



Department of Foreign Affairs
and International Trade

Ministère des Affaires étrangères
et du Commerce international

**Initial Environmental Assessment:
Trade Negotiations in the World Trade Organization**

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EXECUTIVE SUMMARY

The Government of Canada is committed to sustainable development. Mutually supportive trade and environmental policies can contribute to this goal. Environmental assessments of trade negotiations is one mechanism for doing so.

In keeping with a 1999 *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*, Canada is conducting an environmental assessment of the Doha Round of trade negotiations at the World Trade Organization (WTO). This work is being guided by the *Framework for Conducting Environmental Assessments of Trade Negotiations*, which provides an analytical process for identifying and addressing likely and significant environmental impacts. The environmental assessment (EA) is intended to help trade negotiators understand the environmental implications of trade policy and to assist them in integrating environmental considerations as trade negotiations progress.

Following the issuance of the Notice of Intent to conduct the environmental assessment, we have undertaken an Initial Environmental Assessment which identifies the potential sectors or activities that may be affected by new WTO negotiations. Its principal aim is to scope out the main environmental issues that might arise as a result, and which will be given more rigorous analysis in the third and final stages of the process (Draft and Final EAs).

Following the four-staged analytical methodology, the Initial EA examines the coverage of negotiations and their overall economic relevance in the Canadian context. It identifies the *likely* environmental impacts (positive and negative), if any, of trade-induced economic and regulatory changes, and assesses their *significance*. The Initial EA also briefly identifies mitigation and enhancement measures.

In undertaking the EA, we recognize that economic growth will continue to influence agricultural and industrial activity, irrespective of Canadian objectives to liberalize or take action in a certain area. We also recognize that trade liberalization outside the WTO context will continue through Canada's regional and bilateral free trade agreements and negotiations. While we realize the challenge in isolating the incremental economic effects attributable to trade liberalization per se, the EA will focus only on the economic activities and trade policy changes resulting from negotiations in the WTO.

The Initial EA takes into account the fact that Canada currently has in place a framework of policies and legislation for the protection of the environment. Canadian environmental policy and legislation will not be affected directly by the negotiations at the WTO, and the negotiations will not limit the ability of Canadian governments to regulate for environmental protection in the future.

The current analysis covers the seven areas of negotiation that were launched in Doha: agriculture, non-agricultural market access, services, rules, trade and environment, wines and

spirits registry, and dispute settlement. Only when an agreement to negotiate an issue is obtained will the issue be included in an environmental assessment. Therefore, other subjects often attached to trade and environment discussions in general, but not specifically mandated for negotiation in the context of the Doha Round (e.g., precautionary approach, regulation of genetically modified foods, labelling for non-product related process and production methods) are not covered by the EA as there is no agreement to negotiate on them. At the WTO's Fifth Ministerial Conference in Cancun in September 2003, WTO Members will make a decision on whether to expand the negotiation mandate to include *inter alia* any of the so-called Singapore issues of trade and investment, trade and competition policy, transparency in government procurement and trade facilitation. Until there is a negotiation mandate for them, they remain outside the scope of this EA.

Scenarios are used in several sections of the Initial EA as tools for analysis, and do not reflect expected outcomes of the negotiations or Canada's objectives in the negotiations.

Findings of the Initial Environmental Assessment

The analysis performed for this Initial EA suggests that in the aggregate, any effects the new WTO negotiations may have on the Canadian environment are likely to be minimal on account of one or a combination of three reasons: (1) further trade liberalization affects only a small proportion of Canada's trade (the bulk already being subject to NAFTA and other Free Trade Agreements); (2) federal and provincial environmental legislation that can mitigate negative effects is, or will soon be, in place; (3) some negotiations that seek clarification in procedures or establish a system of notification and registration will not directly translate into increased production or trade.

Agriculture

The Doha Declaration calls for negotiations aimed at: reduction, with a view to phasing out, of all forms of agricultural export subsidies; substantial reductions in trade-distorting domestic support; and substantial improvements in market access. As any final agreement will be the result of negotiations between parties with divergent interests, it is impossible to accurately ascertain the outcome of the negotiations.

For the Initial EA, an abstract scenario envisioning a 50 per cent reduction in the current levels of the three trade-distorting agricultural policies, and the continuation of Canada's supply management policies, has been used to evaluate the potential environmental impacts of the outcome of these trade negotiations. This scenario is used as an analytical tool and is not a statement of Canada's objectives, nor a speculation regarding the possible outcome of the negotiations.

Reductions in tariffs, trade-distorting domestic support and export subsidies will likely lead to an increase in trade and in world prices for cereals and red meat. It is expected that moderate

increases in world prices for cereals and other crops would slightly increase Canadian production levels. For livestock, reduced tariffs and expanded Tariff Rate Quotas (TRQs) would help raise prices, but given higher feed costs, would result in small increases in beef production and modest increases in pork production.

Overall, the initial findings suggest that further agricultural liberalization is not likely to cause significant environmental damage since Canada's agriculture is of relatively low intensity. World prices and production levels in the Canadian agri-food industry would likely experience modest increases, both in the aggregate and for most commodities. Trade liberalization is also expected to have secondary environmental effects on food processing and transportation. It should be noted that federal and provincial environmental legislation is currently in place, and new environmental policies and initiatives are planned for the near future. As well, under the current rules of the WTO Agreement on Agriculture, countries can institute and fund programs with environmental objectives without limitations as long as those programs are not trade-distorting.

Non-agricultural Products

For the Initial EA, an overall tariff reduction of 50 per cent is used as an abstract benchmark to illustrate the potential economic impact of the Doha Round. This scenario is intended to be neither a reflection of Canada's objectives nor a prediction of the possible outcome of the negotiations.

Current analysis focuses on those sectors where liberalization to date has not been as significant or as comprehensive as others and which, therefore, hold the most immediate potential to generate future incremental trade flows as a result of new substantial liberalization. These sectors are chemicals; fertilizers; environmental goods; fish and fish products; forest products (including both paper and wood); and nonferrous metals.

The environmental impacts of economic changes expected under the 50 per cent scenario are expected to be minimal in the aggregate. Furthermore, only a small portion of Canada's exports would be affected by liberalization in these negotiations (the preponderant share of trade being subject to NAFTA and other FTAs). More generalized environmental effects (e.g., related to the transportation industry) are also considered to be relatively minor. As is the case in agriculture, there are mitigating factors, including federal and provincial legislation, either in place or being planned to provide for environmentally responsible and sound harvesting or manufacturing, particularly in sectors where liberalization holds the most immediate potential to generate future incremental trade flows.

Services

Trade in services is not restricted by the use of tariffs and is not easily measured. Thus, it is particularly difficult to isolate the environmental impacts that liberalization might have in this area. Barriers to trade in services may include such things as: requirements for local partners,

foreign ownership restrictions, residency requirements, and opaque or non-transparent rules/regulations. The potential for the General Agreement on Trade in Services (GATS) to have positive or negative environmental effects will depend on the extent and magnitude of growth stimulated by further liberalization of GATS commitments. A clear picture will emerge once initial offers are finalized in March 2003. Therefore, a more detailed analysis may be needed with respect to some services as the GATS negotiations proceed.

Rules

Negotiations to clarify or improve existing rules may not translate directly into changes in the pattern or volume of trade, but clearer rules are expected to contribute to predictability and stability in the trading system. Generally, subsidy disciplines may be considered win-win but the extent of the beneficial impacts of subsidy reduction on the environment will depend on the existence of appropriate environmental policies and regulations. Clarifying anti-dumping disciplines could limit the inconsistent and uneven application of anti-dumping measures, while ensuring that such measures remain an effective response to the injurious effects of dumped imports. This will strike an appropriate balance with respect to their environmental impact.

Meanwhile, clarification and improvement of disciplines relating to regional trade agreements are not seen to result in any trade-induced economic changes; therefore, there will be no direct implications on the environment.

Trade and Environment

Taken together, the various elements on environment and sustainable development in the Doha Declaration represent a significant effort on the part of the WTO Members to take environmental aspects of the negotiations into consideration.

The mandate for negotiations on the WTO and Multilateral Environmental Agreements (MEA) relationship is limited, and the outcome will not affect the balance of rights and obligations of Members or affect market access. Results are not expected to generate new economic activity.

As to procedures for regular information exchanges between MEA Secretariats and the relevant WTO Committees, and the criteria for the granting of observer status, the outcome of negotiations in this area will be an administrative process. Results will not generate any new economic activity in Canada. These negotiations are expected to promote coherence between the multilateral trade system and international environmental governance.

Negotiations on environmental goods and services sector will be taken up respectively under non-agricultural market access and services negotiations. These two sectors are being factored into the environmental assessment of non-agricultural market access and services negotiations.

Wines and Spirits Registry

Negotiations to establish a multilateral system of notification and registration of geographical indications for wines and spirits will contain information on which geographical indications are protected in a given country. It is not intended to create new obligations, create administrative burdens, or affect the rights of Members. The registry is not expected to translate into increased production or trade.

Dispute Settlement

The Dispute Settlement Understanding (DSU) negotiations address the rules and procedures by which disputes are managed and are aimed at increasing the effectiveness of the dispute settlement mechanism. A more effective dispute settlement mechanism will contribute to the overall objectives of the WTO, including the objective of sustainable development, by better governing Members' relations in the field of trade and economics.

Next Steps

The next step of the EA process is the Draft EA, which will focus on the environmental issues raised in the Initial EA that require further analysis. The completion date of the Draft EA will depend on developments in the negotiations.

As Canada will be proactive in the negotiations and will be developing further proposals in these areas, further analysis will be required of negotiations in agriculture and industrial market access, services, and rules (as specific elements of the mandate are further clarified) and certain aspects of trade and the environment. More rigorous analysis will be undertaken, as appropriate, in the Draft and Final Environmental Assessments.

No further analysis will be required in the areas of the multilateral registry for wines and spirits and dispute settlement.

Positive or negative environmental effects that may result from further trade liberalization may either be enhanced or mitigated by current environmental legislation and measures already in place in Canada, which have promoted environmentally responsible and sustainable production or manufacturing. Canadian governments will maintain their ability to adopt environmental policies and legislation in order to either enhance positive or mitigate negative environmental effects that may result from trade liberalization.

The Government of Canada welcomes comments on this Initial EA. Public consultations are an integral part of the EA process and will be undertaken throughout the process. Comments can be sent to: consultations@dfait-maeci.gc.ca .

INTRODUCTION

Trade is vital to Canada's economy. In 2001, exports of goods and services represented 43 percent of Canada's gross domestic product (GDP) and trade supported one in four jobs. Our current and future growth and prosperity depend on open world markets, a stable and transparent trading system, and a means to settle trade disputes based on rules rather than political or economic might. Canada's membership in the World Trade Organization (WTO) helps us to achieve these objectives. The WTO system of agreements is the cornerstone of the multilateral trading system. It is the foundation of Canadian trade policy and trade relations with the European Union, Japan, and emerging markets worldwide. It also underpins much of our trade with the United States.

As an environmentally and socially conscious nation, our citizens demand that their government pursue sound environmental stewardship. Moreover, our long-term trade and economic performance is influenced by environmental factors. Canada's position is that trade policy must be supportive of sustainable development. The Canadian government is committed to integrating sustainable development into domestic and foreign policy, and the environmental assessment of trade negotiations is one mechanism for doing so.

At Doha, in November 2001, WTO Members launched a new round of multilateral trade negotiations to be concluded by January 1, 2005. These negotiations cover the following areas:

- ▶ substantial improvements in agricultural market access; the reduction, with a view to phasing out, of all forms of agricultural export subsidies; and substantial reductions in trade-distorting domestic support to agricultural production;
- ▶ reduction or elimination of non-agricultural tariffs and certain non-tariff measures;
- ▶ improvements in market access for services;
- ▶ clearer rules on anti-dumping, subsidies and countervailing duties;
- ▶ certain aspects of trade and environment, including the relationship between existing WTO rules and specific trade obligations in multilateral environmental agreements;
- ▶ a system of notification and registration of geographical indications for wines and spirits;
- ▶ improvements to the Dispute Settlement Understanding.

The new round is expected to contribute to poverty reduction, development, and long-term social and economic progress worldwide. Canada will gain better access to global markets for Canadian exporters of goods and services. New negotiations will also contribute to building a robust rules-based system by clarifying and improving multilateral trade rules. Furthermore,

trade liberalization resulting from negotiations will also help advance Canada's sustainable development objective.¹

In the Doha Ministerial Declaration, WTO Members noted efforts to conduct national environmental assessments of trade policies. In keeping with a 1999 *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*, the Government is conducting an environmental assessment of trade negotiations in the WTO, a process also being undertaken with respect to the Free-Trade Area of the Americas (FTAA) negotiations and Canada's other bilateral trade negotiations.

A. The Overall Environmental Assessment Process

In response to the 1999 *Cabinet Directive*, the Department of Foreign Affairs and International Trade (DFAIT), in conjunction with other government departments, led the development of the *Framework for Conducting Environmental Assessments of Trade Negotiations* (the framework). The framework, released in February 2001, provides an analytical process for identifying and addressing *likely* and *significant* environmental impacts of trade negotiations, thus helping to integrate environmental considerations in the course of trade negotiations.

The framework outlines the following four steps in conducting an EA:

- ▶ announcement of the intent to conduct an EA (which was published in the *Canada Gazette* on June 8, 2002 and posted on the Internet on June 9, 2002);
- ▶ preparation of an Initial EA that defines the scope of the more complete analysis to be carried out in the next stage;
- ▶ preparation of a Draft EA, including an in depth analysis of the issues raised in the Initial EA, which are expected to have likely and significant impacts on the Canadian environment; and
- ▶ preparation of a Final EA report, to be released after the conclusion of the negotiations.

The analytical methodology for conducting an EA involves four stages.

- ▶ In Stage One, we examine the coverage of the potential agreement and its overall economic relevance in the Canadian context.

¹ See DFAIT's Sustainable Development homepage at www.dfait-maeci.gc.ca/sustain/menu-en.asp.

- ▶ In Stage Two, we identify *likely* environmental impacts, if any, of trade-induced economic and regulatory changes. The analysis takes into account the fact that economic growth will continue to influence industrial activity irrespective of Canadian objectives to liberalize or take action in a certain area. Similarly, it recognizes that autonomous regulatory activity by Canadian governments will continue, along with the trade liberalization flowing from Canada's regional and bilateral free trade agreements and negotiations. In some cases, identifying discrete trade-induced economic or regulatory change stemming from the new WTO negotiations may only be possible at a very macro or general level.
- ▶ In Stage Three, we assesses the *significance* of those *likely* environmental impacts.
- ▶ In Stage Four, we identify mitigation and enhancement measures to address negative or positive environmental impacts. These may include new policy programmes or modifications to existing ones, changes in a negotiating position, regulatory amendments, or co-operative efforts with other countries or organizations.

Public consultations are an integral part of the EA process. The general public, the provinces and territories, and Sectoral Advisory Groups on International Trade (SAGITs), whose membership includes representatives from business, academia, and non-government organizations (NGOs), have been consulted in the drafting of this report. The Government of Canada will continue to consult with them throughout the EA process and will take their comments into consideration in the preparation of the Draft and Final EA reports.

B. The Initial Environmental Assessment (EA)

This report represents the second step of the EA process and will cover seven areas of negotiation: agriculture, non-agricultural market access, services, rules, trade and environment, wines and spirits registry, and dispute settlement. Each will be introduced by a description of what the negotiations intend to cover and what Canada is seeking.

The Initial EA carries out the four stages of analysis in keeping with the framework, although at a different degree compared to the Draft or Final EAs. The Initial EA's main objective is to identify the potential sectors or activities that may be affected by trade negotiations, and to scope out the main environmental issues that might arise as a result of negotiations. Analysis will be more qualitative than quantitative.

In reviewing this assessment, we must keep in mind the following:

- ▶ We are not assessing the environmental impact of economic growth *per se*, but of the economic activity and trade policy changes resulting from the WTO negotiations. It is a challenge to identify the incremental economic effects solely attributable to trade liberalization as there are many macro- and microeconomic forces at play that influence the pattern and flow of trade.
- ▶ It is also a challenge to segregate the effects of trade negotiations in the WTO from those resulting from Canada's other trade negotiations or implementation of existing trade agreements, regional or bilateral.
- ▶ We are in the early stages of WTO negotiations, with the exception of agriculture and services negotiations, which began in 2000. The actual trade policy changes of the new round will not be known until after the round is concluded (the target date is January 1, 2005), until the agreement enters into force and obligations therein fully implemented. The actual economic effects will depend on how various economic actors, producers and consumers, react to the new trade policy environment.
- ▶ The framework recognizes that assessing the environmental implications of trade negotiations (policies) is "considerably more complex than project assessments due to the increased uncertainty of outcomes and the influencing variables involved. This uncertainty is compounded by limitations on data and constraints on the predictability of policy outcomes. Relatively speaking, environmental assessments of projects deal with site-specific variables that are tangible and quantifiable."
- ▶ More rigorous analysis will be undertaken, as appropriate, in the Draft and Final Environmental Assessments.
- ▶ None of the negotiations limit the ability of Canadian governments to legislate for environmental protection.
- ▶ The Initial EA focuses only on the areas where we have a negotiating mandate. Should there be agreement in the future to negotiate on other issues, including the so-called Singapore issues, these will be subject to an environmental assessment².
- ▶ The Government recognizes that there are other trade-related environmental issues that raise concern. These issues are not addressed in this Initial EA, because the Doha Development Agenda does not mandate direct negotiations on them. However, in other fora, Canada is addressing issues such as:

² The Singapore issues are trade and investment, trade and competition policy, transparency in government procurement and trade facilitation.

- the precautionary approach in domestic science-based regulation - a version of the precautionary approach already exists in the General Agreement on Tariffs and Trade (GATT) Article XX and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), in particular Article 5.7;
- the regulation of genetically modified foods - the ability to regulate in the public interest is not undermined by the WTO agreements; and
- labelling to indicate so-called non-product related process and production methods - WTO Ministers have not agreed on the need to re-open the Technical Barriers to Trade (TBT) Agreement or SPS Agreement. On this point, there is a broad based discussion of various issues related to product labeling being pursued in the Committee on Technical Barriers to Trade. As well, Ministers specifically asked the Committee on Trade and Environment to look at the matter of “labeling for environmental purposes” and to report on the subject at the Fifth WTO Ministerial Conference.

The Government of Canada welcomes comments on this Initial EA. Feedback on the analysis of the economic relevance of new negotiations and the initial assessment of the likelihood and significance of resultant environmental impacts is welcome, as well as comments on opportunities to mitigate any negative environmental impacts, and to enhance any positive effects, as may already be identified at this stage. Comments on this document can be sent to consultations@dfait-maeci.gc.ca .

II. AGRICULTURE

The Uruguay Round (UR) of WTO multilateral trade negotiations (1986-1993) marked the first time that agriculture was brought under a rules-based regime, with binding commitments to reduce domestic support and protection. Under the UR's Agreement on Agriculture, agricultural trade rules and commitments were set out for market access, domestic support, and export competition. The Agreement also committed Members to continue the process of agricultural trade reform by entering into new negotiations in 2000; these negotiations have been underway since March 2000. During the first phase (March 2000 - March 2001), Members presented proposals on what they wanted to achieve through the negotiations. In the second phase (March 2001 - March 2002), WTO Members discussed in greater detail the ideas they presented during the first phase.

In November 2001, WTO Members launched the Doha round of multilateral trade negotiations with the ongoing negotiations on agriculture as part of its mandate. The Doha Ministerial Declaration provided guidance for the agriculture negotiations while recognizing the work already completed during the first two phases of negotiation. The Doha Declaration calls for negotiations aimed at: reductions, with a view to phasing out, of all forms of agricultural export subsidies; substantial reductions in trade-distorting domestic support; and substantial

improvements in market access.

The next major milestone will be the establishment of modalities by March 2003.³ In order to meet this deadline, Members have agreed to an intense work program. In June 2002, Members met to address export competition. Subsequent meetings in September addressed market access and domestic support. In mid-December, the Chair of the Agriculture negotiations will circulate an overview paper of the negotiations held to-date. This paper will be the basis for intensive discussions in early 2003 leading to the finalization of a modalities document by March 31, 2003.

As it has done throughout the WTO negotiations, Canada continues to pursue its initial negotiating position (announced in August 1999)⁴ that calls for: the elimination of export subsidies; maximum reduction, or elimination, of domestic support that distorts agricultural production or trade; and substantial improvements in market access for all agriculture and food products.

In keeping with the framework, this section of the Initial EA is based on a non-exhaustive literature review and on notional inferences of how expected production changes could potentially affect the Canadian environment. The analysis in this section focuses on the likely domestic environmental impacts of liberalized agricultural trade, such as those pertaining to: soil, water, and air quality, and biodiversity. External or international effects of liberalized agricultural trade such as trans-boundary spillovers, environmental impacts on trading partners, and those related to changes in international transportation are not considered in this assessment. For the purpose of providing this initial assessment, an abstract scenario envisioning a 50 per cent reduction in the current levels of the three trade-distorting agricultural policies identified above, and the continuation of Canada's supply management policies, has been used to evaluate the potential environmental impacts of the outcome of these trade negotiations.

A. Likely Economic Effects of Agreement Being Negotiated

Summary of Existing Trade Distortions

The Agreement on Agriculture which emerged from the Uruguay Round of multilateral negotiations in 1994 started WTO Members on the path towards liberalized agricultural trade. Nonetheless, distortions to agricultural trade due to market access restrictions, the use of market-distorting domestic support, and export subsidies remain large compared to industrial sectors and vary significantly by both country and commodity. As such, the economic effects of liberalized agricultural trade can be analysed by considering the impacts of multilaterally increasing market access and decreasing use of trade-distorting domestic support and export subsidies.

³ Modalities are the numerical targets, formulas and rules that are the basis for countries' commitments. The March 2003 modalities text would serve as the basis for countries' draft offers, which are to be presented at the Fifth WTO Conference in Mexico in September 2003.

⁴ For more information on Canada's position, visit www.agr.ca/cb/news/1999/n90819ae.html.

Impact of Multilateral Liberalization: Review of Recent Literature

Three recent studies were reviewed for the purpose of this assessment.⁵ According to the first, by the United States Department of Agriculture (USDA), full elimination of agricultural tariffs, domestic support, and export subsidies would increase world agricultural prices by 12.0 per cent relative to current levels.⁶ Tariffs have the greatest price-distorting effects (6.0 per cent), followed by domestic support (3.6 per cent - includes only government budgetary outlays on output and input subsidies and farm payments) and exports subsidies (1.5 per cent). It should be noted that because the economic impacts of these policy distortions are mutually reinforcing, the total estimated effect of eliminating them separately is less than the total estimated effect of eliminating them simultaneously.

The largest increase in world prices, above trend levels, would occur in livestock and animal products, wheat, sugar, and other grains. The elimination of tariffs would have the greatest effect on livestock and sugar prices, while the elimination of domestic support would affect wheat and other grains. The elimination of export subsidies would mainly affect the prices of sugar, livestock, and animal products, fruits and vegetables, and wheat. Resulting price increases would encourage increased market-based production.

While the results of the other two studies are not reproduced here, the specific scenarios they examined provided additional information concerning the relative impact of reduced use of specific trade-distorting policy instruments. In general, these studies yield similar results to the USDA document, thereby strengthening the rationale for using those estimates to predict the potential economic effects of the current agriculture negotiations.

The 50 Per Cent Scenario

Since any agreement resulting from the current agriculture negotiations will be the result of a compromise between parties with divergent interests, it is unlikely the negotiations will result in a complete elimination of trade-distorting measures, and impossible to accurately predict the

⁵ Mary Burfisher, et al., "Agricultural Policy Reform in the WTO: The Road Ahead" in *Agricultural Economic Report*, No. 802 (Washington, DC: USDA, Economic Research Service, 2001) - considers the implications of fully eliminating trade distorting policies, including the impact on world prices; Aziz Elbehri, et. al., *Agriculture and WTO 2000: Quantitative Assessment of Multilateral Liberalization of Agricultural Policies*, (Washington, DC: The World Bank, 1999) - examines scenarios involving tariff reduction and Tariff Rate Quota (TRQs) expansion; and Organization for Economic Co-operation and Development, *A Forward-looking Analysis of Export Subsidies in Agriculture*, (Paris: OECD, 2001) - assesses the economic effects of export subsidy elimination.

⁶ The direction of a price change due to a change in border protection for a particular commodity depends on whether a country is in an exporting or importing position for that commodity. For importing countries, a tariff reduction will lead to lower domestic prices (i.e., as the internal prices move towards the world price) and concomitantly higher demand. Increased demand in importing countries will in turn lead to higher world prices and therefore to increased prices for exporting countries. Hence, multilateral tariff reductions will lead to increased world prices and by corollary, increased domestic prices for exporting countries.

outcome. Thus, an abstract benchmark has been used for purposes of the Initial EA: a 50 per cent reduction in current levels of export subsidies, trade-distorting domestic support, and market access restrictions, with the maintenance of supply management schemes. Please note that the 50 per cent scenario is not a statement of Canada's objectives, nor a speculation regarding the possible outcome of the negotiations. Rather, it serves as an analytical tool for conducting the Initial EA.

Under this scenario, it is assumed the major economic impact on commodities would come through reduction of the Aggregate Measure of Support⁷ and export subsidies, and through expansion of Tariff Rate Quotas (TRQs)⁸. Reduced tariffs and trade-distorting domestic support would increase both trade in, and world prices for, cereals (wheat, coarse grains), oilseeds, and red meat (beef and pork) – to the benefit of Canadian producers.

Assessing the impact of this scenario on Canada is difficult. Nonetheless, it is expected that a moderate increase in world prices for cereals and other crops would lead to slight increases in Canadian production levels. For livestock, reduced tariffs and expanded TRQs would help raise international, and hence, domestic prices. Higher feed costs would likewise contribute to higher livestock prices, while partially offsetting increased profit opportunities made possible by livestock price increases. This would likely result in small increases in beef production and modestly higher increases in pork production.

In summary, under the abstract 50 per cent scenario, world prices and production levels in the Canadian agri-food industry would likely experience modest increases, both in the aggregate and for most commodities. In addition to the economic benefits of increased prices and production levels, the outcomes of negotiations on agriculture will also benefit the Canadian agriculture and agri-food sector by strengthening the multilateral, rules-based regime governing agricultural trade. For example, a strengthened regime will benefit Canadian producers by providing certainty that other countries cannot use arbitrary or discriminatory restrictions on trade. Moreover, a strengthened agricultural trade regime will enable the Government of Canada to better defend the interests of Canadian producers by ensuring that disputes are settled according to mutually agreed rules and not the relative economic or political clout of the disputants. Also, clear and transparent rules for agricultural trade will allow Canadian producers to diversify their operations as they will be able to enter and operate in new markets more easily.

⁷ This is a WTO mechanism for calculating maximum allowable expenditure by Members on trade- and production-distorting policies.

⁸ TRQs provide a certain level of access (within access) at a tariff rate that is usually lower than that charged on imports in excess of the quota volume (over-access). TRQs were established for many products for which non-tariff barriers had been replaced by tariffs through tariffication as a result of the Uruguay Round.

B. Likely Environmental Impacts of Identified Economic Effects

From an environmental perspective, the most significant changes in agricultural production, including changes in inputs, are changes that affect land use (e.g., crop-land under summerfallow, use of marginal lands) and changes in livestock numbers. Overall, crop and livestock production would be expected to increase marginally under the 50 per cent scenario. It is assumed that such increases would occur primarily in regions where production is currently focussed – implying that most expected increases in crop acreage and livestock numbers would occur in the Prairie region.

Impact of Agriculture on the Environment

Primary agriculture unquestionably has an impact on the environment, especially in the intensively-managed areas of arable land in southern Canada. The sector uses various natural resources (such as land, air, water, and biological resources) to produce agricultural products and thus, can have a negative impact on these resources. The Government of Canada continues to make considerable effort to understand the impact of agricultural practices and to seek ways to reduce this impact to ensure the sector uses natural resources in a sustainable manner (see *Section D: Agri-Environmental Mitigation Programs and Measures*). Agriculture and Agri-Food Canada's (AAFC) Agri-Environmental Indicators, for example, have been developed to provide the information required to assess the sector's impact and environmental performance over time (see **Table 1** in **Appendix A** for highlighted findings).

General Environmental Impact of Agricultural Trade Liberalization

Reductions in subsidies and trade barriers will likely lead to an increase in **production** in countries, such as Canada, which already have relatively low subsidies. This may increase environmental risks somewhat, depending on where and how the increases occur.

Since Canada's agriculture is of relatively low **intensity** compared to that of most other OECD countries, it is less likely to cause environmental damage, and is better able to maintain production resources.

It is unclear what effect, if any, trade liberalization would have on industry size or **structure**. In any case, there is no clear relationship between farm size and the scale of its environmental impact. While some argue that larger farms have more negative environmental impacts, there is no consensus on this issue. Indeed, some evidence suggests larger farms are more likely to adopt more sustainable production practices, such as no-till cropping, soil testing, and integrated pest management.⁹

⁹ Agriculture and Agri-Food Canada, *Manure, Fertilizer and Pesticide Management in Canada: Results of the 1995 Farm Inputs Management Survey (FIMS)*, (Ottawa: AAFC, 1998).

Trade liberalization could be expected to have **secondary** effects on food processing and transportation, which would also have environmental consequences. On the positive side, trade liberalization is likely to lead to more exports of low-volume processed goods, as opposed to bulky raw commodities, thus potentially reducing fuel consumption and air pollution. On the other hand, it may also lead to increases in the total volume of Canadian international trade, thereby raising the environmental impacts of transportation; this trend, however, would be countered by decreased exports from countries currently using export subsidies. In the overall context, these potential impacts are likely to off-set each other.

Over the past decade, environmental standards and **regulations** for agriculture in many OECD countries, including Canada, have tended to become more stringent, regardless of agricultural trade liberalization. Nonetheless, countries' regulations on agricultural production / farm practices for the purpose of minimizing their environmental impacts will continue to have to meet WTO requirements concerning agricultural programming initiatives – particularly those tied to domestic support. Under the current rules of the WTO Agreement on Agriculture (AoA), countries can institute and fund programs with environmental objectives without limitations as long as those programs are not trade-distorting (i.e., they meet the requirements of the “green box”, as defined under Annex 2 of the AoA)¹⁰. However, if a program is trade-distorting, its funding level must be consistent with the country's commitment levels and other obligations. Canada favours using policies/programs that are non-trade-distorting, and thus, it has sought to design agri-environmental programs that meet "green box" criteria. Consequently, the current agriculture negotiations should have little impact on Canada's present or future agri-environmental programming as Canada will continue to seek to design non-trade-distorting programs and policies which meet "green box" criteria.

C. Significance of Identified Likely Environmental Impacts

Environmental Impacts of Proposed Liberalization Scenario

As summarized above, the 50 per cent scenario would likely cause world prices for Canadian crops and red meats to increase slightly or moderately, while causing production levels for those products to increase only slightly. As only limited economic changes are expected to result under the 50 per cent scenario, the environmental impact of such changes is likewise expected to be minimal in the aggregate.

Table 2 in Appendix A presents, on a commodity by commodity basis, the potential

¹⁰ The term Green Box pertains to rules that exempt certain domestic support from being included in the aggregate measure of support (AMS) and thereby from commitment on total AMS. Exempt support consists of measures that are considered to have no, or at most minimal, trade- or production-distorting effects. They must meet the criteria of Annex 2 of the Agreement on Agriculture. Support under policies such as the following examples can be exempt if it meets the specific criteria applying to the policy type: research, inspection and classification, extension, and marketing and promotion; domestic food aid; decoupled income support; income insurance; disaster relief; structural adjustment; environment; and regional assistance.

environmental impacts of the likely economic changes flowing from the 50 per cent liberalization scenario - including their likely significance. It should be noted that these potential environmental impacts are expected to be minimal considering the limited production changes expected, the federal and provincial environmental legislation currently in place, and the new environmental policies planned by AAFC for the near future (see below).

D. Agri-Environmental Mitigation Programs and Measures

Environmental Sustainability: A Key Priority

The principle of environmental sustainability has guided the design of Canadian agricultural safety nets for more than a decade¹¹ and is included in the current *Framework Agreements on Agricultural Risk Management*¹². Moreover, as stated in the new Agricultural Policy Framework (see below), the principle will continue to guide the design of future AAFC programs to help ensure agriculture producers adopt environmentally responsible practices.

The Agricultural Policy Framework (APF)

The environment is one of the five key priorities of the new APF, announced by the federal government in June 2002. The APF's objective is to strengthen Canadian agriculture by making the sector the world leader in food safety and quality, environmentally responsible production, and innovation.¹³ Through the APF, federal, provincial, and territorial governments aim to assist producers in accelerating the adoption of improved environmental practices across the country (e.g., via environmental farm plans). Such efforts will help offset any negative environmental impact which may result from liberalized agricultural trade.

In addition to the APF funding, the Government of Canada has committed \$264.5 million for environmental action, such as: improving access to newer and more environmentally friendly pesticides; increasing the number of farms with environmental plans; taking environmentally fragile land out of production; and developing renewable energy sources.

Government Agri-Environmental Initiatives

The federal government and AAFC fund various initiatives intended to improve the environmental performance of the agri-food sector, for example:

¹¹ i.e., since the *Farm Income Protection Act* (FIPA) came into effect in 1991.

¹² The *Framework Agreement on Agricultural Risk* provides a framework for federal-provincial negotiation and administration of agricultural risk management programs in Canada. Such agreements set out: 1) objectives and principles to guide the development of agricultural risk management programs; 2) parameters and disciplines on the design of programs; and 3) responsibilities for funding, coordination, periodic reform, monitoring and management.

¹³ <http://www.agr.gc.ca/cb/news/2002/n20620ae.html>

- ▶ the *Greenhouse Gas Mitigation Program for Canadian Agriculture*: to identify and promote the adoption of soil, nutrient, and livestock best management practices that reduce greenhouse gas emissions;
- ▶ *Countryside Canada*: to recognize farmers and ranchers for exemplary agri-environmental stewardship initiatives;
- ▶ the *Livestock Environmental Initiative*: to support research and development, environmental assessments, and technology transfer with regards to livestock; and, a national environmental management system standard for hogs;
- ▶ the *Greencover Initiative*: to promote sustainable land use and expand the area covered by perennial forages and trees by up to 1.6 million hectares over five years (2002-2007); and
- ▶ various initiatives related to soil and water conservation in the Canadian Prairies, delivered by the federal Prairie Farm Rehabilitation Administration.

Provincial environmental legislation and initiatives usually have more direct impact on farming operations. They include a range of mechanisms designed to encourage or require environmentally sound farming practices:

- ▶ extension services or funding to individuals or groups to carry out specific practices, develop infrastructure, or diversify operations to reduce the environmental impact of agricultural production;
- ▶ information documents on best environmental management practices;
- ▶ regulations on reducing agricultural pollution;
- ▶ policies encouraging the development of on-farm environment plans;
- ▶ legislation to regulate the siting, development, and operation of new or expanded livestock operations;
- ▶ scientific research on the impact of agriculture on the environment; and
- ▶ legislation to make the discharge of pollutants illegal.

Finally, there are numerous activities supported by non-government organizations (NGOs) which have specific environmental protection goals. For example, there are several projects in agricultural regions funded by *Ducks Unlimited*, the goal of which is to conserve wetlands for waterfowl in North America. Another example is the co-operation between industry and

environmental NGOs in leading the development of Environmental Farm Plans¹⁴.

Overall, the environmental impact of production changes resulting from trade liberalization would likely be minimal. Furthermore, in the near future, government policy (i.e., the implementation of the APF) – in line with citizen expectations – will increasingly ensure that agriculture is produced in an environmentally responsible way. Already, more rigorous farm environmental regulations have been implemented in several provinces. Thus, the potential environmental impacts of the economic changes flowing from the 50 per cent liberalization scenario, if any, are expected to be minimal considering: the limited production changes expected; the federal and provincial environmental legislation currently in place; and, the new environmental policies planned by AAFC for the near future.

III. NON-AGRICULTURAL MARKET ACCESS¹⁵

Non-agricultural market access negotiations (NAMAN) are the second of three major market access negotiations outlined in this paper; the first, agriculture, was addressed above while the third, services, will be addressed further below. Traditionally, negotiations in “non-agricultural goods” have been at the centre of each of the previous eight rounds of GATT/WTO negotiations. These particular negotiations, which are conducted in a group separate from that of the other major negotiations, encompass all products other than agricultural products - this includes fish and fish products, forest products and industrial goods.¹⁶

At Doha, Ministers agreed to commence

negotiations which shall aim, by modalities to be agreed, to reduce or, as appropriate, eliminate tariffs, including the reduction or elimination of tariff peaks, high tariffs, and tariff escalation, as well as non-tariff barriers, in particular on products of export interest to developing countries. Product coverage shall be comprehensive and without *a priori* exclusions. The negotiations shall take fully into account the special needs and interests of developing and least-developed country participants, including through less than full reciprocity in reduction commitments, in accordance with the relevant provisions of Article XXVIII bis of GATT 1994 and the provisions cited in paragraph 50 below. To this end, the modalities to be agreed will include appropriate studies and capacity-building measures to assist least-developed countries to participate effectively in the

¹⁴ e.g., *Alberta Environmental Farm Plan* - www.lethbridgecollege.ab.ca/calendar/ag_lecture/ag_lecture/aefp.pdf

¹⁵ “Non-agricultural market access products” include the full range of industrial goods including primary resource products; semi-manufactured and fully manufactured goods. It also includes fish and forest products. In essence - under the Harmonized System of Tariff Classification this negotiation includes: Chapter 3 (fish); tariff headings 1603, 1604 1605 (fish products) and chapters 25 - 97 inclusive - with only minor exceptions).

¹⁶ In this Environmental Assessment, the terms “non-agricultural goods” and “industrial goods” are used interchangeably.

negotiations.¹⁷

In addressing this mandate, the Government of Canada has pursued its initial negotiating position¹⁸ based upon the mandate provided in the Doha Declaration cited above, and continues to do so.

A. Economic Effects of Negotiations

Tariff negotiations have formed the cornerstone of multilateral trade negotiations since the inception of the General Agreement on Tariffs and Trade (GATT) in 1947. Since 1947 the Contracting Parties of the GATT have negotiated eight major “rounds” of tariff reductions, which have cumulatively reduced “most favoured nation” (MFN) average tariffs on industrial products from rates of 40 per cent or higher in the late 1940s to present rates of less than 4 per cent in

the case of developed countries and an estimated level of 25 per cent in the case of developing countries.

In addition, Canada has also eliminated (or is in the process of eliminating) tariffs in various free trade agreements (FTAs) with the United States and Mexico, Chile, and Israel, as well as a more recent agreement that will soon be implemented with Costa Rica. Further agreements now under negotiation, (including with Central America, the European Free Trade Association [EFTA], Singapore, as well as a Free Trade Area of the Americas [FTAA]) will add to this total.

Of Canada’s total industrial exports of \$339 billion in 2001¹⁹, more than \$303 billion of exports went to Canada’s current free trade partners, with an additional \$4.6 billion of trade flowing to countries where FTAs are now under active negotiation. In addition to this trade, exports of \$1.1 billion went to countries outside of the current WTO membership. Given these levels of domestic exports to existing and/or new FTAs under negotiation as well as a smaller amount to

¹⁷ See Paragraph 16 of the Doha Ministerial Declaration as adopted on 14 November 2001.

¹⁸ For further information on Canada’s Negotiating objectives in the case of Non-Agricultural Goods” see www.dfait-maeci.gc.ca/tna-nac/doharound-e.asp

¹⁹ All trade figures cited under the Non-Agricultural Market Access section are drawn from Statistics Canada (Trade Data Online) as available at www.strategis.ic.gc.ca/sc_mrkti/tdst/engdoc/tr_homep.html. Trade figures used in this assessment are based on Canada's "domestic" exports only as opposed to "total exports" which consist of the sum of domestic exports and re-exports leaving Canada (through Customs) for a foreign destination. We focus on "domestic exports" (which may be defined as the exports of all goods grown, produced, extracted or manufactured in Canada leaving the country [through Customs] for a foreign destination as well as that of imported merchandise which has been substantially enhanced in value) as this category best captures the net effect of production in Canada. For the purposes of this environmental analysis, we exclude re-exports (which refer to the export of goods that have previously entered Canada and are leaving in the same condition as when first imported) as the environmental impact of these exports is substantially more limited (impact is more focussed on transportation-related issues) versus the overall production cycle of "domestic" exports.

non-WTO parties, this leaves a remainder of \$30 billion, or about 9 per cent of total industrial exports, as Canada's current level of trade to WTO Member markets that figure in the new Round of negotiations.

Since the late 1970s, economists have attempted to assess the projected economic benefits and impact of multilateral trade reforms through the use of various applied general equilibrium (AGE) modelling exercises. Various modelling exercises estimate income gains from a new round of trade negotiations, including in the area of non-agricultural goods. A recent review²⁰ has suggested that "a qualified case can be made that the Doha Round has the potential to yield a positive balance of benefits" for all WTO Members.

Of the five major studies reviewed, the most ambitious modelling forecast is by Brown and Stern²¹. This study suggests comparatively large overall income gains from post-Uruguay trade liberalization. The authors estimate an overall static net welfare gain of US \$211 billion based on the assumption of a 33 per cent reduction in manufacturing tariffs. Of this total, the authors estimate a net welfare gain to Canada of US \$2.8 billion, leading to a rise in exports of at least US \$3.3 billion and a corresponding rise in imports of US\$3 billion. The authors further maintain that this estimate should be considered on the low side, because of the absence of dynamic gains (i.e., the estimates do not take into account such factors as capital accumulation or productivity increases).

While a successful new Round will bring economic benefits to Canada, these benefits must be viewed in perspective against Canada's gross domestic product of \$1.09 trillion in 2001.

While studies confirm that Canada, similar to other WTO Members, may realize net economic benefits from this Round, these benefits will accrue over time and represent just one of many influences on Canada's economy. In the case of trade in goods, using 1988 as a base year, the percentage of Canada's GDP represented by exports grew from 23 per cent in 1988 to 38 per cent

²⁰ See John M. Curtis and Dan Ciuriak, "The Nuanced Case for the Doha Round", in *Trade Policy Research 2002* (Ottawa: Minister of Public Works and Government Services, 2002). Trade Policy Research 2002 is available at www.dfait-maeci.gc.ca/eet/TPR_Summary-e.asp

The authors make this assessment based on a calculation of the average results of liberalization as suggested in their review of five leading studies. Based on an empirical exercise which standardized the average of all five studies the authors suggest full liberalization (including that for agriculture, services and non-agriculture goods) would generate US \$700 billion additional income (equivalent to 2.5% of global GDP) with industrial goods liberalization alone accounting for 0.8% of global GDP or US \$224 billion. The authors then exclude the highest and lowest estimates of the five studies and based on the middle three studies suggest a more conservative estimate of the potential gains from trade of 1.4% of global GDP (a gain of US \$400 billion) with goods liberalization accounting for 0.6% of global GDP or US \$171 billion.

²¹ See Drusilla K. Brown, Alan V. Deardorff, and Robert M. Stern, "CGE Modeling and Analysis of Multilateral and Regional Negotiating Options" Discussion Paper # 468(January 23, 2001) available at <http://www.spp.umich.edu/rsie/workingpapers/wp.html>

in 2001. The percentage of goods imports has risen from 22 per cent in 1988 to 32 per cent in 2001. While further growth is expected as a result of this proposed negotiation, as well as other bilateral trade negotiations that are underway, the net economic effect is expected to be only incremental.

In multilateral negotiations, participants generally seek varying levels of liberalization. Given the early stage of this negotiation, it is impossible to predict what the ultimate result will be. However, for the purposes of this document, an overall tariff reduction of 50 per cent is used as an abstract benchmark to illustrate the potential economic impact of the Doha Round. This scenario is intended to be neither a reflection of Canada's objectives nor a prediction of the possible outcome of the negotiations.

For the purposes of this environmental assessment, analysis will focus on those sectors where liberalization to date has not been as significant or as comprehensive as others and which, therefore, hold the most immediate potential to generate future incremental trade flows as a result of new substantial liberalization. These sectors have a distinct comparative advantage in export markets as net contributors to trade flows through the generation of export revenues, as demonstrated by a history of exports and significant trade volumes in offshore markets. They include: Chemicals; Fertilizers; Environmental Goods; Fish and Fish Products; Forest Products (including both paper and wood); and Nonferrous Metals.

*Chemicals*²²

A large proportion of Canada's manufactured chemicals are exported, with sales of \$22.1 billion in 2001 with about 90 per cent of this total, or \$19.9 billion, destined for Canada's FTA partners – largely the US. Sales to offshore markets (including China, the European Union and the Republic of Korea) accounted for the remaining balance of \$2.2 billion. Offshore sales of some particular products are limited to some extent by freight costs, which represent a relatively high proportion of product value per tonne, thus limiting the geographic trading area for many products. World markets are being fuelled by demands from the rapidly growing economies of Asia, particularly China, Chinese Taipei, Republic of Korea, Thailand, and Malaysia. To date, this sector has benefited from an agreement in the last Round, which harmonized tariff rates amongst developed member participants at reduced rates. Additional liberalization, including the elimination of rates by developed countries, coupled with increased liberalization by those developing countries which are major users, would further promote Canadian exports.

²² Harmonized System: Chapters 28-29 (excludes tariff headings 2936, 2937, 2939, 2941), Chapters 32-39 inclusive (with minor exclusions). The following specific products are excluded: 2905.43 (mannitol); 2905.44 D-glucitol (sorbitol); 3301 essential oils; 3501 to 3505 albuminoidal substances, modified starches, glues ; 3809.10 finishing agents; 3824.60 sorbitol (other than that of subheading 2905.44).

*Fertilizers*²³

World demand for plant nutrients continues to grow significantly as a result of the increased demand for food caused by world population growth and by changing consumption patterns resulting from economic growth. Canada's comparative advantage is in potash and elemental sulphur used as a key ingredient in sulphur-based fertilizers, where it supplies about 40 per cent of world exports of both potash and sulphur. In 2001, fertilizer exports reached \$3 billion in total, of which \$1.3 billion or 43 per cent of total exports was destined for offshore (non-FTA) markets including China and Brazil. Further liberalization by key developing country markets, including both tariff and non-tariff barriers, would have the greatest impact on the future growth prospects of this industry.

Environmental Goods

The environmental industry provides goods (and services) for measuring, preventing, limiting, and correcting environmental damage. The industry spans a wide range of sectors, including the primary resource, manufacturing, and service sectors, and encompasses a broad range of products. Environmental exports are booming and are projected to grow at an average annual rate of 7 per cent to 2005 which ranks it among the fastest growing sectors in Canada. The environmental goods sector alone is estimated²⁴ to have exports of approximately \$8.0 billion in 2001. About 86 per cent of total goods exports, i.e., about \$6.9 billion, are destined for Canada's FTA partners, primarily the U.S., leaving \$1.1 billion for offshore market destinations that include the European Union and China.

The relatively small size of Canada's domestic market means that increased penetration of global markets is critical to attaining and sustaining industry growth. While tariff barriers are of lesser note in many developed country markets, other countries continue to maintain some significant tariff and non-tariff barriers in this sector. For example, the average "bound" (maximum) tariffs for industrial goods for Canada (5.3%), the U.S.(3.8%), Japan (3.6%), and the European Union (4.1%) stand in contrast to averages for India (59%), Turkey (41%), Venezuela (34%), Thailand (28%), and Australia (14%).

In 1997, Canada was one of four economies in APEC that nominated environmental goods (and services) as having potential for accelerated trade liberalization. Canadian technical experts worked with those of other countries to develop a trade liberalization proposal for the sector based on earlier OECD work. The resultant proposal was presented and endorsed by APEC

²³ Harmonized System: Chapter 31 and tariff heading 2503 (elemental sulphur)

²⁴ This estimate of exports is based upon a "draft" listing of environmental goods products as identified by APEC. This "draft" listing is used as an indicative guide to estimate a wide range of products that are of direct relevance to the environmental goods sector. The list of products to be included in this initiative will be subject to further negotiation as part of the overall non-agricultural market access negotiation - this will obviously impact on the indicative trade numbers that have been cited here.

leaders at their annual meeting in Kuala Lumpur, in November 1998. Canada believes that the APEC work can provide a basis for the negotiations on environmental goods taking place in the WTO.

The APEC economies utilized the OECD definition of the environment industry, i.e., “activities which produce goods and services to measure, prevent, limit, or correct environmental damage to water, air, and soil, as well as problems related to waste, noise, and eco-systems. Clean technologies, processes, products, and services, which reduce environmental risk and minimize pollution and material use, are also considered part of the environment industry.”

At Doha, the Ministers singled out the environmental sector as a target for liberalization. It is a priority for Canada to achieve significant gains in this sector, either through across-the-board reductions to industrial tariffs, through line-by-line negotiations, or through a sectoral agreement on environmental goods.

Fish and Fish Products²⁵

Canada has one of the world’s most valuable commercial fishing industries, worth almost \$5 billion a year and providing more than 120,000 jobs to Canadians. The capture fishing industry operates in three broad regions (Atlantic, Pacific, and freshwater), complemented by a growing aquaculture industry. In 2001, exports were valued at \$4.2 billion, with \$1.1 billion destined for markets other than our existing FTA partners. Outside of the United States, which is Canada’s largest export market (approximately 73 per cent of our seafood exports), Japan, the European Union and China are important offshore markets. This sector continues to face various tariff and non-tariff barriers in both developed and developing markets, and many processed products face substantially higher tariff barriers than are imposed on non-processed products.

Aquaculture production in Canada reached 123,924 tonnes in 2000, worth a record \$611.6 million. Aquaculture provides full-time and part time jobs for more than 14,000 Canadians and, in 2000, accounted for 13 per cent of the total Canadian production, by weight, of marine fish and shellfish, representing one quarter of our seafood production’s value. Since 1995 data suggest a levelling off of traditional fisheries landings while Canadian aquaculture production continues to grow, on average, 13 per cent annually.

Canada is one of the world’s key suppliers of farmed salmon, produced almost exclusively in British Columbia and New Brunswick. Atlantic salmon predominates with chinook and coho also produced. Trout, steelhead, and Arctic char are cultured in smaller numbers. The total value of finfish aquaculture in 2000 was \$559.4 million or 91 per cent of the total value of aquaculture production. Shellfish farming is an increasingly important contributor to Canada’s expanding aquaculture industry. Prince Edward Island’s cultured mussels are well known around the world, as is the suspended culture technology that developed them. Oysters (Atlantic,

²⁵ Harmonized System: Chapters 3 and 16 (i.e., 1603, 1604, 1605 only).

Pacific, and European), manila clams, and scallops are growing aquaculture industries, especially in British Columbia. In 2000, cultured shellfish represented 26 per cent of total aquaculture production, by weight, worth \$52 million or 8.5 per cent of total value.

Forest Products²⁶

The forest products industry is one of Canada's leading manufacturing sectors and largest net exporter. It is a cornerstone of the economy and a major component of the industrial structure and employment base of all regions of the country. Canada is the world's largest exporter of forest products, accounting for approximately 19 per cent of global forest product exports. In 2001, Canada's exports of forest products (both paper and allied products and wood products) surpassed \$46.6 billion, with more than 81.5 per cent (or \$38 billion) shipped to our FTA partners including the United States. Offshore sales, totalling some \$8.6 billion, included Japan, the European Union, China and Korea.

Market access issues are of major importance to the industry. To date, liberalization has been confined to the paper sector, which benefited from sectoral liberalization by developed countries in the last Round. New liberalization in the wood sector, including both developed and developing countries, and the extension of liberalization in paper to developing countries, would create new markets and opportunities for growth and market diversification.

Nonferrous metals²⁷

Canada is among the foremost producers of nonferrous metals in the world, and a leading exporter of metals. The bulk of the value of Canadian nonferrous metals production is made up of aluminium, nickel, copper, zinc, and lead, with lesser production in other metals. The Canadian industry is dominated by firms in the upstream (mining and smelting) stages, which tend to be large companies heavily dependent upon exports of primary products to world markets. The downstream sector is made up of small and medium-sized firms that specialize in semi-fabricated parts, fabricated parts, and products. In 2001, Canadian nonferrous domestic exports reached \$13.7 billion overall, with approximately \$10.7 billion or 78 per cent going to our FTA partners for whom trade is already duty-free. Offshore market sales of \$2.9 billion in total included Norway, the European Union and Japan.

The industry continues to face tariff and non-tariff barriers in various developed markets including the EU and Japan and in developing markets overall. These include tariffs on specific primary metals (e.g., aluminium) as well as escalating tariffs on further processed and higher value-added fabricated metal products. Further trade liberalization will bring distinct opportunities for major metals, including aluminium, as well as for other metals including

²⁶ Harmonized System: Chapters 44, 47-49 and 9406 (pre-fabricated buildings)

²⁷ Harmonized System: Chapters 74-81 inclusive.

cadmium, magnesium, cobalt, and molybdenum, as well as expanded opportunities for further fabricated products.

Related Impacts

Aside from issues more directly related to potential increased production in specific sectors associated with liberalization, there are also more generalized effects related to the transportation industry, which plays a key role in linking local production to exit ports for shipment to markets abroad. Growth in markets abroad will mean additional shipping requirements, particularly in the rail and ship sectors.

B. Likely Environmental Impacts

With respect to non-agricultural market access negotiations, the Initial EA identifies the likely and significant environmental impact as they relate to emissions, toxicity, and effluents, energy use, and harvest levels. However, increased production of these goods, resulting from the 50 per cent tariff reduction scenario above, is not expected to have a significant impact on Canada's environment, since only a small portion of Canada's exports would be affected by liberalization (the preponderant share of trade being subject to NAFTA and other FTAs) and also since there are mitigating factors in place as outlined later in this report.

With respect to environmental goods, further trade liberalization supports environmental goals by improving access to technologies, goods, and services that advance the objectives of sustainable development. Canada is well positioned as a world leader in environmental technologies. We have the right economic conditions, world-class skill sets, equipment and technology, and increasing numbers of leading-edge companies that are poised to take advantage of expanding world markets. Trade liberalization in this sector will create strong incentives for environmental firms to develop new, more efficient pollution prevention and conservation technologies.

As is the case with virtually all industrial products, an increase in production of environmental goods brought on by improved market access has the potential to cause certain environmental impacts. On balance, however, we would expect that the positive benefits of producing more and improved environmental goods and their dissemination to countries where such products are in short supply would far outweigh any potential negative downside caused by their expanded production.

As was stated earlier with respect to other identified sectors, increased environmental impact on the transportation industry would be relatively minor.

C. Significance of the Likely Environmental Impacts of NAMAN

In the case of industrial goods, a “successful Round” will provide enhanced market access to exporters while providing *a priori* benefits to importing countries through efficiency gains and lower prices of imported goods. Benefits will vary for different exporting countries and will depend on the degree of liberalization achieved.

While Canadian products may gain improved access to various world markets, competing products from all other WTO Member countries will also enjoy equivalent improved access to Canada under the Agreement. This may act to dampen some of the gains made by Canadian exporters. Further trade liberalization also means that Canada may gradually lose all or part of its preferential margin of access that it enjoys with its current free trade partners, in particular the United States, vis-a- vis other world competitors.

Members have committed to concluding the negotiations by January 1, 2005. In previous rounds, implementation dates (when tariff commitments would be fully applied) for an agreement were staged over a number of years after negotiations were concluded, with developing countries being provided longer implementation periods. Full implementation of this Round's agreement may likewise be staged over several years. Staging periods give governments and industry time to make adjustments to their new tariff commitments and also may give them more time to mitigate environmental impacts.

Aside from the projected gains from tariff liberalization, the negotiations also involve the objective of reducing or eliminating non-tariff barriers. However, the scope for negotiations in this area may be limited in view of the fact that many barriers are currently covered by other agreements which lie outside of the immediate negotiations and the fact that many barriers are applied on a selective basis with protective effects limited to distinct products. In these cases, the effects of liberalization are more difficult to measure and assess and correspondingly difficult to take into account.

D. Enhancement/Mitigation Options

It bears repeating that the vast majority of Canada’s exports go to countries with which we have free trade agreements. While it is our goal to increase access to other markets, even significant success in this Round will likely affect only a small portion of Canadian production and exports, given established trade patterns and commercial relationships with our FTA partners. The overall environmental impact of a new Round of trade negotiations is, therefore, not likely to be significant.

Following is a discussion of the various measures in place to mitigate negative environmental impacts in the sectors identified for liberalization.

Chemicals

For the chemicals industry, the principles of sustainable development are given expression through a broad range of environmental initiatives, including emission reduction/elimination, comprehensive waste management and recycling, the product life cycle management approach, and various corporate stewardship programs. The industry has demonstrated a strong commitment to effective voluntary approaches and has supported international standards and approaches to both establishing and achieving environmental goals.

In response to many of these challenges, the Canadian Chemical Producers' Association (CCPA) created in 1985 the *Responsible Care*® initiative, which affirms the commitment of member companies to operate according to standards on health, safety, and the environment. As a condition of CCPA membership, companies sign the "Statement of Responsible Care® and Guiding Principles," which includes specific obligations for the responsible management of chemicals and products. *Responsible Care*® is recognized internationally and commended by the United Nations Environmental Programme. Following the CCPA example, industry associations in more than 40 countries have adopted *Responsible Care*® for their own use.

Federal government policy and program initiatives (including the *Canadian Environmental Assessment Act*, the *Toxic Substances Management Policy*, the *Pollution Prevention Strategy*, and the *Canadian Environmental Protection Act*) have led to improved environmental quality. These initiatives, as well as others including those on the provincial level, contribute to the environmental sustainability of this sector.

Fertilizers

Canadian fertilizer producers are committed to sustainable development and are responding positively to environmental concerns by improving performance and continuing to focus on emission reductions. Canadian fertilizer production technology is among the most modern in the world, particularly in the production of nitrogen fertilizers where the industry fixes the level of atmospheric nitrogen, and also in the case of potash which needs little chemical processing. In the case of potash, Saskatchewan's potash mines are leaders in automation, employing considerable technical innovation and the most advanced technology to realize production and efficiency gains. Across the fertilizer industry, the use of energy is highly efficient and atmospheric emissions are being reduced to acceptable levels. Canadian nitrogen plants are among the most energy-efficient plants in the world. The emission of carbon dioxide in the production of ammonia, a fertilizer input, is unavoidable, but is being reduced by optimizing energy-use efficiency.

The Canadian Fertilizer Institute, an industry association which represents manufacturers, wholesalers, and retail distributors of commercial fertilizers, has issued *Canadian Fertilizer Industry Storage and Handling Guidelines* to provide information and guidance on measures to maintain or improve the level of safety associated with the storage and handling of fertilizers.

The guidelines are based on existing regulatory requirements and industry best practices.

In addition to industry initiatives and the numerous federal and provincial laws and regulations governing environmental practices, the *Fertilizers Act* addresses such matters as the sale, importation, registration, standards, packaging, labelling, and inspection of fertilizers.

Fish and Fish Products

While further liberalization by both developed and developing countries could spur both growth and market diversification in new markets, any such growth will be subject to supply restraints that ensure that fish and seafood products are harvested at a sustainable level. The Government of Canada, along with provincial and territorial governments, aboriginal organizations, coastal communities, and other stakeholders and interested Canadians, are committed to the sustainable development of our oceans, conservation, sustainable fisheries, and the protection of fisheries habitats through a variety of programs under the umbrella of the national *Sustainable Development Strategy*.²⁸

In recognition of the importance of the aquaculture sector, Fisheries and Oceans Canada (DFO) has developed the *Aquaculture Policy Framework*²⁹. This framework sets out how the Government of Canada will guide the development of this young industry in order to enable responsible growth and sustainable development. DFO's vision for aquaculture is to benefit Canadians through the culture of aquatic organisms while upholding the ecological and socio-economic values associated with Canada's oceans and inland waters.

The Canadian government is developing additional governance tools for the aquaculture sector that will clarify and ultimately improve on the delivery of our regulatory and policy commitments with respect to environmental and aquatic animal health issues. A significant increase in research and development funding, targeting environmental and production issues, ensures the aquaculture industry develops in a manner consistent with federal and global sustainable development principles. Provincial governments continue to bolster their policy and regulatory commitments to the aquaculture industry. Moreover, federal departments are working collaboratively with provinces and territories to ensure that a consistent sustainable development policy is applied to the aquaculture sector in Canada.

Forest Products

Especially since the late 1980s, Canadian governments at the federal and provincial levels have been taking steps to ensure that our forests are managed in accordance with sustainable development principles. Canada's commercial forest resources are largely managed by the

²⁸ Available on the Fisheries and Oceans Canada website at www.dfo-mpo.gc.ca/sds-sdd/index_e.htm

²⁹ Available on the Fisheries and Oceans Canada website at www.dfo-mpo.gc.ca/science/Aquaculture/

provinces through forest management tenure agreements that strictly regulate harvesting, silviculture, and forestry practices. These policies provide for regulatory mechanisms based on sustainable development principles to ensure that timber is not harvested at rates exceeding forest regrowth capacity. Harvesting practices are governed by an annual allowable cut (AAC) which is established for each species, based on its growth potential in specific forest management areas in all provinces and territories and which takes into account harvesting cuts and the combined effect of fire, disease, and insects. Forest companies leasing public lands must assume responsibility for regeneration to maintain or improve pre-harvest production capacity.

In addition to an emphasis on sustainable forestry harvesting practices, major revisions to pulp and paper mill effluent control discharge standards and environmental assessment legislation occurred in the 1990s. This involved changes at the federal and provincial levels. As a result, major improvements occurred in the design and operation of mills with large investments in pollution prevention technologies and effluent treatment plants. Marked reductions were achieved in pollutant discharges with deposits of biochemical oxygen demand, total suspended solids, and dioxins and furans declining by 94 per cent, 70 per cent, and 99 per cent, respectively, compared to their pre-regulatory development values. Canadian mill effluent quality and environmental control standards are now among the best in the world.

In addition to revamping environmental impact assessment for new mills, federal and provincial governments have strengthened existing mill effluent regulations. As of January 1, 1994, pulp and paper mills are required under the *Canadian Environmental Protection Act* to reduce effluent dioxin and furans to non-detectable levels. At the end of 1995, the new federal *Fisheries Act* regulations further raised mill effluent standards. As a result, Canadian standards are now as stringent as those in Europe and the US or more so.

Nonferrous Metals

Canada's federal, provincial, and territorial governments play complementary roles in the mining and metals sector. The federal government is responsible for nuclear energy, including uranium mining, and the regulation of all mining activities in the Yukon, Northwest Territories, and Nunavut. The federal government is also responsible for administering regulations under the pollution prevention provisions of the federal *Fisheries Act* that deal with effluents from industries such as metal mining. The provincial governments own the natural resources within their jurisdiction and are responsible for policies and regulations covering all aspects of exploration, development, and extraction of mineral resources, as well as the construction, operation, closure, and reclamation of mine sites in their jurisdiction. Responsibility for environmental protection and conservation is shared and the federal (mandated under the *Canadian Environmental Protection Act*), provincial, and territorial governments are key partners in the sustainable development of minerals and metals.

Canada's policy on the sustainable development of minerals and metals was adopted in 1996. Underlying the policy is recognition that current investments confer economic and social benefits

on both present and future generations. *The Minerals and Metals Policy of the Government of Canada: Partnerships for Sustainable Development* (the Policy)³⁰ describes, within areas of federal jurisdiction, the Government's role, objectives, and strategies for the sustainable development of Canada's mineral and metal resources.

Both domestically and internationally, the minerals and metals sector has come under scrutiny for its performance with respect to the environment, and efforts to address these problems have led to more stringent environmental regulations in such areas as toxicity and air emissions. Canada's mining industry supports research to improve understanding of the potential health and environmental effects of minerals and metals.

The sector also faces other challenges, including the reuse and stewardship of metals and mineral products. Recycling, for example, is becoming a key area of industrial growth contributing significantly to reduced energy use and increased materials efficiency. Due to the fact that metals have relatively high material value and unlimited recycling potential, metal recycling is widely practised. For example, in provinces with deposit return systems, return rates on aluminum beverage cans are in the 80-90 per cent range. In provinces with blue box programs, aluminum beverage cans – because of their high value - are significant contributors to the success of the programs. End-of-life lead acid batteries are virtually 100 per cent recycled in Canada at secondary lead processing facilities. Automobiles and appliances are extensively recycled in mini-mills which produce products such as steel studs and "I" beams for the construction industry. Designing products for recyclability will likely be a significant growth opportunity. Recycled metals have already become the primary source of material in some regions, specifically India and China.

Finally, worldwide changes in the energy market will also have a profound impact on the Canadian minerals and metals processing industries. Canada's mining industry is a major user of energy and, although it does have access to significant quantities of clean hydro-generated electricity, it will continue to direct attention to reducing energy use and air emissions.

IV. TRADE IN SERVICES

Services – particularly knowledge-based industries such as research and development and engineering services – are among the fastest-growing segments of Canada's economy. The services economy is very diversified. It includes sectors such as professional services, construction and engineering services, environmental services, financial services, and tourism³¹. The share of Canada's economy devoted to services is on the rise. In 1961, services accounted

³⁰ Available on the Natural Resources Canada website at www.nrcan.gc.ca/mms/policy/policy_e.htm

³¹ Environmental services constitute a very broadly defined category including sewage services; refuse disposal services, sanitation, and similar services and other environmental services; noise abatement services; nature and landscape protection services; and other environmental protection services not included elsewhere.

for 55 per cent of Canada's Gross Domestic Product (GDP). In 1997, this figure was just over 65 per cent.³² The percentage of workers employed in services is also on the rise. Between 1961 and 2001, the services share of total employment rose to 74 per cent in 2001 from just over 54 per cent.

Canada's service exports totalled \$56.6 billion in 2001, representing about 12 per cent of Canada's exports of goods and services. Compared to merchandise trade, the pace of growth of services trade has lagged over the past decade. This suggests that there is ample scope for services trade to expand. The US remains Canada's principal trading partner in services – accounting for 59 per cent of Canada's total services exports in 2001 (compared to 85 per cent for goods) and 62 percent of Canada's services imports.

To ensure that all countries, regardless of their size or power, trade under a set of known and agreed rules, Canada and other negotiating partners negotiated the framework of the General Agreement on Trade in Services (GATS). Similar in principle to the General Agreement on Tariffs and Trade (GATT), which deals with trade in goods, there are two primary objectives of the GATS – first, to treat all signatories equitably when accessing foreign markets; and second, to promote progressive liberalization of trade in services.

The GATS allows each Member to choose – through its specific commitments – to what extent it wishes to open its markets to foreign service providers in specific services sectors. Services sectors are divided into twelve broad categories according to the *Services Sectoral Classification in the GATS*. Therefore, the GATS is a highly flexible agreement through which countries can choose the degree to which they wish to liberalize in any given category or type of service. The Agreement also clearly recognizes the rights of governments to regulate services in order to meet national policy objectives, and Article XIV of the GATS states that nothing in the agreement shall prevent the adoption or enforcement of measures necessary to protect human, animal, or plant life or health.

A. Economic Effects of GATS negotiations

WTO countries agreed at the end of the Uruguay Round to subsequent rounds of negotiations aimed at progressive liberalization of trade in services. The Doha Ministerial set in motion the market access phase of the GATS negotiations and mandated that “participants shall submit initial requests for specific commitments by June 30, 2002 and initial offers by March 2003.” The economic effects of GATS negotiations (and any environmental effects flowing from this change) could be brought about through additional liberalization commitments undertaken by Canada in the GATS negotiations.

³² 1997 is the latest year for which current-dollar GDP is available. Current-dollar GDP is calculated based on benchmark surveys; figures after 1997 are estimated numbers and are published in the form of constant dollars.

Canada's initial GATS offers, to be submitted by March 31, 2003, will reflect Canada's general negotiating objectives (as set out at the beginning of negotiations in March 2001) and will incorporate the results of consultations held with a wide range of stakeholders since January 2000, including environmental stakeholders. The initial offers will be developed in close cooperation with federal and provincial regulatory departments and agencies. The offer will not include any services related to health, public education, social services or culture. Canada will ensure that its position at all stages of the GATS negotiations will be fully consistent with the right to regulate and to introduce new regulations on the supply of services in order to meet national policy objectives, including regulations relating to environmental protection.

In its requests to other countries, Canada will seek greater market access and national treatment commitments in sectors and in countries of key interest to our service providers. As a general rule, Canada will ask its trading partners to at least match Canada's current level of commitments. At this time, it is unclear to what degree further liberalization of services trade will stimulate growth in the Canadian services economy.

B. Likely Environmental Impacts

As noted in the *Framework for Conducting Environmental Assessments of Trade Negotiations*, "it is difficult (and sometimes impossible) to isolate the environmental impacts of a specific trade agreement from other agreements or from factors external to trade." This is particularly true for trade in services, as it is not restricted by the use of tariffs and is therefore not easily measured. Barriers to trade in services may include such things as: requirements for local partners, foreign ownership restrictions, residency requirements, and opaque or non-transparent rules/regulations.

Generally, the environmental impacts that could result from the economic activities of increased trade in service sectors could include effects on:

- ▶ air pollution - deterioration or improvements in air quality;
- ▶ water pollution - deterioration or improvements in water quality of rivers, lakes, and oceans; conservation or wastage of water supplies;
- ▶ land conservation - land usage, habitat preservation, destruction, or fragmentation;
- ▶ biodiversity - conservation or reduction of diversity of life, movement between borders may increase the number of alien plants, animals, and microorganisms arriving in Canada;
- ▶ integrity of atmosphere and its climate - some pollutants may contribute to two significant global environmental problems related to the integrity of Canadian atmosphere (i.e., global warming and the depletion of the ozone layer).

The potential for the GATS to have positive or negative environmental effects will depend on the extent and magnitude of growth stimulated by further liberalization of GATS commitments. There are opportunities for environmentally sustainable growth in most, if not all, of the services sectors addressed by GATS. This is particularly true in light of the knowledge-intensive nature of many of the services sectors, and that technology and innovation may offer significant environmental benefits. (**Appendix B** identifies the possible environmental effects of several sectors addressed by GATS.)

Environmental effects common to all service sectors, caused by the day-to-day activities involved in running an office or other service facility and the travel involved for staff to carry out their duties, will also be considered. These include consumption of energy for heating, lighting, and use of vehicles and equipment (resulting in the release of smog-causing contaminants such as nitrogen oxide, sulphur dioxide, carbon monoxide, particulate matter, and greenhouse gases); and production of waste (including paper, refuse, sanitary waste, and chemical by-products from office equipment). Related effects of operating a service industry could include impacts of constructing buildings and other facilities to house the services (resulting in localized soil erosion, loss of wildlife habitat, and production of construction wastes).

There are various means of environmental protection that can apply to all service sectors and can address the common environmental effects described above. These include using fuel efficient vehicles, conserving paper within the office, recycling of various materials, using reusable coffee cups and other containers, and “green procurement” (a corporate policy to use ecologically sound and environmentally-certified products whenever possible). The environmental aspects of routine activities of the service sectors are often addressed by environmental codes of practice.

A number of federal environmental and environment-related acts might apply in certain cases for any given sector. These acts set out the overall federal environmental framework.³³

Comparatively, service industries less associated with the production of goods may have less of an impact on the environment. This may be particularly true for knowledge-based sectors such as computer and related services. The focus on growth and increasing employment in these sectors is desirable from a sustainable development perspective.

³³ Relevant federal environmental and environment-related laws include the *Canadian Environmental Protection Act 1999*, the *Hazardous Products Act*, the *Arctic Waters Pollution Prevention Act*, and the *Fisheries Act*.

V. RULES (Subsidies, Countervailing and Anti-dumping Measures, and Regional Trade Agreements)

Paragraph 28 of the Doha Ministerial Declaration states:

In the light of experience and of the increasing application of these instruments by Members, we agree to negotiations aimed at clarifying and improving disciplines under the Agreements on Implementation of Article VI of the GATT 1994 and on Subsidies and Countervailing Measures, while preserving the basic concepts, principles and effectiveness of these Agreements and their instruments and objectives, and taking into account the needs of developing and least-developed participants. In the initial phase of the negotiations, participants will indicate the provisions, including disciplines on trade distorting practices, that they seek to clarify and improve in the subsequent phase. In the context of these negotiations, participants shall also aim to clarify and improve WTO disciplines on fisheries subsidies, taking into account the importance of this sector to developing countries. We note that fisheries subsidies are also referred to in paragraph 31.

In paragraph 29, Ministers also agreed to “negotiations aimed at clarifying and improving disciplines and procedures under the existing WTO provisions applying to regional trade agreements. Furthermore, these negotiations are to take into account the developmental aspects of regional trade agreements.”

The Government of Canada is currently consulting with Canadians to identify issues and proposals that will help form the Canadian negotiating position for the WTO trade remedies negotiations. To that effect, a discussion paper entitled “WTO Subsidies and Trade Remedies Negotiations” has been placed on the Finance and DFAIT web sites³⁴. With respect to regional trade agreements (RTAs), Canada is seeking to ensure that in the clarification and improvement of pertinent WTO provisions, the role that these agreements play in development, as well as the need for Canadian businesses to remain competitive will be taken into consideration, while ensuring that our ability to continue to enter into regional and bilateral agreements is not limited.

A. Subsidy Issues

The Agreement on Subsidies and Countervailing Measures (ASCM) sets out rules that discipline the use of subsidies by government. Subsidization occurs when a government provides its domestic producers with financial contributions that give them an advantage in the market place. This support may, in turn, encourage over-capacity and over-production and thus negatively affect other countries’ trade and industries. In addition, the ASCM contains provisions in respect of the unilateral application of countervailing duties (i.e., duties to offset trade-distorting subsidies).

³⁴ <http://www.fin.gc.ca/activty/consult/wtosub-e.html>; <http://www.dfait-maeci.gc.ca/tna-nac/consult-e.asp>

Likely Economic Effects and Environmental Impacts

Generally, subsidy disciplines may be considered a win-win mechanism from both a trade and environmental perspective. Subsidies, insofar as they encourage excess or inefficient production, can lead to inefficient allocation of resources with resulting adverse environmental as well as trade impacts. Restricting government subsidies may, therefore, in some cases, lead to a reduction in inefficient production with resulting environmental benefits in the form of reduced resource inputs and environmental pollution associated with production and distribution. However, the extent of the beneficial impacts of subsidy reduction on the environment will depend on the existence of appropriate environmental policies and regulations.

A number of studies address linkages between government financial transfers and the environment. Such studies, in particular those of the OECD, on linkages between subsidies/support measures and the environment in certain sectors, confirm that reductions in subsidies/support measures may lead to environmental benefits.³⁵

In other cases, government subsidies may be provided for the purpose of implementing environmental objectives. Such beneficial environmental subsidies were recognized in Article 8 of the ASCM, which defined so-called “green light or non-actionable subsidies – meaning subsidies not subject to countervailing duty action or to challenge under the WTO. Specifically, the environmental “green light” referred to government assistance to promote the adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms. Such assistance was required to meet other requirements such as it was limited to 20 per cent of the cost of adaptation and the assistance had to relate directly to the proportion of pollution reduction planned by a firm.

Despite the existence of this provision, it did not become fully operationalized as no WTO Members notified the existence of a program meeting these “green light” requirements and there was no examination or debate on the implementation of this provision in the Subsidies Committee of the WTO. Unfortunately, at the end of 1999, when a decision had to be taken to continue the application of this and other provisions of the ASCM, a consensus could not be reached and these provisions were allowed to expire. This year, in its first submission to the WTO negotiation group on rules negotiations, Canada identified the traffic light framework as an issue in the context of an issue identification phase. Thus far, Canada is the only country to have done so.

With respect to the recently launched WTO negotiations on subsidies, the Doha Declaration recognizes possible linkages between fisheries subsidies and resource sustainability by referring to clarifying and improving WTO disciplines on fisheries subsidies in both the section on subsidies and the section on trade and environment. The concern most commonly expressed regarding fisheries subsidies is that they lead to overcapacity in the fisheries sector and ultimately

³⁵ *OECD Activities Relating to Subsidies and the Environment*. (Paris: OECD, June 2002).

to over-fishing and the depletion of fish stocks.

In this context, enhanced disciplines on trade-distorting subsidies could have positive implications for the conservation of fish stocks. However, as noted in an OECD report entitled “The Impact on Fisheries Resource Sustainability of Government Financial Transfers”, subsidisation is only one aspect of the problem since over-fishing and the depletion of fish stocks cannot be addressed without progress on fisheries management. In other words, the elimination of trade-distorting subsidies will not necessarily translate into a reduction of fish harvesting and thus, over-fishing. To ensure that such progress is made, discussions regarding subsidy disciplines must proceed in tandem with efforts to improve the overall management of the fisheries. The latter is currently being examined at the OECD and the Food and Agriculture Organization (FAO) of the United Nations.

B. Anti-dumping

The Anti-dumping Agreement (ADA)³⁶ allows countries to impose anti-dumping duties to protect their producers from injury caused by imports of dumped goods. Dumping occurs when a foreign exporter sells goods in international markets at an export price lower than the price in their home market or at prices below full cost of production. Countries may impose anti-dumping duties equal to the margin of dumping if it is determined, through an investigation, that the dumped imports are causing injury, or are threatening to cause injury, to domestic producers of competing goods. In this regard, the ADA sets out rules for the conduct of anti-dumping investigations, including initiation of cases, calculation of dumping margins, the application of remedial measures, injury determinations, enforcement, reviews, duration of the measure, and dispute settlement.

Canada has noted the increase in recent years of the use of anti-dumping measures by an increasing number of WTO Members, including Canada. In addition to the traditional users of anti-dumping, many developing countries and economies in transition are beginning to use anti-dumping as traditional trade barriers, such as tariffs, are removed. Many Members believe it is important to clarify and improve the existing disciplines to achieve a greater predictability in the use of such measures. Such clarifications and improvements could limit the inconsistent, uneven and, at times, unwarranted application of anti-dumping measures, while ensuring that such measures remain an effective response to the injurious effects of dumped imports.

Likely Economic Effects and Environmental Impacts

Generally speaking, anti-dumping actions affect industries whose exports are subject to anti-dumping duties, as well as industries in the domestic market that are protected from injurious dumping behaviour. With respect to exporting firms, consistent low-pricing behaviour or sales below the cost of production may be an indication that certain economic inefficiencies exist such

³⁶ In the legal texts, the ADA is referred to as the Agreement on Implementation of Article VI of the GATT 1994.

as global overcapacity, and industry adjustment may be required. To the extent that anti-dumping measures limit subject exports, they could serve to accelerate such adjustment requirements, which could be argued to have positive environmental impacts in terms of reducing inefficient capacity and thus an over-utilisation of resources.

On the other hand, frequent recourse to anti-dumping protection results in sheltering producers and providing a disincentive to making investments in productivity improvements and adapting to changing market circumstances. Both these circumstances suggest that a clarification of the rules to limit the abuse of anti-dumping measures, while maintaining the effectiveness of these measures to address injurious dumping, will strike an appropriate balance with respect to their environmental impact.

C. Regional Trade Agreements

WTO Members are allowed to enter into regional trade agreements (RTAs) in which Members grant to each other more favourable conditions than to other WTO Members. This is allowed even though it departs from the guiding principle of non-discrimination defined in Article I of the GATT, but only if specific conditions are met. These conditions are outlined in Article XXIV of the GATT, specifically paragraphs 4-10.

The Ministerial instruction to negotiate clarification and improvement of disciplines and procedures as they apply to RTAs recognizes the contribution to the expansion of world trade that free trade agreements and customs unions make. Additionally, it recognizes the need to ensure that the increasing number of RTAs signed after the Uruguay Round complement, rather than undermine, multilateral trade liberalization. Such a clarification is also expected to address the controversial interpretations of the wording of WTO rules on RTAs, which have prevented the WTO Committee on Regional Trade Agreements (CRTA) from completing its examination of whether individual RTAs conform with WTO provisions.

Canada is of the view that bilateral and regional initiatives can complement and reinforce multilateral liberalization by allowing faster, deeper, and broader rules and disciplines than those negotiated at the multilateral level, and that from these agreements, countries benefit from new markets and the competitive stimulus for goods and service industries.

Likely Economic Effects and Environmental Impacts

The clarification and improvement of disciplines and procedures *per se* are not seen to result in any trade-induced economic changes; therefore, there will be no direct implications on the environment either. However, negotiations towards RTAs involving Canada, following the clarification and improvement of disciplines and procedures at the WTO, could have economic effects and environmental impacts. These negotiations would be the subject of separate EA processes.

VI. TRADE AND ENVIRONMENT

The Doha Development Agenda represents a significant step for dealing with trade and environment issues at the WTO. For the first time, Ministers agreed to launch negotiations on trade and the environment. The Declaration states in paragraph 31:

With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome, on:

- (i) the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs). The negotiations shall be limited in scope to the applicability of such existing WTO rules as among parties to the MEA in question. The negotiations shall not prejudice the WTO rights of any Member that is not a party to the MEA in question;
- (ii) procedures for regular information exchange between MEA Secretariats and the relevant WTO committees, and the criteria for the granting of observer status;
- (iii) the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services.

(...)

The outcome of [...] the negotiations carried out under paragraph 31(i) and (ii) shall be compatible with the open and non-discriminatory nature of the multilateral trading system, shall not add to or diminish the rights and obligations of Members under existing WTO agreements, in particular the Agreement on the Application of Sanitary and Phytosanitary Measures, nor alter the balance of these rights and obligations, and will take into account the needs of developing and least-developed countries. (Para. 32)

The Committee on Trade and Environment in Special Session has been given the mandate for these negotiations.

Taken together, the various elements on environment and sustainable development in the Doha Declaration represent a significant effort on the part of the WTO Members to take into consideration environmental aspects in the negotiations and in the work of WTO Committees; they also provide Canada and other Members with the necessary scope to help ensure that the outcome of the Round contributes to sustainable development. Ministers reaffirmed their commitment to sustainable development and to the fact that the multilateral trading system and protection of the environment can and must be mutually supportive.

A. Working Toward a Canadian Position

Canada believes that liberalized trade and environmental protection can and should be mutually supportive, and that they are both key components of sustainable development. For Canada, the starting point and overarching objective is sustainable development. Therefore, positions taken on trade and environment questions must be balanced and respond to Canada's economic and

environmental interests. At the multilateral level, Canada has been an active proponent of mutually supportive trade and environment policies.

Consistent with Canada's strong support for multilateral institutions and systems, in particular for international trade and environmental governance, the primary objective for the environment negotiations carried out under paragraphs 31 (i) and (ii) will be to seek a positive and constructive outcome which will be meaningful and beneficial to both the multilateral trade regime and the multilateral environmental system.

The Government of Canada will be consulting with Canadians to identify issues and proposals that will inform the Canadian negotiating position for the WTO negotiations on trade and environment. A discussion paper will be posted on the DFAIT and Environment Canada websites, and Canadians will be invited to provide comments on issues related to the environment negotiations.

B. The WTO and MEA relationship

The WTO encompasses several multilateral trade agreements. There are more than 200 Multilateral Environmental Agreements (MEAs). Of these, approximately 20 regulate trade or contain trade-related provisions. The most significant are: *Convention on International Trade in Endangered Species (CITES)*, 1975; *Montreal Protocol for the Protection of the Ozone Layer*, 1987; *Basel Convention on the Transboundary Movement of Hazardous Wastes*; *Rotterdam Prior Informed Consent Convention*, 1998 (not yet in force); *Biosafety Protocol to the Convention on Biodiversity*, 2000 (not yet in force); *Stockholm Convention on Persistent Organic Pollutants (POPs)*, 2001 (not yet in force). Canada actively participated in the negotiations of these agreements. It is a Party to the first three and a signatory to the *Biosafety Protocol*. It has ratified the *POPs Convention*, and recently acceded to the *Prior Informed Consent Convention*.

The Doha mandate for negotiations on the relationship between WTO rules and specific trade obligations is limited and the possible outcome of the negotiations is uncertain. Canada's main objective will be to seek an outcome that contributes to enhanced coherence in international governance and that is within the context of the Doha mandate. Given the Doha negotiating mandate, the outcome is not expected to result in any amendment of the WTO agreements.

Likely Environmental Impacts

Canada is a party to several of the most significant MEAs with trade-related measures. It is Canadian practice to ensure that, when necessary, the domestic legal framework is in place to allow full compliance with our international environmental obligations before ratification of MEAs. Our other international commitments, such as trade, are also taken into consideration in the manner in which Canada implements our MEA obligations. The outcome of the negotiations on the relationship would not affect these prior commitments and there should be no change in

the Canadian environmental policy. The result of the negotiations, if perceived by Canada as either positive for both MEAs and the multilateral trade system or as negative for either of them, could become an additional factor for consideration in decision-making on ratification for future MEAs.

However, the outcome is unlikely to become the determining factor, as the decision to ratify a particular MEA takes into account a number of issues, including the benefit to the Canadian environment of the international response to global environmental problems. A balanced outcome in the WTO negotiations could have the effect of facilitating aspects of future MEA negotiations, and therefore have a positive environmental impact.

C. Information Exchanges and Criteria for Observers

The Committee on Trade and Environment (CTE) has had regular information exchanges with MEA Secretariats and the cooperation between the WTO, the United Nations Environment Programme (UNEP), and MEA Secretariats over the last few years has been beneficial and has improved Members' understanding and dispelled misconceptions about MEAs. Our objective will be to reinforce and build on existing UNEP-WTO arrangements.

The development of criteria for granting observer status to MEAs will require special effort. The current stalemate in the WTO's General Council on outstanding requests for observer status at the WTO may make it more difficult to pursue the development of specific criteria for MEA observers in the short-term. In keeping with Canada's position on increased transparency at the WTO, its objective will be to develop criteria which will allow MEA Secretariats, which have an interest in the work of a given WTO body, to attend as accredited observers to meetings of that committee.

The outcome of negotiations on information exchanges and the development of criteria for granting observer status to MEAs will be an administrative process. The results will not generate any new economic activity in Canada.

Likely Environmental Impacts

The negotiations on information exchanges with MEA Secretariats and criteria for observer status should be a positive development for international coherence and transparency at the WTO. The free flow of information is critical for informed decision-making for cross-cutting issues such as trade and environment. Mutually consistent policies and rules do not happen automatically, but require consultation and coordination with key interests. The improved communications and cooperation which will result from information exchanges and the granting observer status to MEAs will be an additional element which will help countries ensure that trade policies support sustainable development and do not restrict legitimate actions to protect the environment and, at the same time, make certain that environmental policies do not unnecessarily limit economic opportunities.

D. Environmental Goods and Services

Canada has significant export interests in environmental goods and services. As discussed earlier in this report, Canada is working to reduce barriers to trade in environmental services in the GATS negotiations, and negotiations on environmental goods will take place in the Negotiating Group on Non-Agricultural Market Access. The Committee on Trade and Environment in Special Session monitors progress in both these negotiating areas.

These two sectors are being factored into the environmental assessment of non-agricultural market access and services negotiations.

VII. WINES AND SPIRITS REGISTRY

Paragraph 18 of the Doha Ministerial Declaration states:

With a view to completing the work started in the Council for Trade-Related Aspects of Intellectual Property Rights (Council for TRIPS) on the implementation of Article 23.4, we agree to negotiate the establishment of a multilateral system of notification and registration of geographical indications for wines and spirits by the Fifth Session of the Ministerial Conference. We note that issues related to the extension of the protection of geographical indications provided for in Article 23 to products other than wines and spirits will be addressed in the Council for TRIPS pursuant to paragraph 12 of this Declaration.

Canada's objectives are to conclude negotiations of a multilateral system of notification and registration of geographical indications (GIs) that is voluntary, facilitative, simple, low cost to implement, and limited to wines and spirits so that all WTO Members can implement with little burden if they wish to do so.

A. Wines and Spirits registry issue

The Agreement of Trade-Related Aspects of Intellectual Property Rights (TRIPS) contains obligations relating to all geographical indications, including ones providing special or enhanced protection for wines and spirits. For the purposes of TRIPS, geographical indications are indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation, or other characteristic of the good is essentially attributable to its geographical origin.

TRIPS also contains provisions on the establishment of a multilateral system of notification and registration of geographical indications for wines and spirits. While TRIPS already stated that negotiations should be undertaken on this issue, the Doha Declaration specified that the work must be completed by the Fifth Session of the Ministerial Conference, which will be held in September 2003.

Likely Economic Effects and Environmental Impacts

Article 23.4 of TRIPS states:

In order to facilitate the protection of geographical indications for wines, negotiations shall be undertaken in the Council for TRIPS concerning the establishment of a multilateral system of notification and registration of geographical indications for wines eligible for protection in those Members participating in the system.

As mentioned above, TRIPS contains obligations relating to all geographical indications, including ones providing special or enhanced protection for wines and spirits. The object of negotiations is not these obligations; instead, it is the creation of a multilateral system of notification and registration of geographical indication for wines and spirits.

In Canada's view, the purpose of the notification system is "to facilitate the protection of geographical indications for wines and spirits". The result of the negotiations should be to create a registration system that will help all WTO Members benefit from Article 23 of the TRIPS Agreement. We see it more as an informative tool. The registry will contain information on which Geographical Indications are protected in a given country. It is not intended to create new obligations, create administrative burdens, or affect the rights already contained in TRIPS. As the establishment of the registry is not seen to translate directly into increased production or trade, environmental impacts should very likely be nonexistent.

VIII. DISPUTE SETTLEMENT

The Doha Declaration paragraph 30 states,

We agree to negotiations on improvements and clarifications of the Dispute Settlement Understanding. The negotiations should be based on the work done thus far as well as any additional proposals by members, and aim to agree on improvements and clarifications not later than May 2003, at which time we will take steps to ensure that the results enter into force as soon as possible thereafter.

The Dispute Settlement Understanding (DSU) sets out the rules and procedures for the settlement of disputes between WTO Members. The DSU provides for the management of disputes under the WTO Agreements and contributes to the security and predictability of the multilateral trading system.

The Doha Declaration mandates negotiations with the aim of concluding an agreement by May 2003. The negotiations will be based on the work done in the Dispute Settlement Body's review of the DSU, begun in late 1997, and on any additional proposals by Members.

Members have submitted various proposals to improve and clarify the DSU, including on transparency, compensation, and the suspension of concessions, *amicus*, and permanent

panellists. Canada is currently examining these proposals, consulting with stakeholders, and developing the basis for Canadian negotiating proposals.

Possible Environmental Impacts

The DSU negotiations address the rules and procedures by which disputes are managed and are aimed at increasing the effectiveness of the dispute settlement mechanism. A more effective dispute settlement mechanism will contribute to the overall objectives of the WTO, including the objective of sustainable development, by better governing Members' relations in the field of trade and economics.

IX. CONCLUSION

From this Initial EA, we may conclude the following:

1. Overall, the environmental impact of production changes resulting from trade liberalization in agriculture would likely be minimal. Furthermore, in the near future, government policy (i.e., the implementation of the APF) – in line with citizen expectations – will increasingly ensure that agriculture is produced in an environmentally responsible way. Already, more rigorous farm environmental regulations have been implemented in several provinces. Thus, the potential environmental impacts of the economic changes flowing from the 50 per cent liberalization scenario, if any, are expected to be minimal considering: the limited production changes expected; the federal and provincial environmental legislation currently in place; and, the new environmental policies planned by AAFC for the near future.
2. With respect to non-agricultural market access, the overall economic impact of the new round of negotiations is not expected to have likely and significant environmental impacts. Over the course of the last few trade rounds, Canada has already made accommodations to the demands posed by new liberalization adjustments. While further growth is expected as a result of the new WTO negotiations, the net effect is expected to be incremental. In the chemicals, forestry, fisheries, fertilizers, and non-ferrous metals sectors, environmental measures and practices are already in place to provide for environmentally responsible and sound harvesting or manufacturing.
3. A more detailed analysis may be needed with respect to some services as the GATS negotiations proceed.
4. Negotiations to clarify or improve existing rules may not translate directly into changes in the pattern or volume of trade, but clearer rules are expected to contribute to predictability and stability in the trading system. Further analysis will be required as the issue-identification phase of the negotiations is completed and specific elements of the mandate are further clarified.

5. The mandate for negotiations on the relationship between WTO rules and specific trade obligations in MEAs is limited and the possible outcome of the negotiations will not affect the balance of rights and obligations of Members or affect market access. The outcome of negotiations on procedures for regular information exchanges between MEA Secretariats and the relevant WTO Committees and on the development of criteria for granting observer status to MEA Secretariats will not translate into any new economic activity in Canada.
6. Negotiations to create a multilateral wines and spirits registry will result in an informative tool to facilitate the protection of geographical indications for wines and spirits. Its establishment will not translate directly into increased production or trade.
7. A more effective dispute settlement mechanism will contribute to greater predictability in the trading system, thereby encouraging greater trade that will likely increase economic activity. Activity that leads to greater efficiencies in production and utilization of resources would contribute significantly to sustainable development
8. It should be noted that any positive or negative environmental effects that may result from further trade liberalization will either be enhanced or mitigated by current environmental legislation and measures already in place in Canada, which have promoted environmentally responsible and sustainable production or manufacturing.

The next step of the EA process is the Draft EA, which will focus on the environmental issues raised in the Initial EA that require further analysis.

Meanwhile, as Canada will be proactive in the negotiations and will be developing further proposals in these areas, the Draft EA will include further analysis of agricultural and industrial goods, services, rules and certain aspects of trade and environment.

No further analysis will be required of the multilateral registry for wines and spirits and dispute settlement.

APPENDIX A

Table 1. Examples of Key Agri-Environmental Issues and Indicators for Canada

Issues	Indicators	1996 Baseline and Trend
Water	Risk of water contamination from nitrogen, phosphorous, or other substances.	47% of farmland at low risk of contaminating water by nitrogen; 1981-96 trend is worsening.
Bio-diversity	Share of agricultural habitat for which area is constant, improving or decreasing	Varies by ecozone: 3 of 7 ecozones show positive trends, 2 show negative trends, 2 are constant (1981 - 96).
Air	Net emissions of agricultural greenhouse gases	86 million tonnes emitted in 1996; 1981-96 trend is toward increasing emissions.
	Agricultural use of methyl bromide	148 tonnes used in 2000; 1997-2001 trend is for decreasing use
Soil	Risk of degradation of agricultural soils from water, wind, tillage, compaction, salinisation, or other sources.	86% of cropland at tolerable risk of water erosion; 1981-96 - trend is improving.
	Level of soil organic matter / carbon	Soil net emission of 1.8 million tonnes of carbon in 1996; 1981-96 trend is towards reduced emissions.

Table 2. Potential Environmental Impact of the 50 per cent Scenario

Expected Economic Impact	Potential Change in: - Land Use - Waste Production - Fertilizer, Pesticide, Energy Use	Potential Environmental Impact - Potential Outcome - Significance / Risks	Proposed /Possible Mitigation Measures (Difficult to ensure all of these measures will be implemented effectively)
<p>Slight increase expected in overall crop production and area</p> <p><u>Specific Crops:</u></p> <p>Wheat: Production increase</p> <p>Coarse Grains: Production increase</p> <p>Oilseeds: No production change</p> <p>Other Crops: No production change</p>	<p>Increases in cropland likely to occur in the Prairie provinces, which account for 81.5% of Canada's total agricultural land area;</p> <p>May increase use of marginal lands or conversion of pasture to annual crops;</p> <p>May increase continuous cropping and decrease summerfallow;</p> <p>May increase fuel/energy use;</p> <p>May increase use of chemical fertilizers and pesticides;</p>	<p>Soil: This increase is unlikely to raise the risk of soil degradation. Agri-environmental indicators reveal a small portion of Prairie cropland was at high risk of soil degradation in 1996: - about 1% of Prairie cropland is at high or severe risk of water erosion; - about 6% of Prairie cropland is at high or severe risk of wind erosion; - 11% of Prairie cropland is at high risk of salinisation; Some portions of Prairie cropland face more than one of these risks¹</p>	<p>Promoting further adoption of best farming practices, particularly in areas identified as being at high risk of soil degradation.</p> <p>Promoting sustainable land use, e.g. through the Greencover Initiative (Permanent Cover and Shelterbelts).</p> <p>Preparing and Implementing Environmental Farm Plans</p> <p>Regulating nutrient /fertilizer management (provinces)</p> <p>Conservation through land stewardship</p>
		<p>Water: Slightly higher risk of water contamination from more fertilizer and pesticide use in crop areas.</p> <p>Greenhouse Gas (GHG): - Increased input use may contribute to more GHG emissions.</p>	<p>Promoting further adoption of best farming practices, particularly in areas identified for high risk of soil degradation.</p> <p>Greenhouse Gas Mitigation Program for Canadian Agriculture</p>

Expected Economic Impact	Potential Change in: - Land Use - Waste Production - Fertilizer, Pesticide, Energy Use	Potential Environmental Impact - Potential Outcome - Significance / Risks	Proposed /Possible Mitigation Measures (Difficult to ensure all of these measures will be implemented effectively)
		<p>- Less summerfallow would provide more crop cover, and hence more carbon sinks.</p> <p>Wildlife and biodiversity: - Agricultural land in the Prairies is already more extensive than in any other Canadian ecozone. Thus a slight increase in crop land is not expected to impact significantly on habitats.</p>	<p>Preparing and Implementing Environmental Farm Plans</p> <p>Regulating nutrient / fertilizer management (provincial)</p> <p>Conservation through land stewardship</p>
<p>Small increase in livestock production and increased trade (increased market access for livestock)</p> <p><u>Specific livestock:</u></p> <p>Pork: Production increase Beef: Production increase Dairy: (Maintain supply-management) No production change Poultry: (Maintain supply-management) No production change Other Livestock: No production change</p>	<p>Expanded livestock production, specifically red meat production, is more likely in sparsely populated areas (e.g. Prairies);</p> <p>Increased manure production; Note: sufficient agricultural land exists upon which it can be spread as a crop nutrient;</p> <p>Methane emissions may rise as ruminant livestock numbers rise;</p> <p>Increased water consumption by rising livestock numbers;</p> <p>Increased transport of livestock etc; hence increased energy use;</p>	<p>Water Quality: Slightly higher risk of water contamination from potential manure run-off.</p> <p>Greenhouse Gas (GHG): Increased livestock (especially cattle) production may contribute to more GHG emissions.</p> <hr/> <p>Environmental risks will depend on the concentration and intensity of animal production and on the further adoption of best farming practices.</p> <p>Increase in nitrogen from livestock waste offset by nitrogen uptake by agricultural crops.</p>	<p>Promoting further adoption of best farming practices, particularly for: intensive livestock operations; livestock operations in river basins; and, areas where livestock production is more concentrated.</p> <p>Preparing and implementing Environmental Farm Plans</p> <p>Regulating livestock access to water sources (provincial)</p> <p>Regulating distance of manure storage from water sources (provincial)</p> <p>Regulating nutrient / fertilizer management (provincial)</p>

APPENDIX B

Potential (negative and positive) environmental impacts of selected service industries

Service sector	Potential impacts
Retail sales and distribution Food, consumer goods	Emissions from transportation Impacts from ultimate disposal of goods purchased, including the potential impacts associated with waste and landfill development Potential to influence consumer behaviour – negative impacts from increased consumerism, positive impacts from meeting and contributing to demand for sustainably-produced goods
Hotels, restaurants and food service	Food and packaging waste Impacts from energy and water use
Consulting	Indirect impacts through influence on client behaviour
Consulting engineering	Technology choice with subsequent impacts from construction and operation
Tourism	Direct or indirect impacts on local environment from construction and operation of facilities Use and disposal of hazardous products for cleaning and maintenance Impacts from water, energy and resource use Indirect impacts through influence on client behaviour
Environmental services	Soil, water and air pollution from waste disposal sites Energy use for waste and water treatment Potential positive impacts from increased recycling and improved management of wastes
Financial services	Indirect impacts through influence on client behaviour, such as financial services for remediation of contaminated sites
Other - Professional services (i.e. accounting), computer services, communication services	Use and disposal of hazardous products Impacts from energy and resource use Indirect impacts through influence on client behaviour Waste disposal impacts

³⁶ Figures 6-1, 7-2, and 11-1 of the *Environmental Sustainability of Canadian Agriculture, Report of the Agri-Environmental Indicator Project*, (Ottawa: AAFC, 2000).