicol, Senior Policy Manager, Land-Use Secretariat, Alberta Sustainable Resource Development

Ken Nicol, Chair, Institute for Agriculture, Forestry and the Environment

Connie Phillips, Director, Bio-Industrial Technologies Division, Alberta Agriculture and Rural Development

Jurgen Preugschas, Board Member, Institute for Agriculture, Forestry and the Environment

Ian de la Roche, CEO, FP Innovations

Doug Sklar, Acting ADM, Forestry Division, Alberta Sustainable Resource Development

Peggy Smith, Assistant Professor, Forestry and the Forest Environment, Lakehead University

Brad Stelfox, Adjunct Professor, Department of Biological Sciences, University of Alberta, and Department of Environmental Design, University of Calgary

Matthew Straub, Environmental Policy Analyst, Agri-Environmental Policy Bureau, Agriculture and Agri-food Canada

Marian Weber, Environmental Policy Program, Alberta Research Council

Dan Wilkinson, Executive Director, Forest Economics, Alberta Sustainable Resource Development

Elizabeth Wilman, Professor of Economics, University of Calgary

Terry Young, Board Member, Institute for Agriculture, Forestry and the Environment

### ***Planning Team:***

Vic Adamowicz, Think Tank Chair, Associate Dean(Research), Faculty of Agriculture, Life and Environmental Sciences, University of Alberta

Andrew Anderson, Research Officer, Alberta Advanced Education and Technology

Margaret Bateman, CEO, Calder Bateman Communications

Carol Bettac, COO, Institute for Agriculture, Forestry and the Environment

Roger Bryan, Institute for Agriculture, Forestry and the Environment

Daphne Cheel, Executive Director, Life Sciences Branch, Research Division, Alberta Advanced Education and Technology

Meghan Ellis, Alberta Environment

Gillian Kerr, Manager, Environmental Tool and Economics Team, Alberta Environment

Keith McClain, Director, Science Policy and Strategy, Alberta Sustainable Resource Development

Iris Meck, Iris Meck Communications Inc.

Ken Nicol, Chair, Institute for Agriculture, Forestry and the Environment

### **Appendix 4 - Think Tank Presentations**

#### *Theme 1 Ecological Services*

- Speaker David Brand – Payments for Ecosystem Services and the Future of Land Management
- Discussant Earl Dotson – Ecosystems Goods and Services
- Discussant Shane Gabor – Market-Based Instruments to Preserve, Support and Enhance Ecosystem Goods and Services

#### *Theme 2 Market-based Instruments*

- Speaker David Zilberman – Market-Based Instruments to Preserve, Support and Enhance Ecosystem Goods and Services
- Discussant David Primozich – Beyond Compliance: Using Ecosystem Service Markets to Address Environmental Challenges
- Discussant Nancy Olewiler – Market-Based Instruments in Canada

#### *Theme 3 Institutional Innovation*

- Speaker Jim Salzman – Institutions and Ecosystem Services
- Discussant Gary Stoneham – Market-Based Instruments to Support and Enhance EGS
- Discussant Stuart Elgie – Markets for Forest EGSs: Institutional Ideas and Lessons

All presentations are available in PowerPoint format. To obtain a copy, contact the Institute for Agriculture, Forestry and the Environment:

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