

**SERVICES TRADE LIBERALIZATION:
ASSESSING THE ENVIRONMENTAL EFFECTS**

Commission on Environmental Cooperation's

Symposium on

Understanding the Linkages between Trade and Environment

Presentation by Dale Andrew(*), OECD Trade Directorate

11-12 October 2000

Washington, D.C.

OECD, 2, rue André Pascal, 75775 Paris Cedex 16

tel: (33-1)45 24 89 22; fax: (33-1) 45 24 15 39; email: dale.andrew@oecd.org

(* Prepared together with Silvia Zucchini and Edward Falloon of the OECD Trade Directorate

Abstract

Although services are not precisely defined and the relevant economic data are rather poor, the WTO Secretariat estimates that international trade in services now constitutes some one-third of total international trade. Barriers to these international flows involve a host of national regulations, licensing requirements, approval procedures, ownership conditions, etc. With the signing of the Marrakesh Agreement establishing the WTO in 1994, the General Agreement on Trade in Services (GATS) established a multilateral framework under which Members make horizontal and sector-specific commitments to free up these barriers. Using a somewhat different approach, the NAFTA also set up a system of commitments for liberalizing services trade amongst the three North American members. Whilst generally recognised as a modest beginning, GATS 2000 in Geneva is now addressing a whole host of general rules and sector-specific issues to further liberalize these streams of international trade.

Only relatively recently has analytical work begun addressing the environmental impacts of services at the national level. Services and services delivery have many characteristics which distinguish them from extractive and manufacturing industries. Such differences mean that new approaches are useful in assessing their environmental impacts -- both the positive as well as the negative effects. Impacts vary greatly according to services sector but many services activities lead to air, water and soil pollution and have implications for natural resource inputs as well as the production and disposal of wastes. Given the relationship between goods and services, it is also necessary to trace the goods used in the supply and consumption of services.

Despite the significance and growth of services trade, little attention has been paid to this sector in past environmental reviews of trade liberalization agreements. For example, despite the wide-ranging provisions in NAFTA on services trade and the comprehensive nature of the Final Analytic Framework for Assessing the Environmental Effects of NAFTA, the potential environmental effects of North American services trade were not addressed explicitly.

This paper reports on work in progress in the OECD Secretariat which has been mandated by the OECD Joint Working Party on Trade and Environment to develop its 1994 Methodologies -- sometimes considered the "grandfather" of environmental review methodologies, but which, like others, was essentially designed to address trade in goods. The Secretariat's views on such a methodology to address environmental effects of services trade liberalization (focussing on the GATS) include the need to combine past approaches. Due to the relative complexity of the GATS compared to other trade liberalization frameworks and the limited resources for such environmental reviews, it will be essential to be practical and selective. Thus a first approach might: a) build scenarios on possible degrees of liberalization under GATS 2000; b) proceed sector-by-sector due to the varying environmental effects of individual services sectors; c) stress screening of sectors according to the significance of the positive and negative environmental effects; and d) include regulatory effects assessment including attention to provisions on domestic regulations.

Table of contents

I. Trade in services.....	5
A. Definition and significance of services trade	5
B. Barriers to services trade.....	6
C. Liberalizing services trade	10
The WTO's General Agreement on Trade in Services	10
The NAFTA approach to liberalizing services trade.....	18
II. Environmental effects of services and services delivery.....	19
A. Characteristics of services & services delivery	19
B. Identifying the services/environment nexus	20
Large impact per facility and cumulative impacts from non-point sources	21
Direct and indirect effects.....	22
“Upstream” and “downstream” environmental impacts	24
C. Goods used and supplied with services	27
III. Assessing environmental effects of services trade liberalization.....	27
A. Methodologies used in past reviews.....	27
OECD 1994 Methodologies	27
Public concerns	30
Trade-environment hypotheses.....	30
Linking economic data and environmental outcomes	31
Sector approach	31
Environmental media	32
Final Analytic Framework for Assessing the Environmental Effects of NAFTA.....	32
B. Lessons from past reviews for services trade	34
Linking economic changes and environmental indicators	34
Addressing public concerns	35
Sector by sector.....	36
C. Techniques in methodologies currently under development	38
Screening.....	38
Scenarios	40
IV. Conclusion: towards an assessment of possible environmental effects of GATS 2000	41
ANNEX.....	43
Transborder Investment Flows.....	43

BIBLIOGRAPHY	46
--------------------	----

Tables

Table 1. Restrictions in hotels and restaurants based on the schedules of commitments.....	15
Table 2. Restrictions in <i>other</i> services related to travel and tourism services based on the schedules of commitments.....	16
Table 3. Potential (negative and positive) environmental impacts of service industries	23

Boxes

Box 1. Services sectors used in GATS.....	5
Box 2. Examples of measures affecting trade in services	7
Box 3. Characteristics of services & services delivery.....	19

SERVICES TRADE LIBERALIZATION: ASSESSING THE ENVIRONMENTAL EFFECTS

I. Trade in services

A. Definition and significance of services trade

The services sector includes a broad and diverse range of industries such as communications, transport, retailing, finance and tourism. In general they produce non-material products, although their business often includes the supply and use of goods. UNEP notes in their publication *Industry and Environment*,¹ that there is no single international standard for defining the service industries. Indeed there is no precise definition of services in the WTO's General Agreement on Trade in Services (GATS). Instead Uruguay Round negotiators devised an informal classification scheme based on the UN Central Product Classification scheme. This Services Sectoral Classification List (MTN.GNS/W/120) sets out 12 service sectors and 155 sub-sectors. While this list is an informal basis for defining services, and is not binding, most countries have scheduled their commitments using this classification scheme. The general purpose of the list is to facilitate, not mandate, standardized classification of services in members' schedules of commitments. The 12 sectors appear below in Box 1:

Box 1. Services sectors used in GATS	
<i>Business Services</i>	<i>Communications Services</i>
<i>Construction and Related Engineering Services</i>	<i>Distribution Services</i>
<i>Educational Services</i>	<i>Environmental Services</i>
<i>Financial Services</i>	<i>Tourism and Related Travel Services</i>
<i>Health Related and Social Services</i>	<i>Transport Services</i>
<i>Recreational, Cultural and Sporting Services</i>	<i>Other Services not included elsewhere</i>

¹ UNEP: *Industry and Environment*, July- September 1998.

The supply of services tends to require the simultaneous presence of the producer and consumer. Nonetheless, the technological improvements in cross-border communication have increased the viability of other means of supply. The GATS defines trade in services in terms of the following four modes of supply:

- Mode 1 - cross-border supply (e.g., cross-border legal advice by electronic means),
- Mode 2 - consumption abroad (e.g., international tourism),
- Mode 3 - commercial presence (e.g., a branch office operating in a country outside of country of ownership),
- Mode 4 - the movement of natural persons (e.g., information technology professionals working abroad).

In 1980 services made up 53% of world GDP and by 1995 this had increased to 63%. In the United States and Hong Kong, China the service sector constitutes around 80% of GDP, and in most developed countries the figure typically lies between 60% and 70%, and even in lower income developing countries services can make up more than one third of the economy. In 1997 the value of world services trade has been estimated at some US\$2.2trillion, or over a third of total world trade (Karsenty, 2000). The service sector has been the fastest growing area of world trade. Between 1990 and 1998 there has been 7% per annum growth in the value of world trade in commercial services.² Except in Asia and Africa in 1998 during the financial crises, there has been worldwide growth throughout this period. In 1998 the EU's rate of growth for services exports was twice that of exports of goods.

B. Barriers to services trade

Assessing the barriers to services trade is considered significantly more difficult than doing the same for trade in goods (Sauvé and Stern, 2000). Barriers to services trade predominantly take the form of non-tariff barriers (NTBs), the restrictive effects of which can be difficult to determine, especially given the paucity of data on services trade. Regulations, approval procedures, requirements of levels of commercial presence, and restrictions on capital and labor movement are

² WTO: *Annual Report 1999 – International Trade Statistics*, Table 1.4.

all examples of barriers to services trade. Restrictions to trade in services have been described as a “policy that impedes producers and consumers interacting through any of (the modes of supply)” (Warren and Findlay, 2000). Therefore discretionary entry and visa requirements for workers in the computer software industry could be a barrier to services trade as it can potentially impede interaction between the supplier (software worker) and the consumer (the company that wants to hire that worker). Equally a restriction on the form a foreign company can take may be an impediment to that company’s interaction between it and its consumers (mode 3). Finally the requirement of a telecommunications firm to use the monopoly connection provider may restrict the number of potential foreign consumers for that company, thus restricting its interaction with its consumers (mode 1). A number of other examples of measures restricting trade in services appear in Box 2.

Box 2. Examples of measures affecting trade in services

Cross-border supply (GATS mode 1)

- Requirement to obtain authorization, license or permit in order to market and supply services.
- Requirement to use monopoly or otherwise specified network access or connection provider (including for Internet or other electronic networks); access limited by specific government regulation.
- Cross-border transfer of capital, payments and/or use of credit cards for such transactions not permitted or subject to authorization.
- Establishment of full commercial presence required; may be granted only to specified “brand-name” entities; or required in the form of local partnership.

Consumption/purchase abroad (GATS mode 2)

- Permitted only through firms with commercial presence in-country or specified “brand-name” entities or a designated local partner.
- Requirement to use a monopoly or otherwise specified network access or connection provider, including for Internet or other electronic networks.
- Transfer of capital, payments and/or use of credit cards for such transactions not permitted or subject to authorization

Physical establishment of commercial presence (GATS mode 3)

Investment approval

- Approval based on policy guidelines and overall national interest considerations but without economic needs test or local participation requirements.
- Approval of foreign investment based on economic needs test or “net national benefit”.
- Automatic approval except for specific authorization or concession requirement for foreign investment in public entities or public works, newly privatized companies or government-contracted services (can be limited to nationals), or above a certain value threshold.
- Case-by-case authorization at political level with ceilings on permitted foreign investment varying by sector or within sectors; including without clear, consistently applied criteria for approval.
- Approval required for full or majority foreign ownership, or full or majority foreign ownership not permitted, joint venture with local partner mandatory.
- Establishment of new businesses prohibited or restricted; only minority shares in existing businesses permitted. Scope of foreign business limited to specified activities, narrower than those permitted local firms.

Legal form of foreign company

- Only one legal form permitted (e.g. joint-stock company, private limited liability corporation, joint venture); incorporation required with foreign equity participation ceiling and mandatory local partnership; only sole proprietorships or partnerships permitted.
- Direct establishment of branches of foreign companies not permitted; branching permitted subject to quotas on number and/or geographic location of branches.
- Only representative office permitted (i.e. promotional work and research for head office).

Licensing/authorization for provision

- Licensing and authorization granted only to companies permitted to establish, with licenses limited numerically or subject to significant limitations (e.g., on foreign equity, local staff).

Nationality/residency requirements

- Requirement that CEO, or all or more than 50% of directors, be nationals of host country.
- Requirement that local agents of foreign companies be permanent residents.

- Requirement that providers established in one part of a country have a minimum number of resident providers or agents for provision in another part of a country.
- Prior residency required to obtain operating license; residency not permitted without license.

Temporary entry/stay of service providers (GATS mode 4)

- Only certain types of personnel permitted, with time-limits and/or conditions not specified, such that these may then be arbitrarily or discriminatorily applied.
- Requirement to undertake further training or pass local exam in the host country to be recognized as professional or specialist; criteria for local recognition of experience and/or qualifications for professionals and specialists vague, non-transparently or arbitrarily applied, or discriminatory.
- Permission for intra-corporate transferees and specialists subject to labor market testing/economic needs test; non-availability of local staff decided by host authorities without input from the foreign company concerned; requirement that a set proportion of foreign staff have local understudies for training/ transfer of skills.
- Permission for intra-corporate transferees subject to performance requirements (e.g. employment creation, transfer of technology, ongoing level of investment).
- Requirement that specified, significant proportion (e.g. >70%) of staff of foreign established company be nationals of host country, regardless of experience/qualifications; numerical limitations on foreign nationals in senior positions.
- Provision of services by self-employed persons not permitted.

Restrictions on provision, transfer and processing of information/data (all modes)

- Prohibition or restrictions on transfer of specified types of data (personal, financial institutional, commercial) without specifying the policy reasons for the prohibition or permitting transfer subject to adherence to reasonable standards.
- Requirement that provision and transfer of all or specified types of information take place on designated or monopoly networks.

Source: Based on OECD Secretariat's Indicative list of barriers to trade in environmental services (Annex 5, COM/TD/ENV(00)86/FINAL).

C. Liberalizing services trade

The WTO's General Agreement on Trade in Services

A major breakthrough in the multilateral trading system occurred at the end of the Uruguay Round with the establishment of a framework for services trade liberalization, known as the General Agreement on Trade in Services (GATS). The GATS is -- not unlike its counterpart for goods, the GATT, when established at the end of the 1940s -- a beginning, setting out general, systemic rules as well as schedules of commitments for freeing up trade in services. It is generally acknowledged that significant liberalization was not immediately implemented under the GATS agreement.³ Many of the positive commitments did not extend liberalization beyond the actual state of affairs, often simply reflecting the situation at the time of scheduling. Nonetheless an integral part of the Agreement were undertakings to proceed regularly to liberalize, both through the development of rules in areas not covered, such as subsidies and government procurement, and to address new sectors or broaden commitments in existing sectoral undertakings. Since the end of the Uruguay Round, for example, negotiations have taken place in basic telecommunications, financial services and maritime transport (although negotiations in the latter sector failed twice). And GATS 2000, currently underway in Geneva, is an ambitious new series of talks which will address a whole range of services trade topics.

Whatever the assessment of progress to date under this legal instrument for trade liberalization, it is nonetheless the GATS which clearly provides the multilateral framework for services trade. The current hum of services talks in Geneva under GATS 2000 shows the context to be analyzed when considering the environmental effects of new multilateral services trade liberalization.

The GATS is complex. Characterization below of the Agreement will purposely be schematic to show a series of axes along which liberalization is likely to be structured. Then a series of (further) difficulties is set out which confront analysts wishing to assess the economic effects of the current liberalization efforts, before proceeding to assess the environmental effects.

³ <http://www1.worldbank.org/wbiiep/trade/services.html#GATS>

First of all, horizontal commitments may be entered, that is those restrictions applying across the board to all sectors, but which are mode-specific. Thus, a country may screen all FDI according to certain criteria before it is allowed and enters such a condition in its Schedule of Commitments under mode 3, commercial presence. In liberalizing, this country may decide to limit the number of conditions or drop altogether its previous requirement of screening.

Secondly, liberalization concerns sector-specific commitments

- By sector
- For each of the four modes of delivery
- Concerning market access and national treatment limitations

By sector: As discussed above in section I, there are twelve main sectors in GATS and some 150 sub-sectors. Firms wanting to expand their services export opportunities and countries wishing to promote competition and efficiency in their imports of infrastructure services find certain sectors either a) narrowly defined, b) dispersed amongst a host of different sub-sectors or c) practically absent from the GATS classification system. Examples include, respectively, a) environmental services; b) tourism and travel-related services; and c) energy services. Current talks in Geneva have been focussing on classification problems. This work has included examination of classification issues, including proposals for expanded classifications of environmental services; new classifications for energy services; and using a cluster approach to group commercially related sectors classified separately.

For each of the four modes of delivery: Commitments are then made individually and separately for each of the four modes of supplying services. Thus, liberalized commitments on commercial presence (mode 3) may be more commercially significant than those to allow a greater number of persons to enter the territory (mode 4). A completely free of restriction commitment is scheduled as "none". "Unbound" means that no commitments have been made. (In addition, a GATS Member may consider that a particular mode of delivery is not technically feasible and therefore schedules this mode as "unbound".) In many cases, particularly concerning conditions for modes 3 and 4, horizontal restrictions may apply, that is those which are not sector-specific but apply

across the board (e.g. foreign equity limits (mode 3) or nationality-based immigration regulations (mode 4).)

Concerning market access limitations: When making commitments in a given sector and for each of the four modes, commitments are made by granting market access (MA) and national treatment (NT). Market access commitments involve reducing the limitations in one of six areas: i) increasing the number of services suppliers; ii) increasing the total value of allowed transactions; iii) increasing the total number of service operations or the total quantity of service output; iv) allowing a larger number of employees in a particular sector; v) liberalizing restrictions on the legal form of the service supplier; and vi) increasing percentage limitations on the participation of foreign capital or total value of foreign investment.

And national treatment limitations: In principle, GATS Members are to grant foreign services and service suppliers treatment no less favorable than that extended to the like services and service suppliers of its own domestic services industry. A member's GATS obligations however depend significantly on what it has specifically undertaken. Members are entitled to make the extension of NT in any particular sector subject to conditions and qualifications set out in its schedule. GATS Members are also only obliged to extend NT to services and service suppliers in those sectors where they have made specific commitments.

To understand the GATS approach to liberalization, it is helpful to look at a schedule of commitments, as well as those for a particular sector. (It should be recalled again that Members are not required to make commitments under every sector.) The imaginary schedule below of specific commitments for “Arcadia” prepared by the WTO Secretariat shows the interaction of both horizontal commitments and sector-specific commitments.

Tourism is a services sector for which interest for further liberalization is high in Geneva, particularly on the part of developing countries, both for deeper and broader commitments. This sector, as set out in the informal sectoral classification list, includes 4 sub-sectors. The following tables give an overview of commitments for two of the tourism sub-sectors: hotels and restaurants, and "other" tourism services. As can be seen in Tables 1 and 2, the situation is radically different concerning the current status. Table 1 shows that the tourism sub-sector covering hotels and restaurants is quite liberal (“none”) for modes 2 and 3 for many countries. On

the other hand, the gray shading in Table 2 indicates that no commitments were entered by most countries regarding “other” tourism services.

ARCADIA - SCHEDULE OF SPECIFIC COMMITMENTS

Modes of supply:

(1) Cross-border supply (2) Consumption supply (3) Commercial presence (4) Presence of natural persons

Sector or sub-sector	Limitations on market access	Limitations on national treatment	Additional commitments
I. HORIZONTAL COMMITMENTS			
ALL SECTORS INCLUDED IN THIS SCHEDULE	(3) Notification and examination in accordance with Arcadia's Law on Foreign Investment 1993. (4) Unbound, other than for (a) temporary presence, as intra-corporate transferees, of essential senior executives and specialists and (b) presence for up to 90 days or representatives of a service provider to negotiate sale of services.	(3) Authorization is required for acquisition of land by foreigners.	
II. SECTOR-SPECIFIC COMMITMENTS			
4. DISTRIBUTION SERVICES C. Retailing services (CPC 631,632)	(1) Unbound (except for mail order: none). (2) None. (3) Economic needs test for supermarkets over 1,500 sq. meters. (4) Unbound, except as indicated in horizontal section.	(1) Unbound (except for mail order: none). (2) None. (3) Certain tax incentives are available only to companies controlled by Arcadian nationals. (4) Unbound.	

Source: WTO Secretariat.

Table 1. Restrictions in hotels and restaurants based on the schedules of commitments

	Mode 1		Mode 2		Mode 3		Mode 4	
	MA	NT	MA	NT	MA	NT	MA	NT
Argentina	None	None	None	None	None	None	UB	UB
Australia	UB*	UB*	None	None	None	None	UB	UB
Austria	UB*	UB*	None	None	None	None	UB	UB
Brazil	UB	UB	UB	UB	None	X	UB	UB
Canada	None	None	None	None	L/N/R	N/R/X	UB/N/R	UB
Chile	UB*	UB*	X	X	None	None	UB	UB
Czech Rep.	UB*	UB*	None	None	None	None	UB	UB
EC	UB*	UB*	None	None	None/A/ ETN	None	UB/N	UB
Egypt	UB*	UB*	None	None	L/ENT/ Eq/X	X	None	None
Finland	None	None	None	None	None	None	UB	None
Hong Kong, China	UB	UB	None	UB	None	None	UB	UB
Hungary	None	None	None	None	None	None	UB	UB
Iceland	None	None	None	None	None	L/R	None	L/R
India	UB*	UB*	UB	UB	Eq	None	UB	UB
Indonesia	None	None	None	None	None/Eq	X	UB	UB
Japan	UB*	UB*	None	None	None	X	UB	UB
Korea	UB-	UB*	None	None	None	None	UB	UB
Malaysia	UB*	UB*	None	None	Eq/JV	None	UB	UB
Mexico	UB*/None	UB*/None	None	None	L,P	None	UB	UB
Morocco	None/UB	None/UB	None	None	None	None	UB	UB
New Zealand	None	None	None	None	None	None	UB	UB
Norway	None	None	None	None	None	None	UB	UB
Philippines	UB*	UB*	None	None	Eq/X	None	X	None
Poland	UB*	UB*	None	None	None	None	UB	None
Singapore.	UB*/None	None	None	None	None	None	UB	UB
Slovak Republic	UB*	UB*	None	None	None	None	UB	UB
South Africa	UB	None	None	None	None	None	UB	UB
Sweden	UB*	None	None	None	None	None	UB	UB
Switzerland	UB*	UB*	None	None	L/ENT	R/L/ Exam	UB/CP	UB/C P/L/N
Thailand	UB	UB	None	None	None/X	None/E q	UB	None
Turkey	UB*	None	None	None	None	None	P/X	None
USA	None	None	None	None	None	None	UB	UB

Note: A: Authorization; CP: Commercial Presence; Eq: Equity Limitations; Establish: Establishment required; ETN: Economic Needs Tests; Exam: Examination required; L: License; Local incorp.: Local incorporation required; N: Nationality Requirement; None: No restriction; P: Permit; R: Residency Requirement; UB: Unbound; UB*: Unbound due to the lack of feasibility; X: Other limitations

Source: "Assessing Barriers to Trade in Services: Tourism Services", OECD document TD/TC/WP(2000)10/Final.

Table 2. Restrictions in “other services” related to travel and tourism services based on the schedules of commitments

	Mode 1		Mode 2		Mode 3		Mode 4	
	MA	NT	MA	NT	MA	NT	MA	NT
Argentina	None	None	None	None	None	None	UB	UB
Australia								
Austria								
Brazil								
Canada								
Chile								
Czech Rep.								
EC								
Egypt	None/ UB	None/ UB	None	None	None/ ENT	None/ X	None/ UB	None/ UB
Finland								
Hong Kong, China								
Hungary								
Iceland								
India								
Indonesia	None	None	None	None	Eq	X	UB	UB
Japan								
Korea								
Malaysia								
Mexico								
Morocco	UB	UB	None	None	None	None	UB	UB
New Zealand								
Norway								
Philippines								
Poland								
Singapore.								
Slovak Republic								
South Africa								
Sweden								
Switzerland								
Thailand	UB	UB	None	None	X	Eq	UB	None
Turkey								
USA	None	None	None	None	None	None	UB	None

Note: A: Authorization; CP: Commercial Presence; Eq: Equity Limitations; Establish: Establishment required; ETN: Economic Needs Tests; Exam: Examination required; L: License; Local incorp.: Local incorporation required; N: Nationality Requirement; None: No restriction; P: Permit; R: Residency Requirement; UB: Unbound; UB*: Unbound due to the lack of feasibility; X: Other limitations
Grey shading indicates no commitments.

Source: “Assessing Barriers to Trade in Services: Tourism Services”, OECD document TD/TC/WP(2000)10/Final.

Despite general guidelines on scheduling of commitments to liberalize individual sectors, a number of qualifications and provisos apply:

With respect to the precise *scope of the sector*:

- As already noted there is also no consistent system of references to service sectors used in scheduling services commitments (compared, say, to the role played by the Harmonized System in tariffs for goods) although many WTO members used the definitions contained in the Classification List. While some members referred to the UN Central Product Classification ("Provisional CPC", referenced in W/120), others did not.
- The "bottom up", or positive listing approach to GATS scheduling means that countries only schedule sectors in which they are making commitments, and thus in the schedules for many countries, *certain sectors are omitted* altogether. It is not possible to know what measures may exist in these sectors, or indeed for any new services not covered at the time of the negotiations.

With respect to the scheduling of *market access and national treatment limitations*:

- Measures that are inconsistent with both Market Access and National Treatment need only be scheduled under the Market Access column (GATS Article XX.2). It is thus not always possible to tell from looking at a schedule whether a particular measure is a discriminatory or non-discriminatory limitation on market access. This scheduling convention notwithstanding, some members have scheduled measures under both the Market Access and National Treatment columns.

With respect to the potential importance of *domestic regulations*:

- *Schedules do not include all measures relating to the sector.* The GATS only requires measures restricting market access and national treatment (see GATS Articles XVI and XVII respectively) to be scheduled. While some members have chosen to include other measures, including those that may fall under Article VI (*domestic regulations*), others have not.

- As many services barriers take the form of domestic regulations, it is not easy to quantify their effects. Similarly, given the acknowledged right of governments to regulate and the various objectives which they may be pursuing, it is not always easy to reach agreement on the degree to which a particular measure affecting trade in services is an "unnecessary" barrier to trade.

With respect to the *overall picture from the GATS schedules of restrictiveness*:

- Members may make no commitments with regard to an aspect of a particular sector (e.g. national treatment with regard to architecture services) and will thus schedule the sector as "unbound". While this leaves the country in question with total flexibility to impose new measures, it does not necessarily indicate that the existing regime is restrictive. Thus *schedules may not give an accurate snapshot of prevailing restrictiveness*.
- Schedules refer to guaranteed minimum treatment, but do not prevent better, or more liberal treatment. Considerable unilateral liberalization has been undertaken since the Uruguay Round and *1994 GATS schedules may therefore not reflect the current situation in the market*.

The NAFTA approach to liberalizing services trade

The North American Free Trade Agreement, completed in 1992, can be considered a "GATS-plus" agreement since it is the most comprehensive package of services trade liberalization achieved in an international negotiation (Stephenson, 1999). The principles governing liberalization of services trade in NAFTA are MFN, national treatment and transparency. These principles are guaranteed to foreign service providers of NAFTA parties through freedom for cross-border trade and establishment of trade. Moreover, the agreement presents a more coherent treatment of investment in relation to services, the inclusion of more liberalized rules on government procurement, sector-specific rules on trade liberalization for financial services, telecommunications and transportation services.

Like the GATS, NAFTA is universal in coverage. However, unlike the GATS, NAFTA takes a negative list or "top-down" approach to the liberalization of trade in services and investment. This is to say that exceptions and reservations for all sectors are to be specified in attached lists. All parties have to list all-non conforming measures within prescribed time limits. Failure to list

non-conforming measures within these time spans entails their automatic liberalization. One of the consequences of this NAFTA's negative list approach is that a set of annexes concerning reservations and exceptions to the general disciplines must be produced since non-conforming measures are not allowed. A major benefit is a higher level of transparency for both users and for government negotiators. The negative list approach also represents a useful tool for domestic regulatory reform since it helps national bureaucrats to focus on the effective need for trade-restrictive regulations that their country has in place.

But NAFTA, as much as GATS, does not manage to guarantee the full liberalization of trade in services. In contrast to GATS, this "negative list" approach provides extensive and more transparent information on existing barriers to trade, the so-called non-conforming measures, increasing the stability of rules and provisions for services activities. In general, however it can be remarked that the distinction between these two "positive and negative list" approaches blurs if the length of the list of exemptions taken out by members of a NAFTA-type agreement coincides with the number of sectors not included in a GATS-type agreement. Furthermore, there is no commitment under NAFTA, as there is in GATS, to successive rounds aimed at achieving a progressively higher level of liberalization.

II. Environmental effects of services and services delivery

A. Characteristics of services & services delivery

Box 3. Some characteristics of services & services delivery

(tending to differentiate them from goods)

- ◆ "intangibles" or "invisibles" and thus inability to store them
- ◆ simultaneous physical presence of producer and consumer and therefore necessity for close proximity of supplier
- ◆ diffuse sources and often small producers, (although with some notable exceptions such as retail chains, telecommunications companies)
- ◆ general lack of environmental expertise in firms, unlike in many manufacturing companies
- ◆ use of goods in the delivery of services, but no actual production of the goods
- ◆ lower capitalization in general (again, with exceptions).
- ◆ personnel-based production

To understand the environmental effects of services, it is helpful to identify what differentiates the production and consumption of services from the production and consumption of goods. Goods are tangible, visible, and before or after supply can be stored. In general services are invisible or intangible, cannot be stored, require the close proximity of the supplier to the consumer⁴, and have simultaneous production and consumption. Nonetheless there are exceptions to some of these definitions. Blueprints or information on computer disks can be stored, and the supply of medical advice on the net does not requiring either proximity or simultaneity. In addition the description of services as invisibles and intangibles, which aptly describes the service received, does not acknowledge the accompanying use of goods to supply that “invisible” that are an important aspect to assessing the environmental impact of services.

There are a number of characteristics of service producers that are important. The suppliers of services are often small producers such as restaurants, retail outlets, and accommodation providers. Exceptions to this include large companies in retail, finance and the food industry (yet with many small outlets). Because of the large number of small producers, there can be also a lack of capitalization and long term planning in the service sector. In addition the service sector often lacks the environmental expertise that may be found in manufacturing companies engineering or science divisions. The means of production in services is often the employees themselves, and therefore a firm’s environmental performance hinges on employees’ awareness of the environmental effects of their actions. (The environmental awareness of the tourist guide is usually key to the impact of the tourists on the environment they visit.) Finally the boundary between services and goods is often indistinct because production and sales of goods can include a number of services without recognition of such.

B. Identifying the services/environment nexus

The perception that the production and consumption of services do not have the potential for environmental harm is increasingly being called into question. The Secretariat in its literature search has identified three approaches to assessing potential effects. Note that these approaches also point to the often positive effects of services in the national economy.

⁴ This is so even in telecommunications, where the network must include the consumer’s location.

- *large impact per facility and cumulative impacts from non-point sources*
- *direct and indirect effects*
- *upstream and downstream effects*

Large impact per facility and cumulative impacts from non-point sources

James Salzman in his paper “Beyond the Smokestack: Environmental Protection in the Service Economy”, (Salzman, 1999) examines the type of impacts that the service sector can have on the environment. One of the main distinctions that he advocates is between *direct* impacts per facility and *cumulative* impacts on the environment. He dubs services that have a sizeable and direct effect on the environment *smokestack* services. This includes such services as air transport, road transport and hospitals. These services are characterized by their easily identifiable and acknowledged effect on air pollution and waste levels. In the case of hospitals, their physical size means there is a noticeable and often regulated environmental impact.

Salzman makes a further distinction about services industries that points towards potential significant environmental impacts. Where the individual service supplier’s impact is negligible, collectively these providers may have a substantial environmental impact. These services have a *cumulative direct* environmental impact. For example, a large number of automobile service stations in an area may have a major impact on the ground water supplies of that area. Although their individual effect from storage tank leaks and spills of oils, solvents and other hazardous substances is minor, their combined effect has brought them to the notice of regulators. In San Francisco, a high level of silver content in the bay was traced to the disposal of silver waste from dentists’ offices. Yet the individual disposal level of the silver bearing x-ray solution fixer was minimal. The seemingly minor effects of many industries in the service sector may have to be taken into account in a country’s environmental policy. The distinction between cumulative effects and direct impacts per facility draws to attention the far-reaching potential for significant environmental impacts from the service sector. The figure below illustrates this.

Table 3. Potential (negative and positive) environmental impacts of service industries

Service sector	Potential impacts
Retail sales and distribution Food, consumer goods	Emissions from transportation Impacts from ultimate disposal of goods purchased Potential to influence consumer behavior – negative impacts from increased consumerism, positive impacts from meeting and contributing to demand for sustainably produced goods
Vehicle service and repair	Use and disposal of hazardous products Air emissions from vehicle fuelling and painting Contamination from leaking fuel tanks
Hotels, restaurants and food service	Food and packaging waste Impacts from energy and water use
Consulting	Indirect impacts through influence on client behavior
Facilities/building services	Use and disposal of hazardous products Positive impacts of recycling programs
Dry cleaning	Use and disposal of hazardous products Air emissions from cleaning chemicals Contamination from leaks of cleaning chemicals
Photo processing	Use and disposal of hazardous products Waste disposal impacts - film and disposable cameras
Consulting engineering	Technology choice with subsequent impacts from construction and operation
Tourism	Direct 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 behavior
Transportation	Impacts from infrastructure requirements - roads, service centers Use of gasoline and hazardous substances for vehicle operation and maintenance Air emissions from vehicles Noise and visual pollution
Health care	Use and disposal of hazardous materials, medical and biological waste, radioactive materials from sources such as: Transportation, Food Services Laundries, Facility Cleaning, Photographic Processing
Environmental services (waste and water treatment, recycling)	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 behavior
Other - entertainment, advertising, accounting, computer services, communication, utilities	Use and disposal of hazardous products Impacts from energy and resource use Indirect impacts through influence on client behavior Waste disposal impacts

An important premise is that the environmental effects of the service sector must be examined throughout the life cycle of the provision of a service. Therefore the long-term and short-term effects of the provision of a service must be included in our assessment. Thus in tourism the long-term effects such as soil erosion from the use of national parks should also be taken into account.

Secondly, it is suggested that both direct and indirect effects should be assessed. For services such as engineering, consulting and banking, although they only supply knowledge, finance or both, this supply facilitates further action by the consumer. Any effect on the environment of the action by the consumer of the service may be an indirect effect of the supply of the service. A building designed to have minimal environmental effects from its use over its entire lifetime, is a positive, long-term and indirect effect of the service provided by the architect.⁵ The environmental impact of service sector inputs in the manufacture of goods can be assessed using the indirect effects methodology. To have an accurate picture of the environmental impact of the services sector, both direct and indirect environmental effects must be taken into account. There is of course a limit to the extent that indirect and long-term effects are relevant, but this can be worked out with common sense, and should not be an argument for disregarding these effects altogether.

“Upstream” and “downstream” environmental impacts

A third approach for assessing environmental effects arising in the provision of services in the national economy are “upstream” and “downstream” effects. In brief, these are the effects that service providers can have on their customers’ or suppliers’ environmental practices using their market position.

Since late 1999, Resources for the Future, has published three papers on the environmental implications of health care, foodservice and food retailing and tourism services. Part of a comprehensive study, these papers aim at better understanding how sensitive service sector activities impact on the environment, so that adequate management strategies can be implemented. For this purpose, RFF elaborates a methodology that identifies three different types of influences: direct impacts, upstream impacts and downstream impacts.

⁵. The Norwegian Green in Practice program (GRIP) has brought out a manual on eco-effective building construction with the aim of improving knowledge of environmental building practices. See: *Industry and Environment*, UNEP, July-September, 1998, p. 11.

While direct impacts are the most straightforward, the other two categories appear to be more intriguing and valuable from the policy-maker point of view. According to the RFF definition, “upstream impacts are those resulting from the service provider’s influence over its suppliers’ products specifications or environmental performance” while “downstream impacts [are the outcome of] the service provider influences on its customers’ behavioral or consumption patterns” (Davies and Lowe, 1999). The basic insight behind this framework of analysis is that certain services’ economic leverage can be exploited to improve suppliers’ and customers’ environmental behavior.⁶

In the paper on the *health care* service sector, Davies and Lowe analyze one of the largest U.S. industries and its possible impacts on environmental quality. Many functions performed in this industry are similar to those found in other sectors, from transportation, to facility cleaning, passing through photo processing. Yet, others are unique to the health care sector such as infection waste generation and disposal; medical waste incineration; dental filling; x-ray diagnosis; mercury usage etc.

For example, mercury, which contributes to the built-up of hazardous wastes and of polluting emissions is contained in a variety of medical products (dental fillings, thermometers, blood-pressure units, saline solutions, thermostats, etc.) and is regularly discharged in wastewater. According to the RFF study, the strategic role played by the health care operators in this sectors can be utilized by the policy makers to exert a certain leverage on this industry’s supply chain so that non-mercury based alternatives are made available and more friendly environmental management initiatives are implemented.

In another study, Davies and co-author Konisky (2000), apply the conceptual framework previously elaborated, to discover that also the *foodservice and food retail industries* can exert a large influence on suppliers’ and consumers’ behavior due to their fundamental role in the food marketing system. Being the gatekeepers between producers and consumers, these two industries are in a strong position to “green” the supply chain, signaling government or customer environmental preferences to suppliers. Likely, the intermediary position of foodservice and food retail companies provides similar opportunities to influence downstream environmental

⁶ For a similar concept, that of leverage services, see J. Salzman in “Beyond the Smokestack: Environmental Protection in the Service Economy”.

performance. Either offering environmentally friendly products to consumers or providing information about the environmental implications of their purchasing decisions, operators can help customers to improve their environmental record.

Food and food retail services, for instance, are responsible for several negative environmental impacts such as energy consumption (the average foodservice building used 122.8 thousand Btu per squared foot in 1995 compared with an average of 45.7 thousand for other commercial buildings), solid waste generation (21.9 million tons of food waste in 1997 and packaging materials), air emissions (CFCs), water polluting emissions and food-borne diseases. Food waste and packaging constitute alone the bulk of overall municipal solid waste.

In the last and most recent working paper presented by RFF, Terry Davis and Sarah Cahill apply the conceptual framework utilized in the previous analyses also to the *tourism industry*. In this sector, opportunity for a more environmentally responsible action is considerable. The supply chain in the tourism industry is composed of those industries that provide accommodation, transportation, and make arrangements for travelers. Thus, all of them can play an important role in reducing the degree of environmental impact of tourism. For instance, the lodging industry can require its suppliers to provide products that minimize environmental exploitation. Or, similarly, travel sector providers can supply consumers with information on possible environmental impacts of their actions and options to ameliorate natural resource use (i.e. hotels can give guests the option not to have their linen washed daily).

Tourism accounts for several direct environmental impacts such as resource use, pollution and waste outputs, habitat and ecosystem alteration and fragmentation, impacts on wildlife, cultural impacts and impacts on gateways communities. Tourism has also a cumulative impact. In fact, nutrients leaching from the septic system of a tourist's resort are very likely, in the long run, to accelerate eutrophication and ecosystem disruptions.

The methodology elaborated by RFF on "upstream" and "downstream" environmental impacts represents a further step towards a better understanding of the consequences of human actions on natural resources. It also provides, at the same time, a tool to learn how to take advantage of certain sectors' characteristics in order to improve national environmental regulatory action and policy-making.

C. Goods used and supplied with services

Tracing the effects of the goods used in the supply and consumption of services in all of the above approaches is key to understanding the environmental impact of the service sector. When looking at the direct or downstream effects of a service, its impact is often due to the environmental effect of the material consumption in relation to that direct or downstream effect. The service itself is in general intangible, and thus its direct environmental impact is measured by the effect it has on the consumption of materials. The three approaches to assessing the environmental impact of domestic services facilitate the examination of the positive as well as negative environmental impacts of the material inputs and outputs of a service. A simple example is the reduction in overall waste through the use of rapidly biodegradable product wrapping in food retail. In this example the technology used to improve the wrapping was an input to the service, and the waste generated was an output of the service. The three approaches and these final points provide a framework for assessing the environmental effect of services in an economy. They also indicate that this large and increasing sector of the economy, a series of significant environmental impacts.

III. Assessing environmental effects of services trade liberalization

A. Methodologies used in past reviews

OECD 1994 Methodologies

In its 1994 *Methodologies*⁷, the OECD Joint Session of Trade and Environment Experts developed a combination of two approaches for governments to use to evaluate the effects of trade liberalization (focussing on goods trade). The first approach considers the changes in output resulting from the phasing out of tariff barriers on goods and thus, their eventual impacts on the use, *inter alia*, of natural resources. The second approach has a more legal cut in the sense that it sheds light on the changes in national laws and regulations following trade liberalization.

7. "Environmental Reviews of Trade Policies and Agreements", was the first half of the OECD document entitled, "Methodologies for Environmental and Trade Reviews". The entire document may be found at <http://www.oecd.org/env/online-eco.htm>.

Analyzing in more detail the OECD Methodologies, the first approach involves examining four different categories of economic impact of (goods) trade liberalization:

- Scale effects
- Structural effects
- Products effects
- Technology effects

Scale effects are triggered at the macro-economic level by the reduction of tariffs on tradable goods. As trade liberalization impacts on the level of economic activity, this in turn affects the use of environmental resources. On the positive side, higher levels of economic growth and higher disposable revenues will allow more resources to be devoted to address environmental concerns. However, augmented trade may also contribute to exacerbate environmental pressure since more growth means more consumption and more production, and thus more pollution. This vicious circle is perpetuated especially in the case of incorrect pricing of scarce environmental resources. In fact, when environmental costs are not internalized correctly, trade-induced economic growth tends to aggravate inefficient patterns of production and consumption.

Structural effects are associated with changes in the composition of economic activity. Therefore, they are more indirect and micro-economic effects, basically related to modification of processes of production stemming from the reduction in tariff barriers. Positive structural effects may result when liberalization improves the allocation of resources and the efficiency of production and consumption. The economic rationale behind this idea is the classic concept of “comparative advantage”. In the context of the use of natural resources, this means that each country should be better off specializing in the production of those goods that are intensive in its natural endowment.

However, this simplified explanation overlooks some of the major peculiarities that characterize natural resources. If the environment is, indeed, to be considered as a factor of production like labor and capital, it is, however, not easy to price given the non-monetary values such as biodiversity loss, soil loss and other irreversible effects that should enter the equation to provide full cost internalization. In general, environmental externalities exist since markets do not reflect

totally the real value of environmental resources. Given the difficulty in attaching a monetary value to non-tangible environmental assets, Pareto-efficiency is rarely attained.

Product effects relate to the diffusion of environmentally sound, or hazardous, goods as a result of trade liberalization, since tariff barriers reduction is likely to be associated with exchange in specific products that can harm or enhance the environment. Positive product effects may result from the diffusion of environmentally sound products, while negative product effects may result from augmented trade in environmentally sensitive/harmful products.

Technology effects will be triggered by the liberalization process as it impacts on production processes due to technology transfer. Positive technological effects can occur when trade liberalization facilitates the distribution of environmentally friendly technologies, which results in a reduction of pollution per unit of economic output. In contrast, negative technological effects will occur in case trade liberalization is conducive to the diffusion of harmful technologies.

The second general approach from the OECD Methodologies involves a legal rather than economic analysis. *Regulatory* effects result from the impact of trade liberalization on national environmental policies and standards. On the one hand, positive regulatory effects occur when trade measures do not impinge upon the ability of governments to implement effective environmental policies. In addition, openness can have an educative effect and lead to upwards harmonization of environmental regulations. On the other hand, negative regulatory effects occur in case harmonization provisions of trade agreement neutralize governments' ability to set environmental protection standards.

Albeit in many respects the "grandfather" of environmental review methodologies, the OECD 1994 *Methodologies* is not the only framework of assessment for environmental effects of trade liberalization. In fact, a recent review by the CEC written for the 1999 OECD methodologies workshop on environmental assessments of trade liberalization agreements (OECD, 1999) established a typology of five approaches was used in past environmental reviews of goods trade liberalization. These are: 1) identifying and responding to public concerns; 2) responding to trade-environment hypotheses; 3) linking economic data with environmental outcomes; 4) examining the impact of economic sector-specific changes on environmental effects; and 5) assessing environmental media effects.

Public concerns

Governments pursue the phasing out of trade barriers to promote growth through openness and, thus increased welfare. But governments recognize, as well, that economic growth alone does not always lead to equitable and sustainable outcomes. Thus, it is appropriate that governments commit themselves to mitigate negative effects of economic growth.

It is perhaps inevitable that the potential negative impacts of liberalization raise public concern. And, in the past, these concerns have represented one of the fundamental justifications for carrying out environmental reviews. For example, in the case of goods trade liberalization, for services, public opinion and NGOs have expressed the fear that multilateral liberalization may neutralize domestic regulatory sovereignty and independence.

More specific to what GATS regulation defines as mode 3 (services rendered by a service provider of one member through commercial presence inside another member's territory), is the fear that Foreign Direct Investment (FDI) will have, in general, negative implications on the environment, and, in particular, will neutralize the national ability to implement environmental regulation. In fact, among the other forms of cross-border capital flows, FDI is the one that is often perceived as having the closest link to the environment. Since FDI often flows into facilities such as power stations, mines and plants, it raises concerns related to issues of pollution controls, ecological protection, efficient resource exploitation and public health issues.

At the same time as addressing fears about effects of FDI on the environment, reviews offer the opportunity for governments to point out numerous cases of investment bringing clean technology and resource-saving management techniques (e.g. various clean coal investments in China). FDI of course is, as domestic investment, subject to government regulations, including environmental standards.

Trade-environment hypotheses

The second strain of thought that has driven environmental reviews in the past is the one that identifies hypotheses about the relationships between trade and environment. Among the most famous presumptions that have been investigated using econometric analysis are the

Environmental Kuznets Curve (EKC) and the migration of dirty industry (or pollution haven hypothesis). Even if both have a certain appeal, current research has not found much empirical evidence to support them. As far as the EKC is concerned, not only is there no unanimity on the approximate level of income at which pollution should stabilize and start declining, but also it has been proven that for some industrial global pollutants its inverted U-shaped relationship does not apply.

Similarly, for the migration of dirty industry, according to which reduced trade barriers will result in a specialization by developing countries in pollution-intensive industries, evidence is scarce as well. In fact, if industrial relocation has to be triggered by less stringent environmental standards, several empirical studies (Ingo Walter 1973, Robison 1988, Tobey 1990, etc.) have shown that environmental control costs, thus costs of compliance, are so small as to hardly ever cause industries to relocate.

Linking economic data and environmental outcomes

The third approach on which past environmental reviews have been based is that characterized by the effort of bridging trade theory and economic models with environmental models and indicators. These efforts correspond closely to the OECD *Methodologies* described above which break down economic changes into components of scale effects and structural and technology effects. Even in the case of goods trade, where data are good, it has proved challenging to model environmental impacts following the liberalization process. Thus, given that the quality of the data on services trade is significantly worse than for goods trade, economic models are unlikely to predict meaningful environmental impacts.

Sector approach

A fourth methodological approach employed in past governmental reviews is the one linking changes in specific economic sectors to changes in environmental indicators. From a theoretical point of view this type of exercise appears flawed since it lacks a more comprehensive perspective. However, in the case of services trade, a sector-specific analysis to investigate environmental impacts of liberalization seems to be particularly appropriate. Different services,

in fact, impact very differently on the environment. While some services appear to have relatively small indirect impacts environmentally friendly (business services, law firms, consultants), some others, the so-called “smokestack services”(electric utilities, express delivery, hospitals), are characterized by the production of significant quantities of pollutants and hazardous waste. Moreover, once taking into account the limited resources available for to environmental reviews, it seems more plausible to focus on those sectors that at the screening level appear likely to have important impacts on the environment. Through a screening process of individual services sectors, it should also be possible to identify sectors with potential positive effects, such as environmental services.

Environmental media

The last methodological approach consists of analyzing the effects of trade on environmental media effects. Many reviews try to provide evidence of the effects of liberalization on environmental media such as water, land, air and bio-diversity. However, as with all previous approaches, this one has its weaknesses. Inevitably a sector-specific analysis focusing on the effects of trade-induced changes on each environmental medium has the major shortcoming of missing changes across sectors.

Final Analytic Framework for Assessing the Environmental Effects of NAFTA

From the very start of the NAFTA, environmental concerns have been at the forefront of the public policy debate. Opponents of the agreement have recurrently claimed that further trade liberalization, especially between Mexico and the United States, would result in significant environmental degradation. Among the major anxieties that have characterized the negotiations and the political climate thereafter were the possibility of a regulatory “race to the bottom”, the migration of dirty industries to Mexico and the consequent creation of pollution havens.

In order to address these concerns, the Commission for Environmental Cooperation (CEC) (set up under the North American Agreement on Environmental Cooperation) assembled a NAFTA Effects Project Team to assist in designing a methodology to fulfil its mandate of considering on an ongoing basis the environmental effects of NAFTA. After four years, the North American

experts produced the *Analytic Framework for Assessing the Environmental Effects of NAFTA*⁸. In addition, three detailed issue studies were produced in 1999 on maize in Mexico, cattle feedlots in the US and Canada and electricity in all three NAFTA members (CEC, 1999). Over 130 pages in length, the *Analytic Framework* provides a comprehensive methodology addressing economic, social and government policy linkages to environmental effects. Although the importance of both trade in services as well as trade in goods is referred to, there is little specific consideration of possible environmental effects arising from NAFTA-induced changes in services trade.

On the other hand, there is considerable attention devoted to transborder investment flows⁹. The *Analytic Framework* states that six factors are of importance in exploring NAFTA-associated changes in transborder investment with a view to tracing their environmental effects:

- Regional concentration of investment,
- Sectoral investment shifts, migration and subsidies,
- Technology transfer and diffusion,
- Intracorporate integration in production,
- Corporate concentration and
- Foreign portfolio investment.

The *Analytic Framework's* more complete discussion of these six central variables for Transborder investment flows appears in the Annex appended to this paper.

Due to the importance of NAFTA as an investment agreement as much as a trade agreement, it is understandable that the NAFTA Effects project focussed on all investment flows -- e.g. in extractive industries and manufacturing, as well as services, and not only FDI but portfolio investment flows. This fact -- together with the different approach to liberalizing services trade

⁸. Available on the CEC's website: <http://www.cec.org>

⁹. Overall, it was found that "*the available evidence from NAFTA's first few years in operation suggests that NAFTA-associated investment has not had a negative effect on environmental quality overall, and may well have led to environmentally-enhancing impacts in several ways. Such a portrait is sustained by a more detailed examination of investment trends in North America in recent years*" (CEC, 1999).

adopted in NAFTA – probably makes the methodology of more limited use when addressing multilateral services trade liberalization. As some 60% of FDI that takes place in NAFTA is now in services and as services trade is liberalized further, it is for consideration whether the CEC may wish to study more directly the relationship of NAFTA-induced services trade and environmental quality.

B. Lessons from past reviews for services trade

After having briefly surveyed the different methodologies used in past environmental reviews to assess trade liberalization in goods, what are the lessons for services trade liberalization? Taking into consideration the previous approaches, it seems compelling to re-group them into three categories that offer greater potential for assessing environmental effects of services trade:

- Linking economic changes and environmental indicators
- Addressing public concerns
- Sector by sector approach

Linking economic changes and environmental indicators

Being able to explore the links between economic output changes and variations in environmental indicators remains, among others, an appealing approach conceptually. The economic literature has more than once tried to decompose the environmental effects of changes in macro-economic conditions. For example, modeling the economy-wide effects of freeing up such measures has only recently been developed. Dean (1999), in a recent publication edited by the World Bank, provides an econometric analysis testing the impact of trade liberalization on the environment. She points out that since freer trade raises income, it directly contributes to increasing levels of pollution. But, at the same time, another mechanism is triggered provoking opposite effects. If the environmental Kuznets curve applies, once a country has reached a certain level of wealth, higher levels of incomes will also raise the demand for a cleaner environment.

Behind the simple causality of this mechanism, according to which freer services trade leads to more consumption and more production and thus, augmented pollution levels, reality is complicated by opposing effects. Therefore, especially in the case of services, where data is poor, the relative restrictiveness of various measures affecting services trade is not well understood and this approach seems unlikely to be effective. If the idea of linking changes in economic output with variations in environmental indicators cannot be totally dismissed, its applicability to services trade appears limited until these data and econometrics issues have been advanced.

Addressing public concerns

Given the distinctive nature of services, addressing public concerns would appear to be a serious candidate to approach environmental reviews for services trade liberalization.

Public concern about services trade liberalization – to the extent certain environmental groups have focussed on it – appears to center around possible effects on environmental regulation, national standards and environmental measures. Thus, a possible option of governments would be to assess the possible regulatory effects of services trade liberalization in order to address serious concerns regarding the effectiveness of existing environmental regulation and the freedom to introduce new environmental regulation in the future.

In the current debate on trade liberalization, in general, the fear of a possible "regulatory chill" dictated by rules negotiated at the international level is a recurring one. Most of all the threat seems to be that of experiencing negative regulatory effect whereby services trade liberalization impedes national environmental protection laws. With special reference to GATS mode of supply no. 3 (commercial presence of foreign supplier in the territory of another WTO member), some NGOs have pointed out how multinational corporations might be tempted to take advantage of more liberalized trade to shield themselves from environmental regulation of recipient countries. GATS recognizes that Governments have a right to regulate as they see fit. Other WTO Agreements (TBT and SPS) also endorse regulatory sovereignty and deal largely with the process and not the substance of regulation.

Generally speaking, FDI plays the role of a strong engine in world economic development and has been making significant contributions to the sustainable development of the host countries.

However, FDI continues to be targeted by some environmental groups which point to negative impacts of liberalization of FDI. In a recent study, WWF claims that FDI liberalization in presence of externalities, such as the incorrect pricing of natural and exhaustible resources, can contribute to environmental degradation. WWF, also, underscores that in the sheer competition to attract FDI, countries that grant structural subsidies, through guarantees and aid flows, may distort international investment towards resource-intensive long-run projects. WWF fears also that competition for FDI may also depress the evolution of environmental standards. In fact, even if the most dreaded scenario of a “race to the bottom” does not apply, States, for fear of losing potential investors and experience competitiveness losses may be stuck in a “regulatory chill”, not implementing or enforcing optimum-level environmental standards.

Despite the fear that FDI may exacerbate negative pressures on environmental resources, environmental reviews focusing on such concerns offer the opportunity to stress the pivotal role in the improvement of recipient economies and their physical environment. Whenever investments help to establish links with the domestic economy, FDI can be a development propeller and positive direct gains for the environment. Among others improvements, FDI can transfer cleaner technologies, as well as technical know-how and managerial expertise. Also, instead of triggering a race-to-the-bottom in environmental standards, FDI, by improving communication, practices and awareness can lead to upward convergence of environmental regulation and practice. To accompany the development needs for FDI in developing countries, the World Bank regional development banks and other donors extend significant technical assistance to develop their environment regulatory capacity. In addressing public concerns, both the positive as well as the negative aspects of FDI will need to be evaluated.

Sector by sector

The third methodological approach used in past reviews which holds promise to carry out an environmental assessment of services trade liberalization is a sector by sector analysis. If the shortcoming of such a methodology is that it does not grasp the complexity of an economy-wide approach, its merits are various. First of all, environmental assessments are not cheap exercises. Therefore, given the limited resources granted by governments for this purpose, it becomes imperative to identify those sectors whose environmental impacts are likely and significant.

Second, the panoply of different sectors has to be taken into account that make up services. Some of them such as legal consulting, financial services or insurance, for instance, appear to be relatively environmentally benign. While some others, such as parcel delivery and transportation services, tourism and energy-related services *a priori* produce discharges and emissions tantamount similar to those resulting from goods trade. The question becomes whether more trade in such services, following liberalization, would tend to increase such negative effects or through structural and technology effects lead to an improved/stable environment.

At this stage, it seems appropriate to mention two specific-sector assessments in process. WWF, in a recent draft study, presents a framework for assessment of environmental and social effects of trade liberalization in the tourism sector. This study is broader in scope than other environmental reviews as it undertakes a sustainability assessment, i.e. it also reviews social effects of tourism liberalization. The main objective of the WWF study is, indeed, to examine and clarify the linkages between trade, environment and development. In the context of on-going WTO services negotiations, WWF considers it fundamental to shed lights on the potential implications of liberalizing the tourism sector.

The liberalization-induced changes in the provision of tourism services are likely to produce extensive environmental and social impacts in the country of destination. First of all because this sector is booming, accounting for the most rapidly growing service industry. Second, because it is the largest creator of jobs. Finally, and even more important from an environmental point of view, the tourism industry prospers thanks to the exploitation of natural assets. Thus, the need for physical infrastructure, the indispensable role of (quality) foreign investments and the necessity of managing waste and discharges adequately, make this sector an important one to discover how environmental and social impacts can support or impede sustainable development.

Norway has announced its intention to undertake an assessment of possible GATS liberalization of the transport sector. Work is currently in train but it is understood that the assessment will combine broad “guesstimates” of economic change with possible changes in certain measures of environmental pollution.

C. Techniques in methodologies currently under development

Screening

Apart from the various assessment methodologies that have been exposed above, it is also common, especially in recent environmental reviews to utilize a further technique called screening. Screening is used, in the initial part of the environmental review, with a similar intent to the one that aimed the sector-specific analysis: reduce the extent of the assessment. The screening process, thus, helps to decide which trade measures are likely to produce significant environmental impacts. It aims at identifying and separating those parts of the liberalization agreement, which have to be subject to assessment, being more likely than others to produce environmental effects such as pollution and resource degradation.

Screening was already part of the 1994 OECD *Methodologies* for environmental review of goods trade liberalization agreements. According to the OECD indications, countries interested in reviewing trade policies with potentially significant environmental effects were to establish its own screening criteria. Given the differences in countries' preferences, the criteria would reflect their national environmental concerns. The screening phase, however, would be for every country the beginning step of the environmental review in order to select specific trade measures meriting further consideration.

Screening is also contemplated in the Strategic Impact Assessment (SIA) developed by the University of Manchester on behalf of the European Commission as a preparation for the proposed Millennium Round of multilateral trade negotiations. The purpose of this exercise is to determine which measures on the proposed new round agenda may be excluded from appraisal because they are unlikely to impact on the environment. Screening is intended to encourage cost effectiveness, allocating resources to those trade measures that are deemed significant. It is a procedure to be carried out on the basis of set criteria in order to decide which of the trade measures that have been multilaterally negotiated, can be excluded from the SIA. Those measures of the trade liberalization agreement whose analysis is ruled out are those unlikely to produce significant environmental impacts.

Several criteria can be taken into consideration, at this initial level of analysis, to decide which liberalization measures do not impinge on the environment. Among these are: whether the areas to be affected are already under economic, social or environmental stress, whether the measure is likely to contribute to cumulative impacts of the new Agreement as a whole or whether the existing regulatory and institutional capacities in the affected areas are sufficient to implement mitigatory measures (Kirkpark and Lee, 1999). In the specific context of services liberalization, the EU SIA reached the conclusion, after the screening level, that significant impacts (economic, social and environmental) can be anticipated in most sectors.

A similar approach to the one just described is that undertaken by Canada in its *Draft Environmental Assessment Framework for Trade Negotiations*. Canada underscores its commitment to ensuring that trade and environment be mutually supportive. The environmental framework seeks to provide trade negotiators with the key to understand environmental and trade linkages. Therefore one of fundamental *atouts* of the framework is that it is designed to be practical and flexible enough to be adapted on a case-by-case basis.

Since Canadian policy-makers are aware of the challenges of conducting an environmental assessment, they point to the impossibility of considering all issues at once. In line with the EU SIA, they propose a rigorous scoping exercise. Similar to the screening procedure, scoping aims to discriminate the most significant and likely environmental impacts from other more neutral effects resulting from trade agreements. In fact, while many environmental issues should be examined, limited data, limited resources and practicality require that the assessment be focused on very specific pressure points.¹⁰

Following a similar pattern, the U.S. Guidelines for Environmental Review of Proposed Trade Agreements also propose a scoping procedure to identify potential environmental effects of trade agreements (United States Federal Registry, 2000). The U.S. is committed to undertaking objective and science-based assessments based on a scoping mechanism, which has two principal components: identification and prioritization of relevant issues.

¹⁰ Canada's *Draft Environmental Assessment Framework for Trade Negotiations*, <http://www.dfait-maeci.gc.ca/tna-nac/social-e.asp>, p. 6.

The first component of the scoping process is very similar to the screening exercise in the EU and OECD methodologies, since it involves the identification of a range of foreseeable environmental impacts to be further analyzed in the environmental review. Following the identification process, prioritization is used to selecting important issues warranting more in-depth analysis. Some of the initial identified impacts may be eliminated from consideration through the prioritization procedure.

Scenario-building

Another component of the EU SIA methodology merits further examination. Any environmental review has to take into account the considerable uncertainty characterizing the package of measures resulting from a new round of trade negotiations. In fact, the level of liberalization reached in a future agreement will affect the sustainability impact of any trade measures. Consequently, the EU SIA considers alternative scenarios to be constructed to shed light on the sensitivity of the sustainability outcome to the adoption of different negotiation agendas (Kirkpark and Lee, 1999). For practical reasons the scenarios have been limited to three: a “base” scenario, an “intermediate” scenario and a “trade liberalization” scenario.

The three scenarios envisaged for the GATS 2000 negotiations were:

- The Base Scenario, where no new agreements were reached and the level of commitments remained unchanged.
- The Intermediate Scenario, where improved commitments regarding market access and national treatment were to be reached as much as a strengthening of GATS discipline on Article VI and new rules on safeguards, subsidies and government procurement.
- The Trade Liberalization Scenario, that assumed substantially more services trade liberalization with the adoption of new commitments in terms of market access and national treatment across the four modes of supply and twelve services sectors.

The Norwegian review of transport liberalization may also proceed on the basis of three scenarios: a) the status quo; b) institutional progress (e.g. strengthened rules on domestic regulation,

subsidies; MFN exemptions, market access and national treatment commitments); and c) towards market integration.

This scenario building analysis can, thus, represent a powerful instrument to render environmental reviews more flexible and adaptable to the evolving situation of particular requests and offers made in the context of trade negotiations.

IV. Towards an assessment of possible environmental effects of GATS 2000

In 1994, with the signing of the Marrakech Agreement and the establishment of the World Trade Organization, the GATS represented a beginning. In its "bottom-up" approach to build a liberal services trade regime, it provides a framework for new commitments across a range of sectors. Using the GATS schedules of commitments, as explained above, however does not provide a full or accurate picture of the extent of a country's measures in place. Nor do attempts based on frequency indexes to assess the countries which have made commitments give a good portrayal of the relative restrictiveness of the various types of measures restraining trade. And to further complicate the analyst's task, many countries have undertaken unilateral liberalization in the recognition that, for example, through domestic regulatory reform, increased competition and improved access conditions are indeed in their own national economic interests, even when not necessarily an important supplier of a particular service. Therefore those commitments which have been "bound" in GATS schedules are often a minimum, when in fact access conditions are far more liberal for foreign services suppliers. All of these factors can be expected to frustrate the job of approaching the assessment of services trade liberalization for its environmental effects.

On the other hand, the "good news" is that WTO Members have embarked on a new GATS 2000 round of negotiations to improve the current services trade regime, by extending commitments and developing the rules-based system. At the same time, a large number of OECD Members are committed to undertake an environmental review, across the board, of the potential impacts of freeing-up trade. The OECD Joint Working Party on Trade and Environment is in the process of developing a possible methodology to undertake the job of developing a checklist of questions to provide policy makers with a tool to assess environmental effects of services trade liberalization. This methodology will build on the OECD 1994 *Methodologies* -- and its appended Checklist --

developed for trade in goods. In assessing potential environmental effects, this methodology will take into account differences between trade in goods and trade in services and the complex aspects of multilateral liberalization of trade barriers.

Development of such a Checklist is currently underway in the OECD Secretariat. The basic elements incorporate elements from the OECD 1994 Methodologies, that is assessing the economic effects (particularly scale, structural and technology effects). Particular emphasis will be given to assessing the regulatory situation, in relation to current rights and obligations (and possible future developments) arising under GATS provisions on domestic regulations. It is also felt necessary to develop the additional approaches of building scenarios of likely trade liberalization as well as screening services from a sectoral point of view.

ANNEX

Extract from *Final Analytic Framework for Assessing the Environmental Effects of NAFTA* on Transborder Investment Flows

Transborder Investment Flows

In important respects, NAFTA was an investment agreement as well as a trade agreement, and transborder flows of foreign direct investment (FDI) are closely associated with trade. In assessing changes among the three North American countries, it is important to focus first on direct investment, and second on portfolio investment.

Direct foreign investment, particularly that of highly integrated transnational corporations (TNCs), brings important capital, management, technology, distribution systems, reputation, markets, and other business assets. Attention should be given to both “greenfield” (new) investment, and acquisitions or expansions, and include both fully-owned investment, joint ventures and North American business alliances. Priority should be placed on changes in stocks, more than on flows of foreign investment, as the latter data incorporate the fullest range of investment alterations.

In assessing these changes, several variables are central:

1. *Regional concentration of investment.* This addresses how post-NAFTA FDI stocks (and secondarily, flows) among the three NAFTA countries, relative to pre-NAFTA periods and non-NAFTA partners, have changed overall, and in particular sectors, for each of the three countries. In all cases, transborder investment should be considered in the context of:

- domestic investment (including both net domestic investment and the percentage of an industry that is foreign-owned, by firms headquartered and owned in NAFTA and non-NAFTA countries);
- how investment from NAFTA countries and non-NAFTA countries is concentrating in, as opposed to outside, North America; and
- the geographic concentration of investment in particular countries and locations within each NAFTA country, including transborder production clusters or transportation corridors.

2. Sectoral investment shifts, migration and subsidies. This considers whether this investment is expanding most rapidly in relatively polluting or relatively clean sectors. Of particular interest is whether NAFTA-associated FDI constitutes an environmentally costly transfer of industries and plants (including costs for environmental regulatory compliance) from one country or locale in the NAFTA region to another, and how the standards, subsidies, and other relevant government policies compare in those locales. Transfers of investment can take the form of a physical move of an existing plant or an expansion or placement of new investment in one area at the expense of another.

3. Technology transfer and diffusion. This looks at the degree and speed of the spread of advanced technology from one firm to a related enterprise in the other NAFTA countries. Such a trend is promoted by regional production systems. It increases both technology transfer and diffusion to competing firms in the same industry, to related and non-related firms in the sector, and throughout the economy. Of particular relevance are technologies that improve overall efficiency, and those directed at enhancing environmental quality.

4. Intracorporate integration in production. This considers whether and how the NAFTA regime is increasing intracorporate trade and affiliated trade between and among the members. Such a process can be expected to encourage integrated production systems that make it more likely that plants operating in all three countries will adopt and follow a common set of standards and practices.

5. *Corporate concentration.* This examines how FDI may be encouraging changes in facility size and a trend toward concentration within industrial sectors by creating a smaller number of larger, more capable firms servicing the NAFTA marketplace.

6. *Foreign portfolio investment.* This is concerned with how portfolio investment relates to, reinforces, substitutes for, or provides domestically owned firms with the finance for upgrades and expansion in technology and production.

BIBLIOGRAPHY

- CEC. 1999. *Assessing Environmental Effects of the North American Free Trade Agreement (NAFTA). An Analytic Framework (Phase II) and Issue Studies*, Commission for Environmental Cooperation. Montreal.
- Davies, T. and S. Cahill. 2000. Environmental Implications of the Tourism Industry. Discussion Paper 00-14. Resources for the Future. Washington D.C.
- Davies, T. and D. Konisky. 2000. Environmental Implications of the Foodservice and Food Retail Industries. Discussion Paper 00-11. Resources for the Future. Washington D.C. March.
- Davies, T. and A. Lowe. 1999. Environmental Implications of the Health Care Service Sector. Discussion Paper 00-01. Resources for the Future. Washington D.C., October, p. 1.
- Dean, J. 1999. Testing the Impact of Trade Liberalization on the Environment, in *Trade, Global Policy, and the Environment*. Per G. Fredriksson (ed.). The World Bank Discussion Paper No. 402. The World Bank Group Washington D.C., pp. 55-63.
- DFAIT Canada. 2000. *Canada's Draft Environmental Assessment Framework for Trade Negotiations*, September. www.dfait-maeci.gc.ca/tna-nac/social-e.asp
- Hoekman, B. and P. Sauvé. Liberalizing Trade in Services. World Bank Discussion Paper No. 243. Washington D.C.
- Karsenty, G. 2000. Assessing Trade in Services by Mode of Supply, in P. Sauvé and R.M. Stern (eds.), *GATS 2000: New Directions in Services Trade Liberalisation*, Washington, DC: Brookings Institution Press, pp. 33-56.
- Kirkpark, C. and N. Lee. 1999. *Sustainability Impact Assessment Study-Phase Two, Main Report*. <http://fs2.idpm.man.ac.uk/sia>, November. pp. 17, 21.

- OECD. 1994, "Environmental Reviews of Trade Policies and Agreements", in the OECD document entitled, "Methodologies for Environmental and Trade Reviews", available at <http://www.oecd.org/env/online-eco.htm>
- OECD. 1999. *Assessing the Environmental Effects of Trade Liberalization Agreements: Methodologies*. Paris.
- Salzman, J. 1999. Beyond the Smokestack: Environmental Protection in the Service Economy. 47 *UCLA Law Review* 411.
- Sauvé, P. and R.M. Stern. 2000. New Directions in Services Trade Liberalisation: An Overview, in *GATS 2000: New Directions in Services Trade Liberalisation*, (eds.) P. Sauvé and R.M. Stern, The Brookings Institution.
- Stephenson, S. 1999. Approaches to Liberalizing Services, Policy Research Working Paper 2107. The World Bank Development Research Group. Washington D.C., May, p. 72.
- Vaughan, S. 1999. Understanding the Environmental Effects of NAFTA, Background Paper for the NWF-Yale Center of Environmental Law and Policy Conference.
- Warren, T. and C. Findlay. 2000. Measuring Impediments to Trade in Services in *GATS 2000: New Directions in Services Trade Liberalisation* (eds.) P. Sauvé and R.M. Stern, The Brookings Institution.
- WWF. 2000. *Draft Framework for Assessment: Environmental and Social Effects of Trade and Trade Liberalization Policies in the Tourism Sector*.
- United States Government, 2000. "Draft Guidelines for Implementation of Executive Order 13141: Environmental Review of Trade Agreements Notice of Public Hearing", *Federal Registry*, Vol. 65, No. 133, July 11.