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# Alternative Land Use Services (ALUS): Broadening the Base of Agricultural Income

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## I. Background

Canada is at a crossroads in the evolution of its agricultural policy. Income and transportation subsidy programs have been largely eliminated in the wake of the development of current World Trade Organization (WTO) rules, leaving Crop Insurance, the Net Income Stabilization Account (NISA), provincial companion programs (e.g. wildlife damage compensation in Manitoba and the new Canadian Farm Income Program (CFIP) as the baseline agricultural safety net programs. In addition to these safety net and income disaster programs, other ad-hoc programs have been developed in the past to address specific financial issues<sup>1</sup>. The common characteristic of past and current agricultural support programs has been to base benefits on traditional agricultural commodities, especially grains and oilseeds, or to respond to area-specific natural disasters such as flood or drought.

The dream of the current trade rules – global trade in agricultural commodities free of subsidy – has not materialized, as Europe and the United States have found other means, permitted by the WTO, to support their rural communities. Much of this support has been based on the policy rationale of paying farmers for their provision of public benefits in the form of ecological services. This reflects the recognition of the nature of agriculture whereby farmers produce products for the marketplace (food and fibre) and affect public resources such as soil, air, water and wildlife. In the absence of this policy approach in Canada, farmers have again been left attempting to compete with other nations that provide substantial support to their agricultural producers and rural economies.

Farmers continue to face low commodity prices, high inputs and transportation costs, and concomitant rising levels of personal debt. The strategy of reacting to decreasing profit margins by increasing production is being called into question, and the approach of restricting commodity supply to boost prices is being seriously debated within the farm community.

In the domestic policy arena, agricultural issues are becoming dominated by the environmental agenda, as the urban electorate increasingly demands new products – cleaner water and pastoral landscapes – from rural producers. For example, current discussions on future development of the livestock industry in Manitoba are dominated by environmental concerns. Expanding the regulatory and planning process is proposed by many as a preferred policy approach to achieving these public goals in the face of further intensification and diversification of the agricultural economy<sup>2</sup>.

Government supported resource adjustment and related rural income enhancement programming is not a new concept on the Canadian prairies. Under the 1966 federal Agricultural and Rural Development Act (ARDA), a number of federal-provincial programs provided for land inventories and subsequent resource adjustment programs (e.g. Canada Land Inventory, Alternate Land Use Program). ARDA was complemented by the Fund for Rural Economic Development (FRED) to deal with severe regional situations of low incomes and problems of economic adjustment. The Interlake area of Manitoba was one of the five regions in Canada specially designated for aid under FRED. Much funding for land use adjustment was provided, with many projects further supported by non-government stakeholders such as Ducks Unlimited (ie: Oak Hammock Marsh).

More recently, programs have been targeted to address land and water management challenges on the landscape, and to support more sustainable land use. The Permanent Cover Program (PCP), for example, was delivered by the Prairie Farm Rehabilitation Administration (PFRA) from 1989 to 1993, and spent a total of \$50 million in incentives for the conversion of 1.1 million acres of Prairie land to permanent cover<sup>3</sup>. Contracts committing land to permanent cover are beginning to expire. PFRA's original mandate in 1935, in the midst of the Dirty Thirties, was to aid in the adoption of farm practices and land utilization to provide for greater economic security of prairie people. The overall goal of this paper is to describe an alternate land use services concept that delivers environmental benefits, is non-trade distorting, and that is capable of attracting grassroots and political support, in both urban and rural constituencies across Canada. It is intended to provide a basis for dialogue among a broad range of sectors on the concept of alternate land use services and how it can be incorporated into Canadian public policy.

## II. Objectives

Canada needs a new approach to agricultural and resource policy that achieves national objectives of economically, socially and environmentally sustainable communities. Implementing alternate land use services would recognize the societal benefits from agriculture beyond the traditional commodities of food and fiber. The specific objectives of alternate land use services are:

### 1) Conservation and environmental enhancement:

Canada's vast agricultural landscape is home to a number of ecological processes and products that benefit our quality of life – clean air and water, carbon sequestration, and wildlife – to name but a few. These are among the most altered landscapes in the world, and many are under significant stress. Policy responses to date have failed to deal with fundamental causes of the degradation.

#### a) Soil quality

The agricultural land base of the Prairies consists of 52 million hectares, which represents approximately 80% of the total land available for farming in Canada. The prairie agricultural land base is effectively developed. Land and water management on the prairies is paramount to the long term sustainability of the agricultural industry and to rural areas in Western Canada. In addition, the continued health of the prairie landscape is important to all Canadians with interests in clean air, water and natural habitat.

In 1983, PFRA published *Land Degradation and Soil Conservation*<sup>4</sup>, an assessment of the state of the prairie soil resource. It concluded that the prairie soil resource was at risk from erosion and other forms of degradation. It also estimated the annual cost of soil degradation to prairie farmers was in excess of \$100 million dollars.

Since the 1983 report the combined efforts of governments, private agencies and farmers have established the understanding that agriculture operates as one component within various ecosystems. The concept and acceptance of sustainability has emerged into the mainstream of the agriculture industry.

Many factors influence the ongoing health of the soil resource. Key indicators of soil health include salinity, organic matter, water quality and the status of riparian areas. These factors reflect among other things, the way in which soil is managed. In 1995, Agriculture and Agri-Food Canada released *The Health of Our Soils*<sup>5</sup> which concluded that in some cases soil quality had improved, but that the trend was small and not general to all soil in Canada. The report also noted that while improved farm practices such as conservation tillage have made some soils less susceptible to degradation, further policy and programs need to recognize soil as part of a broader ecosystem.

Using soil for agricultural production is inherently risky. Many factors will continue to pose a threat to soil health that must be addressed on an ongoing basis; for example, soil salinity remains an issue on approximately 1.4 million hectares across the prairies; and organic matter has declined in prairie soils as a result of cultivation. Recent estimates are that 14-40% of the soil carbon originally in prairie soils has been lost.

## **b) Water quality**

Water quality in rural areas continues to be influenced by agricultural developments. In May 2000, Agriculture and Agri-Food Canada released *The Health of Our Water*<sup>6</sup>, to complete a series of publications showing how agriculture interacts with natural resources. As stated in the report preface, the assurance of an adequate supply of clean water is essential not only for agriculture, but also for human health, ecosystem integrity and the viability of many economic activities.

The main water pollutants of water coming from farmlands are sediment, nutrients (especially nitrogen and phosphorus), pesticides, bacteria and salts. Both surface and groundwater can be affected. These substances can make water unfit for humans, crops, livestock and wildlife. Agriculture can also change the physical presence of water on the landscape through impoundments, water distribution systems, drainage and leveling, and sedimentation. Notable examples include: sediment loads averaging 435 kilograms per hectare per year have been measured in the South Tobacco Creek watershed of southern Manitoba; excess nitrogen and phosphorus in the Boyer River, Quebec, reached levels of 317 tonnes of P and 630 tonnes of N annually, well above provincial guidelines for protecting aquatic life in surface waters; pesticides are often detected in water courses, lakes and wetlands; pathogens in drinking water exceeding provincial guidelines have been frequently noted, and the recent Ontario situation has focused public concern on this issue.

## **c) Greenhouse Gas (GHG)/Carbon sequestration**

In 1992 in Rio de Janeiro and again in 1997 in Kyoto, the Canadian federal government has committed to limit and reduce GHG emissions. Through the Kyoto Protocol, Canada committed to a target reduction in GHG emissions to a level of 6% less than 1990 emissions, to be achieved during the 2008-2012 period.

Approximately 9.5% of Canada's GHG emissions are attributed to agricultural production activities, primarily nitrous oxide from soils and methane attributable to livestock; at the same

time, agriculture has a large physical potential to provide carbon sinks for the reduction in net emissions<sup>7</sup>.

In order to develop its action plan to fulfill its Kyoto commitments, the government of Canada set in motion 16 Issue Tables to examine options for reducing GHG emissions. One of these, the Agriculture and Agri-Food Table, tabled eleven recommendations for government action on this issue. Particularly relevant to alternate land use services is Recommendation 2:

*In recognition of the public benefits where cost-effective technologies are well known and an economic incentive is required for their adoption, governments should provide public incentives for the adoption of GHG-reducing technologies. These incentives should stay in place until markets for emission reductions in agriculture are established. For example, governments should work with industry to develop financial incentives for the planting of shelterbelts<sup>8</sup>.*

Clearly, public incentives for agricultural carbon sinks stand to play a significant role in Canada's strategy for reducing GHG emissions.

#### **d) Fish and Wildlife**

A tremendous diversity of wildlife species depends on habitat areas provided by private landowners in agricultural Canada<sup>9</sup>. Signaling the changes taking place within the agricultural landscape, several wildlife species dependent on agricultural lands for all or part of their life cycle are either in decline or have been classified as species at risk as a result of habitat loss and the change in predator communities.

In response to these population trends, a variety of policy approaches have been delivered by wildlife and conservation agencies to maintain and develop permanent cover and habitat on private land. The North American Waterfowl Management Plan (NAWMP) uses an incentive-based approach, spending \$25 million per year in the Prairie region to establish and develop nesting cover for waterfowl and other wetland-dependent wildlife. On the other end of the spectrum, the federal Fisheries Act and proposed Species at Risk Act<sup>10</sup> have taken a regulatory approach, creating offences and associated penalties for disturbing or destroying fish and wildlife habitat.

All of these programs have failed to level the playing field for landowners producing public benefits at their own cost. For example, while significant when measured against the standards of previous wildlife programs, the NAWMP acknowledges the need to effect change in agricultural and other policies in order to truly effect change on the landscape<sup>11</sup>. Even regulatory approaches, despite their current popularity at the federal and provincial levels, have acknowledged the need for complementary incentives for stewardship if they are to be successful<sup>12</sup>.

The lesson from these programs is that significant positive changes to the landscape are unlikely to occur until fish and wildlife goals are incorporated into mainstream agricultural policy and programs<sup>13</sup>. The rationale is clear – public benefits from fish and wildlife production are only rarely captured by the landowner responsible for the costs of production, and this market failure is an appropriate basis for government intervention.

## **2) Sustainable Rural Communities**

The key to ensuring and sustaining the prairie rural economy lies in broadening the base from which farmers can generate income. Work needs to continue to identify and develop non-traditional commodities that can be produced and add value to on the prairies. Ecological goods and services produced on Canadian farms and ranches are an emerging example of how the economic base of rural Canada can be broadened.

A successful rural community has a thriving economy, well-managed soil and water resources, and a vibrant social fabric. All three must be present for success and all are interrelated. A diversified and growing economy creates the "critical mass" necessary to support a vibrant social life. Similarly, clean air and water are cherished by all Canadians for both economic and "quality of life" reasons. The recent events in Walkerton, Ontario forcefully remind us that clean water can literally be a "life and death" issue.

Rural economies dependent upon grain and oilseed commodities are threatened by declining world prices. This sets a chain of events in motion which sees a decline in the social fabric and, possibly, overuse and misuse of soil and water resources as farmers and their supporting communities try to survive. A major goal of an environmental services approach to farming is to provide for a broader source of income for rural communities. Income would be provided to rural landowners for the delivery of ecological services to the rest of society. This income would be in addition to the existing farm safety net and would contribute to economic and environmental stability in rural regions.

### **3) Agricultural income enhancement and adaptation**

Canadians need to reevaluate how landowners are compensated for the production of agriculture commodities and for the other services to society that their lands provide. Prairie farmers are expected to meet the challenge of competitive international markets, supplying safe, nutritious, and affordable food domestically, while at the same time ensuring land and water resources can provide additional public benefits through clean air and water, abundant wildlife habitat and protection of native species.

In general, the cost of maintaining land in condition to meet all these objectives is not considered by society, and by default, becomes the responsibility of the landowner. Falling commodity prices, increasing costs and other constraints are driving changes in the agricultural industry, and in the way landowners manage land. Much has been done within the industry to adapt to new market realities, and to alter the range of crops and livestock produced. However, the fact remains that farmers are not making sufficient returns, even with significant adaptation, to afford the cost of ensuring the continuation of public benefits from their land and water.

Growth in the agriculture and agri-food industry is an objective shared by producers, industry, and governments and by all Canadians, and several analytical works and reports predict the production of traditional agricultural commodities will increase. For example, hog production on the prairies is on pace to double within the next five years, and beef production continues to grow steadily. Other sectors such as potatoes, forage seeds and other special crops are providing a solid economic base for many producers who are able to adapt in those directions. Value-added opportunities for agricultural commodities add to the growth and stability of the rural economy, however, these are not universally available because of a host of social, economic and resource factors.

In order to survive, producers will be forced to extract maximum economic benefits from their land base in the short run. Without additional options and sources of revenue, the result will be additional risk to the sustainability of land and water resources. The ability of land and water resources to generate benefits for the general population of Canada will be compromised.

### III. Program Concept

#### 1) Operating Principles

The following fundamental principles guide the development of the program:

- **Voluntary:** Based on incentives to achieve its goals that will be accepted by the landowner. Much more likely to succeed given the independent nature of farmers.
- **Capping:** A 20% participation limit is placed on participation.
- **Integrated** to existing delivery systems: Could be piggy backed on existing crop insurance programs. It would of course have to use expertise from existing conservation agencies for on-farm consultations.
- **Targeted:** It will encourage stewardship of environmentally sensitive sites and remove marginal farming areas from production.
- **Flexibility:** The 9 year term in 3 year blocks allows for a level of flexibility and response to changing needs.
- **Trade:** Such a program is production neutral as it favors no particular commodity. It also reduces overall production to some degree, and as such should be viewed positively by our trading partners.

#### 2) Qualifying Practices

National objectives of economic, environmental and social sustainability can be achieved by implementing a range of practices on the landscape, ranging from permanent changes to annual management:

##### a) Annual

i) **Grazing Management:** Use of rotational practices reduces stocking pressure on tame and native pastures resulting in better waterfowl and wildlife cover.

ii) **Green Manure Crops:** The use of biennial or short term perennial legume crops has good soil improvement and also has positive wildlife benefits. Even annual crops can be used as green manure crops.

iii) **Residue Management:** Management of land to enhance crop residue and use of winter annuals have many positive benefits for soil and water conservation.

##### b) Multi-year

i) **Conservation Cover:** Land converted to forage pasture or wooded cover for longer than one (1) year.

ii) **Forage Reserve:** Creation of areas of forage that are not a necessary part of a producers annual harvested area. Allows for a surge capacity in an area when weather conditions warrant harvest.

iii) **Deferred Harvesting** of forage areas to accommodate waterfowl hatching.

### c) Permanent

i) **Riparian Areas:** Changes to management of land adjacent to an intermittent or permanent water way to protect and enhance water quality or aquatic and terrestrial habitats. This can be several things including off stream watering and fencing of riparian areas.

ii) **Wildlife Management and Endangered Species Zones:** Introduction of management practises that improve habitat for wildlife in general or an endangered species in particular.

iii) **Carbon Sinks:** Establishment of area for carbon sequestration. This could include woodlot management areas.

iv) **Water Storage Areas:** Creation and protection of seasonal or permanent water storage or wetlands.

### 3) Program Design & Administration

A range of tools could be used to encourage the adoption and retention of the qualifying practices, including easements, contracts, and property tax incentives. Different tools could be applied, depending on the particular qualifying practice and whether existing or new land use is being supported.

The program design envisioned in this paper would encompass the following:

a) **Eligibility/participation:** either the landowner or operator could make the decision to participate, depending on the qualifying practice.

b) **Enrollment:** producers would be eligible to enroll up to 20% of their land (resource base) in the program. Enrollment would be for up to nine (9) years in three (3) year blocks. Percentage enrollment in a given area would be affected by:

i) areas could be targeted for higher or lower participation based on special environmental or wildlife factors;

ii) Availability of funding: overall area of participation in each region could be limited by funding available.

c) **Price/payment:** Originally the price/payment for permanent practices could be set using several factors:

i) Productivity ratings (Crop Insurance soil ratings, Canada Land Inventory classifications);

ii) Competitive land rental rates in an area. Final establishment of a price per acre could be done by an offer and acceptance system (e.g. producer would be offered \$35/acre for land of a specific class and either accepts or rejects). If not enough offers are accepted across an area, either more land (more than 20%) could be accepted from other producers or a higher offer could be made (e.g. \$40/acre) until sufficient enrollment is achieved.

For multi-year and annual practices, or optional use, payments could be based on a proportion of payment for permanent practices on similar quality lands.

**d) Duration of contract:** Length of the program would be nine (9) years broken down into three (3) year blocks that producers could use to opt in or out based on perceived market returns. This would allow a flexible response to market conditions.

**e) Administration:** Fulfilling the fundamental principle of integrating administration with existing delivery mechanisms would require processes that may vary from province to province. In Manitoba, for example, each producers' annual commitment to the program could be reported through the use of the Manitoba Crop Insurance Corporation data base at the time that Seeded Acreage Reports are completed (June 30th), and a percentage of payment could be paid to participants at that time. In the case of optional use (e.g. cutting hay or grazing pastures), 50% of the payment could be paid, with the remainder (depending on actual use) paid after the Harvest Production Reports are completed (November 30th).

#### **IV. Implications**

##### **1) Trade Neutral:**

As a non-production related program, it is currently in the "green box" area. Both the U.S. and Europe have somewhat similar programs and as such they are unlikely to target one.

##### **2) Market:**

The reduction in acreage (up to 20%) will have some effect on reduction of potential production. This will send somewhat of a message to the market, although it is obvious that this alone will not have much effect on prices of most commodities.

##### **3) Production:**

Experience in the U.S. with the Conservation Reserve Program (CRP) shows that most producers enroll their least productive land in this type of program. Thus, in fact, production only drops 5 to 8% despite a 20% enrolment. This ensures that businesses beyond the farm gate are not dramatically impacted by sudden shifts in demand and supply.

##### **4) Inputs:**

A reduction of acreage devoted to annual crops does, of course, reduce the demand for inputs and will reduce costs. In addition, payments could be made early in the season to provide cash flow for other operating costs on the farm.

## 5) Transition:

Farm demographics are such that a significant number of farmers will be retiring in the next ten years. The U.S. CRP encouraged a phased retirement by allowing farmers to enroll their lower quality land, and, further, to rent the remainder of their land to neighbours who wish to increase farm size. These neighbouring operations will have surplus capacity as they too may have chosen to idle their poor quality acreage.

## 6) Financing:

This program should reduce demand by farmers on financial institutions and as payments are predictable in nature, it should be well received by bankers.

## 7) Environment:

Positive environmental aspects are many, and include more wildlife habitat, decreased soil degradation, improved water quality and enhanced ecosystem function. The whole aspect of carbon credits as they relate to agriculture could be incorporated into this type of program.

**8) Other Impacts:** A number of effects will be generated by the new program, including:

- a) **Value-added processing:** Livestock products, including non-traditional livestock;
- b) **Water quantity and quality:** Waste management infrastructure, flood damage reduction
- c) **Recreation and tourism:** Enjoyable landscape.

**9) Existing Practices:** In recognition to those producers who have already committed all or portions of their farm to program and stewardship objectives, various options exist. For example, conservation easement legislation could be used to permanently set aside existing woodlands or riparian areas on private lands; property tax reductions could be granted to those producers with forage acres in recognition of enhanced water retention and reduced sediment yield.

## V. Next Steps

Pending acceptance in principle of this conceptual approach, the following steps would need to be conducted:

- 1) **Budget Development:** Cost estimates and program scale by province need to be generated.
  - 2) **Benefits:** Monetary and non-monetary benefits need to be identified and quantified.
  - 3) **Consultations:** Public discussion is required to test acceptability of concept, develop administrative options and refine program design, identify stakeholders, review implications and generate support for the final program.
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## Notes

<sup>1</sup> In Manitoba, for example: 1999 Manitoba Farm Disaster Assistance Program (MFDAP), 1997 Canada/Manitoba Jobs and Economic Recovery Initiative (JERI), 1992 Farm Support and Adjustment Measures (FSAM), 1998 Canada-Manitoba Greenfeed Program and Canada-Manitoba Livestock Drought Assistance Program.

<sup>2</sup> For example, the proposed Species At Risk Act tabled before the current Parliament.

<sup>3</sup> PCP Final Report, March 31, 1994.

<sup>4</sup> Land Degradation and Soil Conservation Issues on the Canadian Prairies. Soil and Water Conservation Branch, PFRA, 1983. Also see Soil at Risk: Canada's Eroding Future. Report on Soil Conservation by the Senate Committee on Agriculture, Fisheries, and Forestry, Ottawa. Sparrow, H.O., 1984.

<sup>5</sup> The Health of Our Soil: Toward Sustainable Agriculture in Canada, 1995. D.F. Acton and L.J. Gregorich (ed.), Research Branch, AAFC.

<sup>6</sup> The Health of Our Water: Toward Sustainable Agriculture in Canada, 2000. D.R. Coote and L.J. Gregorich (ed.), Research Branch, AAFC.

<sup>7</sup> Options Report: Reducing Greenhouse Gas Emissions from Canadian Agriculture, January, 2000. Agriculture and Agri-Food Climate Change Table, AAFC.

<sup>8</sup> Ibid, page 30.

<sup>9</sup> See discussion in Chapter 3, Current State of Land & Water Resources, Riparian Areas. Agricultural Landscapes: A Land Resource Review. PFRA, AAFC, 2000, pages 61-69.

<sup>10</sup> Bill C-32: Proposed Species at Risk Act: as presented to the House of Commons Standing Committee on The Environment and Sustainable Development, by the Hon. David Anderson, P.C., M.P., Minister of the Environment, September 19, 2000.

<sup>11</sup> NAWMP Update.

<sup>12</sup> See SARA position paper re: stewardship.

<sup>13</sup> NAWMP Update, Brundtland Report.