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RESEARCH PAPER

NAFTA, Tourism and the Environment in Mexico

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SUMMARY

This study has been prepared for the Fourth North American Symposium on the Assessment of the Environmental Effects of Trade for 2008, organized by the Commission for Environmental Cooperation (CEC) of North America.

The purpose of the study is to determine how the North American Free Trade Agreement (NAFTA) influences the Mexican tourism sector and its effects on the environment. The analysis of the linkage between the tourism sector and NAFTA is done through Chapter 11 (Investment) and Chapter 12 (Cross-Border Trade in Services). We find evidence of dispute resolution requests by US investors in tourism projects in Mexico. We also conduct a quantitative analysis of US and Canadian foreign direct investment. The study concludes that NAFTA represented greater certainty to investors, but was not the main driver behind the investments. In Mexico, foreign direct investment in general, and the tourism sector in particular, was deregulated years before the Agreement entered into force. We provide a quantitative analysis of tourist flows from the United States and Canada to Mexico. We find that Mexico has been a preferred destination since before the Agreement was signed. Other variables have had a more significant influence on Mexican tourism patterns, such as Mexican currency devaluation, natural disasters and international safety concerns. This study focuses solely on analyzing commercial presence in the form of hotels and restaurants, as well as the use of services abroad.

This analysis of NAFTA, tourism and the environment in Mexico recognizes the importance of Articles 14 and 15 of the North American Agreement on Environmental Cooperation (NAAEC), acting as a forum of expression and mechanism for attending to citizen submissions on failures in environmental law enforcement in the NAFTA countries. We conduct a qualitative analysis of the environmental law framework on issues involving tourism, finding evidence of CEC citizen submissions regarding enforcement failures with respect to tourism developments in Mexico. The study recognizes the importance of Mexico's social organization to denounce enforcement failures. We provide an economic-environmental balance at one tourist destination preferred by international visitors, which has been given priority status for tourism development and environmental conservation in Mexico. The balance concludes that the greatest environmental impact is of global importance: CO_2 released into the air by air transportation, followed by the local impact of water consumption, waste generation and electricity usage, in that order. We highlight the need to promote actions beyond environmental compliance, such as voluntary environmental certifications to ensure efficient resource consumption and waste management in the hotel sector. We also suggest a "zero impact" approach by airlines, referring not only to energy efficiency and technological improvement but also to pollutant offsets through payments to carbon capture projects.

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1. INTRODUCTION

This study analyzes the relationship between the North American Free Trade Agreement (NAFTA) and the Mexican tourism sector, to answer questions such as: Is the tourism sector intensively promoted by NAFTA? What variables other than NAFTA have an effect on the tourism sector? Can the same indicators used for trade in goods be used for the tourism sector? The answers to these first questions are based on the service definitions and classifications under the General Agreements on Trade in Services (GATS). This study focuses solely on analyzing commercial presence in the form of hotels and restaurants, as well as the use of services abroad, analyzing the relationship of the Agreement to tourism under Chapter 11 (Investment) and Chapter 12 (Cross-Border Trade in Services). The chapter on Investment accords the same benefits to investors from the other Parties as are granted to national investors, in addition to greater certainty and protection of their investments through a dispute resolution mechanism if any Party fails to fulfill its obligations. We have included an analysis of US and Canadian foreign direct investment in the Mexican tourism sector. We further analyze the flow of tourists from the United States and Canada into Mexico, as consumers of services.

The questions raised in the next part of this study are: Are economic indicators sufficiently comprehensive to include environmental impact in their final assessment? To what extent has the liberalization of services under the NAFTA framework changed Mexico's environmental conditions or environmental policy? To what extent do NAFTA rules and institutions prevent the implementation of policies to abate the environmental effects of the liberalization of the Mexican tourism trade? This section and qualitatively assess the evolution of the environmental rules in regard of Mexican tourism, including case studies. The environmental impacts of the liberalization of Mexico's tourism sector are identified using the 1999 Analytic Framework of the Commission for Environmental Cooperation (CEC). We analyze the application of Articles 14 and 15 of the North American Agreement on Environmental Cooperation (NAAEC), considering that they provide individuals and organizations with a forum of expression and a citizen submission mechanism to report any Party's failure to enforce its environmental laws. Here, we refer to cases involving tourism. The last part of the study looks for a balance between the economic impacts and environmental impacts of tourism, focusing on one region of the country in particular, chosen as a function of its importance as a foreign investment target and its position as a major destination for international tourists, as well as its priority status for tourism development and ecological importance.

2. METHODOLOGY

There are several methodologies to assess the impact of the liberalization of services on the environment. **Table 1** briefly describes the methodologies and the Analytic Framework of the CEC (1999), of the Organization for Economic Cooperation and Development (OECD), the European Commission (EC) and the World Wildlife Fund (WWF).

Table 1. **Methodology for Evaluating the Environmental Impact of Liberalization of Services**

CEC	OECD	EC	WWF
	1. Scoping service sectors for their environmental impacts	1. Definition (causal chain analysis) and identification (process) of the sectors and subsectors to be studied	1. Purpose and focus
2. Selection of specific topics of study in or between sectors	2. Building scenarios for trade liberalization for services	2. Detailed assessment (assuming the fullest practicable extent of service sector liberalization)	2. Context
3. Establishment of the links of each sector or topic with NAFTA	3. Screening of the environmental effects associated with specific trade-induced economic changes	3. Assessment of alternative and environmental impacts	3. Linking services to liberalization
4. Examination of the four processes by which the provisions and institutions of NAFTA affect the environment	4. Assessment of the regulatory effects of evolving multilateral trade rules	4. Monitoring and post-evaluation proposals	4. Linking liberalization of services to sustainable development
	5. Selection of the environmental effects according to their importance		
	6. Definition of appropriate corrective measures		

Source: Prepared for the case of the OECD, EC and WWF with data from Mayrand, K. and Paquin, M. (2007), and for the case of the CEC with data from the CEC Analytic Framework (1999). See <http://www.unisfera.org/?id_article=405&pu=1&ln=0> for the former.

This study uses the CEC Analytic Framework (1999), which provides a series of steps and various questions, including legal, economic, institutional, social, political and ecological issues, to be answered using quantitative (statistical comparisons) or qualitative methods. For further information on the methodology, see Exhibit 1.

To assess the relationship between tourism and trade, we reviewed the definitions under the General Agreement on Trade in Services (GATS) definitions and classifications, analyzing two modes of supply: 1) through US and Canadian foreign direct investment, and 2) through the flow of those countries tourists to Mexico.

For both analyses, we consulted primarily work and available literature on US-Mexico trade relations, using statistical data on investment and tourist flows from official US and Mexican government websites, as well as data from other international organizations such as OECD, the UN World Tourism Organization (UNWTO), and others. We analyzed rates of change from the years before and after NAFTA's entry into force, to determine whether the change was material and whether it could be attributed to the agreement alone or to other variables as well.

For the part relating tourism to the environment, we consulted available literature on documents and studies that make such a connection in general terms. We conducted a qualitative analysis to identify the key impacts of tourism activities and reviewed the provisions addressing such impacts.

Lastly, to set out the relationship between trade, tourism an the environment, we estimated an economic and ecological overview of a specific tourist destination in Mexico, calculating the economic benefit of the consumption of goods and services and comparing it against the impact of environmental goods and services consumption.

3. LIMITATIONS AND DELIMITATIONS

A major limitation to the qualitative and statistical analysis was the availability of data. For US and Canadian investment in Mexico, Mexican information sources before and after 1994 are not comparable because of the different methodologies applied in each period. On the other hand, information from US sources is not comparable to Mexican source information, as the numbers vary significantly.

This limitation is acknowledged in the CEC Analytic Framework (1999), generally as the absence of reliable comparative baseline data; as regards foreign direct investment (FDI) in particular, the differences in measurement criteria between the United States and Canada on the one hand (whose data examine actual transfers), and Mexico on the other (which measures approvals), makes direct comparison difficult.

Given the limited availability of data, the study focuses solely on the tourism subsector represented by hotels and restaurants. Other tourism subsectors not included in the quantitative analysis are travel agencies, group travel organizations and tour guide services.

4. INTERNATIONAL TRADE IN SERVICES

4.1. Service Sector Involvement in International Trade

The General Agreement on Trade in Services (GATS) is part of the World Trade Organization (WTO), and has been a key factor in the globalization and inclusion of services in international trade dynamics and the economic development of Western countries, which are primarily concerned with trade in goods (Meyer 1998).

GATS includes the liberalization and international regulation of services in this process, such as banking, insurance, transportation, telecommunications, healthcare, education, professional services, and tourism. A detailed classification (W120) is included as Exhibit 2 of this study. The definition of "services" includes any service in any sector other than government services. The so-called "modes of supply" are:

1) Cross-border supply, defined as the offer of a service from the territory of one member country to the territory of another member country.

2) Commercial presence, understood as the offer of a service by a service provider in a member country, through a commercial presence in the territory of another member country.

3) Presence of a natural person, understood as the possibility that individuals have access to enter and stay in other countries to render a service, either individually or as part of the personnel employed by the service provider.

4) Consumption abroad, defined as the activity of consumers who travel abroad and purchase services.

Trade agreements developed under the WTO framework focus on a number of simple, fundamental principles governing the multilateral trade system, such as *nondiscrimination* (including "*most favored nation treatment*" and "*national treatment*"), free trade, foreseeable practices, promotion of competition, and special provisions for less developed countries.

4.2. Tourism as a Service in International Trade

The World Trade Organization (2003) describes tourism as the most ubiquitous and significant sector of world trade, and a complex and crosscutting service industry equaling or outperforming agriculture petroleum and automobiles in world exports, and thus should be given an increased consideration.

According to Meyer (1998), international tourism accounts for approximately five percent of world trade and from 25 to 30 percent of the worldwide trade in services. However, nearly all multilateral and bilateral trade agreements fail to include an express reference to tourism services; not even GATS has a special annex for tourism. Organizations such as WTO, UNWTO and the United Nations Conference on Trade and Development (UNCTAD) have begun to draft a tourism annex to GATS reflecting the specificity of the product and its relationship with other sectors, although little progress has been reported (WTO 2003).

Meyer (1998) explains that tourism was "internationalized" before the process to liberalize the trade in goods and services in the 1990s and, therefore, its growth does not depend on the elimination of all barriers to trade. Tourism was internationalized before the Uruguay Round negotiations, and was easy to move up on the list of commitments. In this regard, it could be said that the commitments assumed by the countries in this sector led to the formalization and legalization of the status quo. According to the WTO (2002), tourism is more liberalized than other services, with a high level of GATS commitments.

The trade in tourism services involves access to foreign markets by consumers and businesses, as follows based on the four modes of supply:

a) Cross-border supply through tourism operators and travel agents providing services across borders.

b) Commercial presence through tourism operators, travel agents, airlines, car rental agencies, hotels and restaurants, operated through a branch, affiliate or other forms of commercial presence.

c) Presence of a natural person by way of tour guides, hotel managers and other support personnel required to perform a specific service.

d) Consumption abroad by tourists visiting other countries.

The World Trade Organization recognizes that unlike the international trade of goods, services are not divided into a multidigit tariff classification like the harmonized system, and the cross-border exchange of services is not as easy to track (WTO 2002). According to Meyer (1998), under GATS tourism is a poorly defined and disperse sector, hindering a more comprehensive focus and the proper articulation of the sector's interests. From an UNWTO point of view, this classification reduces the potential liberalization of tourism, since it does not show key elements and does not represent the sector's day-to-day reality (WTO 2003). Exhibit 2 of this study shows that the classifications for other services are much more detailed. Part 9 of the W120 list (Tourism and Travel Related Services) includes:

- Hotels and restaurants (including catering)
- Travel agencies and tour operators services
- Tourist guides services
- Other (not specified)

As noted by Meyer (1998), the GATS paradox concerning tourism is that while consumption abroad is the most important mode of supply of tourism services with respect to international visitors, the GATS scope is primarily geared toward business.

The assertion that the sector was already internationalized when the international trade in services was liberalized, and therefore had a merely formalizing effect, may apply to the case of Mexico. Before NAFTA entered into force, Mexico was already endeavoring to create an attractive economy for the international trade in services. In the particular case of tourism, Mexico has also historically promoted the sector as a national priority to contribute to the country's economic and social development. Thus this study will determine the impact of NAFTA on the development of the sector in Mexico, isolating the effect of other related variables.

5. TRADE IN SERVICES AND TOURISM IN MEXICO

To determine NAFTA's impact on the tourism sector in Mexico, we refer to the *Commercial Presence* mode of supply, measuring FDI in the service sector, in general, and for tourism, in particular. To analyze FDI in the tourism sector, we use the W120 classification as a reference, focusing primarily on hotels and restaurants.

NAFTA uses a so-called "negative list" approach, where all service transactions may be carried on freely, without restriction for foreign suppliers in the other Parties' markets, except for those services listed with exceptions in the Annexes (Stephenson, S., and Contreras, P., 2001). As no reservations are included in the Annexes, Chapters 11 and 12 apply to tourism in their entirety.

5.1. NAFTA and Tourism, Chapter 11

Chapter 11 (Investment) establishes that Parties are to provide greater guarantees to investors from the other Party countries, such as:

1. **National treatment.** Article 1102 establishes that no less favorable treatment shall be granted to investors and investments from other Parties than to nationals of the country at issue, and that a minimum level of national shareholding may not be set for an enterprise established in the territory of another Party.

2. **Most favored nation treatment.** Article 1103 provides that investors and investments shall receive a treatment no less favorable than those from any other non-Party country.

3. **Standard of treatment and minimum standard of treatment.** Articles 1104 and 1105 establish that investments must be treated pursuant to international law, including fair and equitable treatment, and full protection and security.

4. **Performance requirement.** Article 1106 provides that investors shall not be subject to any commitment or undertaking to determine levels or percentages of exported goods or services, domestic content, components, values and amounts, among other things.

5. **Expropriation and compensation.** Article 1110 provides that investments cannot be expropriated or nationalized except in specific cases such as expropriation for public purposes, nondiscriminatory bases and with payment of compensation.

Under NAFTA Article 1110, an investment may be expropriated when in the public interest and is not on a discriminatory basis, provided that fair compensation is made. Such compensation must be equal to the fair market value immediately before the expropriation took place.

If a Party investor is subject to expropriation of its investment by a NAFTA country, it must first seek remedy through negotiation. However, at any time, NAFTA entitles the Party to request arbitration provided that it gives written notice of its intent. The Panel may rule for investor compensation (compensatory damages only, and not punitive damages, interest or other costs) and cannot compel the Party subject to dispute to change its laws (Meltz, 2001).

NAFTA Article 1139 defines "investments" as an enterprise, equity shares in an enterprise, debt securities in an enterprise, a loan to an enterprise, an interest in an enterprise entitling the owner to share in the income or profits of the enterprise, real estate or other tangible or intangible property acquired or used for an economic benefit or other business purposes, concessions, construction or turnkey contracts, and the production, income or profits of an enterprise.

It should be noted that there are 15 US and Canadian investor disputes against Mexico, six of which were already subject to Panel decisions. The rest are currently in arbitration or notices of intent have been submitted; see Exhibit 3. These cases include three relating to tourism projects, referring to the acquisition of property in Mexican beach zones by US investors, expropriated by Mexico and for which an indemnity was sought. These cases are: 1) Robert J. Frank, investor in a beach property expropriated by Mexico, who sought an indemnity of $1.5 million dollars; 2) Billy Joe Adams, investor in a tourism development project—facility development and maintenance, which was expropriated by Mexico and for which a $75 million dollar indemnity was sought; and 3) Calmark Commercial Development Inc., investor in a tourism project for which Mexico did not allow the repatriation of the investment upon sale, seeking an indemnity of $400,000 dollars. For purposes of this study, the cases are evidence of both US FDI in Mexican tourism projects and the application of NAFTA Chapter 11 for the resolution of disputes between investors and Party countries with respect to tourism-related real estate.

While Mexico was seen as one of the most open and deregulated developing economies, facilitating FDI even before NAFTA, US and Canadian investors were afforded greater investment protections under Chapter 11. According to a report to the US Congress on the protection of foreign investors under NAFTA Chapter 11 (Meltz 2003), the Agreement is unlike any other treaty signed, as it includes a mechanism to resolve disputes between investors and Party states through arbitration.[1]

5.2. NAFTA and Tourism, Chapter 12

Chapter 12 addresses the measures adopted or maintained by a Party with respect to the cross-border trade in services performed by service providers from another Party, including:

a) Production, distribution, marketing, sale and performance of a service;

b) Purchase, use or payment of a service;

[1] A major Chapter 11 issue in the United States is whether the arbitration mechanism is a threat to its sovereignty, as NAFTA arbitration panels are empowered to review US court decisions. Another issue is whether this prerogative for foreign investors is greater the rights accorded to national investors under US law.

c) Access to and use of distribution and transportation systems relating to the performance of a service;

d) Presence of another Party's service provider in its territory; and

e) Posting of a bond or other form of financial guarantee, as a condition for the performance of a service.

For the purposes of this study, it is important to note that Chapter 12 does not refer to air services, including national and international air transport services, or auxiliary support services other than certain repair and maintenance services.

Like the Investment chapter, this chapter confers the benefits of national treatment, most favored nation treatment and treatment rules to national of the different Parties. It further establishes local presence measures such as that no Party may require that a service provider from another Party establish or maintain an office of representation or any kind of company, or that it reside in its territory as a condition for the cross-border rendering of the service.

5.3. NAFTA and Tourism, Annex Reservations

Mexico's list in Annex 1 contains a national treatment reservation in all sectors, for foreigners, foreign enterprises or Mexican companies without an exclusion-of-foreigners clause, which may not acquire direct ownership of land and waters in the restricted zone, defined as a 100-kilometer strip along the border and a 50-kilometer strip from Mexican coastlines. Such persons may only acquire "Certificates of Real Estate Participation" (*Certificados de Participación Inmobiliarios*—CPIs),[2] granting the right to use, enjoy and operate property. As this reservation applies to all services, the tourism sector is directly affected. Mexico's Foreign Investment Act (*Ley de Inversión Extranjera*) recognizes this restriction on foreign ownership in the restrict zone in Article 10, providing measures to allow the commercial exploitation of property through third parties. Investor claims against Mexico's expropriation of their properties may be affected by this provision.

There is another reservation regarding national treatment and local presence under industry classification CMAP 711318 (School and Tourism Transportation Service), as it refers to tourism transport, whereby only Mexican nationals and Mexican companies with an exclusion-of-foreigners clause may provide such services. The reservation is backed by Article 6 of the Foreign Investment Act, which provides that the domestic ground transportation of passengers, tourists and freight (not including messenger and packaging services) is exclusively limited to Mexicans or Mexican companies with the exclusion-of-foreigners clause.

Considering that Mexican tourism activities are concentrated in coastal zones, we refer to the restrictions on foreign direct investment in those areas. Here, we find that NAFTA does not assure national treatment or make any exception to investment in general and tourism investment in particular along the coasts. However, we did find evidence of FDI in hotels in

[2] CPIs are isued by Mexican financial institutions authorized to acquire property rights through a trust, intended for industrial and tourism activities in the restricted zone for a period of not more than 30 years, subject to renewal.

the restricted zone. Also, as seen below, in practice the Secretariat of Tourism (*Secretaría de Turismo*—Sectur) has promoted FDI by offering several incentives to investors.[3]

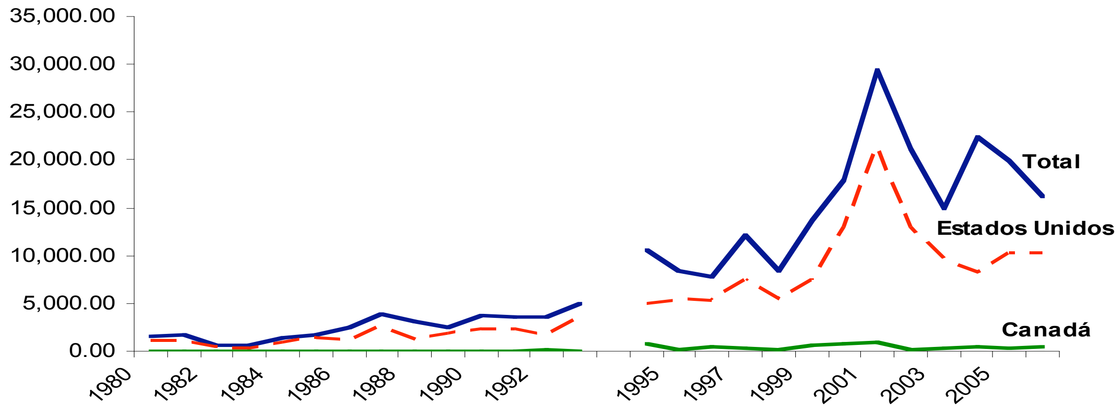
5.4. Foreign Direct Investment in Mexico

In Mexico, the Secretariat of the Economy (*Secretaría de Economía*), through the General Foreign Investment Bureau (*Dirección General de Inversión Extranjera*), is responsible for processing statistical information on the performance of other countries' investments in different Mexican sectors. The data reported from 1980 to 1993 was calculated using a methodology based on investments reported to the National Foreign Investment Registry (*Registro Nacional de Inversiones Extranjeras*—RNIE), regardless of the investment date. Starting in 1994, figures are reached based on investments reported to the RNIE, and materialized in the year of reference. With the limitation posed by such change in methodology, we used Mexican information sources to reach some conclusions. We also consulted US source data to determine whether these conclusions might be comparable.

As seen in Table 2, FDI in 1980 totaled 1.622 billion dollars, with 66.47 percent from the United States and 1.08 percent from Canada. At the end of this first period (1993), FDI was 4.9 billion dollars, of which 71.49 percent was from the United States and 1.5 percent was from Canada. In the second period, 1994 begins with a total FDI of 10.646 billion dollars, with 46.65 percent from the United States and 6.96 percent from Canada—the highest of all years. In other years, the top US proportion was 72.66 percent (2000) and Canada's 1.05 percent was the lowest in 2002. Figure 1 graphs how US FDI influences overall FDI in Mexico, but not investment from Canada.

[3] It is interesting to note the different strategies employed by the United States and Mexico to attract FDI. In the United States, states may offer packages including such features as infrastructure improvements (roads, water treatment plants, etc), services (employee training), tax incentives and access to bank loans for companies doing business in their territories (Ventriss, C., 1994). In Mexico, this strategy is a federal matter, and states are prevented from offering tax incentive packages.

Figure 1. Foreign Direct Investment in Mexico, US and Canadian Share, 1980–1993 and 1994–2006 (millions of dollars)



Source: Data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

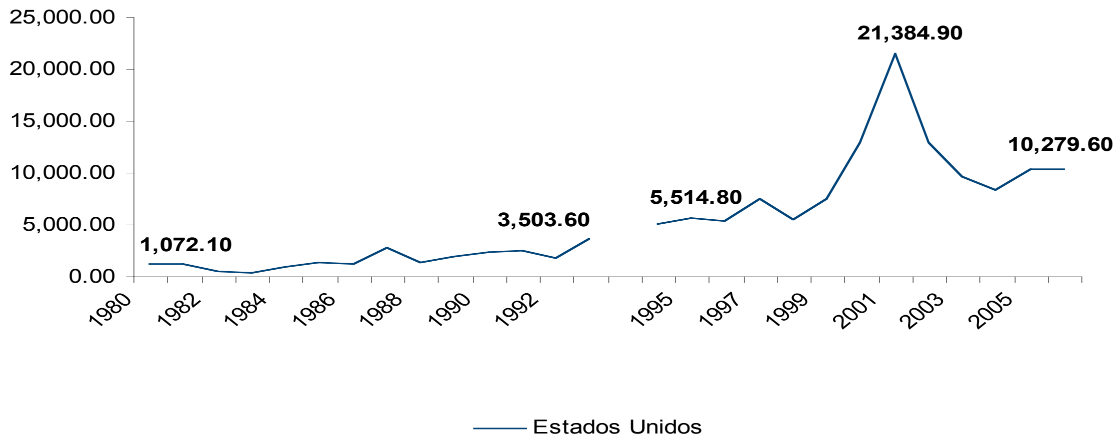
As regards US FDI in Mexico, the trends seem to be comparable in the 1980–1993 and 1994–2006 periods. We might assume that FDI increased after 1994, but as explained before, due to the change in methodologies this assumption cannot be made.

Error! **Table 2. Data on Foreign Direct Investment in Mexico, US and Canadian Share in 1980–1993 and 1994–2006**

Year	TOTAL[a/] (Millions of dollars)	US (Millions of dollars)	Percent change	Total (%)	CANADA (Millions of dollars)	Percent change	Total (%)
1980	1,622.60	1,078.60		66.47	17.5		1.08
1981	1,701.10	1,072.10	-0.01	63.02	5.2	-0.70	0.31
1982	626.5	426.1	-0.60	68.01	8.1	0.56	1.29
1983	683.7	266.6	-0.37	38.99	22.1	1.73	3.23
1984	1,429.80	912.0	2.42	63.79	32.5	0.47	2.27
1985	1,729.00	1,326.80	0.45	76.74	34.9	0.07	2.02
1986	2,424.20	1,206.40	-0.09	49.76	40.6	0.16	1.67
1987	3,877.20	2,669.60	1.21	68.85	19.3	-0.52	0.50
1988	3,157.10	1,241.60	-0.53	39.33	33.9	0.76	1.07
1989	2,499.70	1,813.80	0.46	72.56	37.5	0.11	1.50
1990	3,722.40	2,308.00	0.27	62.00	56.0	0.49	1.50
1991	3,565.00	2,386.50	0.03	66.94	74.2	0.33	2.08
1992	3,599.60	1,651.70	-0.31	45.89	88.5	0.19	2.46
1993	4,900.70	3,503.60	1.12	71.49	74.2	-0.16	1.51
		Change in methodology (data not comparable between these periods)					
1994	10,646.90	4,966.50		46.65	740.7		6.96
1995	8,374.60	5,514.80	0.11	65.85	170.5	-0.77	2.04
1996	7,847.90	5,281.10	-0.04	67.29	542.4	2.18	6.91
1997	12,145.60	7,420.30	0.41	61.09	240.5	-0.56	1.98
1998[p/]	8,373.50	5,467.00	-0.26	65.29	215.0	-0.11	2.57
1999	13,712.40	7,433.10	0.36	54.21	625.3	1.91	4.56
2000	17,942.10	12,854.90	0.73	71.65	704.3	0.13	3.93
2001	29,430.80	21,384.90	0.66	72.66	992.2	0.41	3.37
2002	21,096.70	12,918.50	-0.40	61.23	221.2	-0.78	1.05
2003	15,006.70	9,614.70	-0.26	64.07	258.3	0.17	1.72
2004	22,469.50	8,290.50	-0.14	36.90	475.3	0.84	2.12
2005	19,880.90	10,239.50	0.24	51.50	301.3	-0.37	1.52
2006	16,119.40	10,279.60	0.00	63.77	515.5	0.71	3.20

Developed with data calculated by INEGI, using data from the General Office of Foreign Investments at Mexico's Ministry of Economy. As indicated by source a/: for the 1994-1998 period, Foreign Direct Investment (FDI) consists of the amounts reported to the National Registry of Foreign Investments (*Registro Nacional de Inversiones Extranjeras*—RNIE) up until 30 June 2007, and realized in the year of reference, plus fixed asset imports by maquilas. Beginning in 1999, also included are new investments, with the exception of social capital, reinvestment of profits, and accounts between companies that have been reported to the RNIE. Also not included is an estimate of FDI realized but not yet reported to the RNIE. In line with international practices, the sum of partial percentages may differ from the corresponding totals or subtotals, since numbers are automatically rounded off in the spreadsheet.

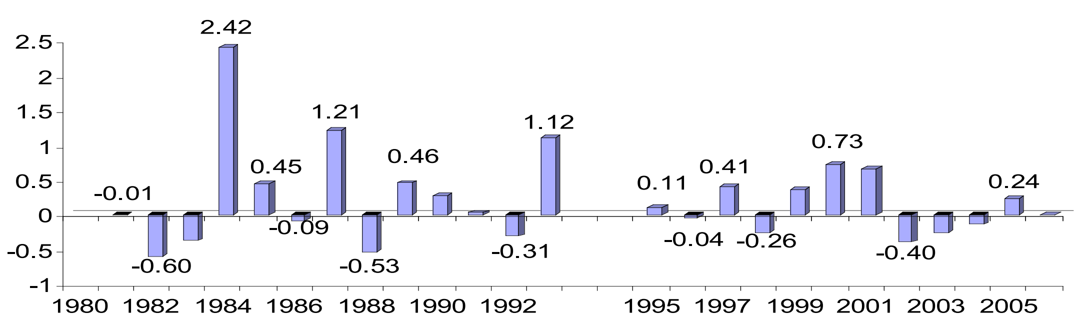
Figure 2. **US Foreign Direct Investment in Mexico, 1980–1993 and 1994–2006 (millions of dollars)**



Source: Data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

To determine the rate of change from period to period, we note that in the first period (1980–1993) changes fluctuated, with negative changes of up to 63 percent (1.072 billion in 1981 to 426 million in 1982. We also find that the highest change is 242 percent, going from 683 million in 1983 to 1.429 billion dollars in 1984 (see Figure 3 with data from Table 2).

Figure 3. **Percent Change in US FDI in Mexico, 1980–1993 and 1994–2006**



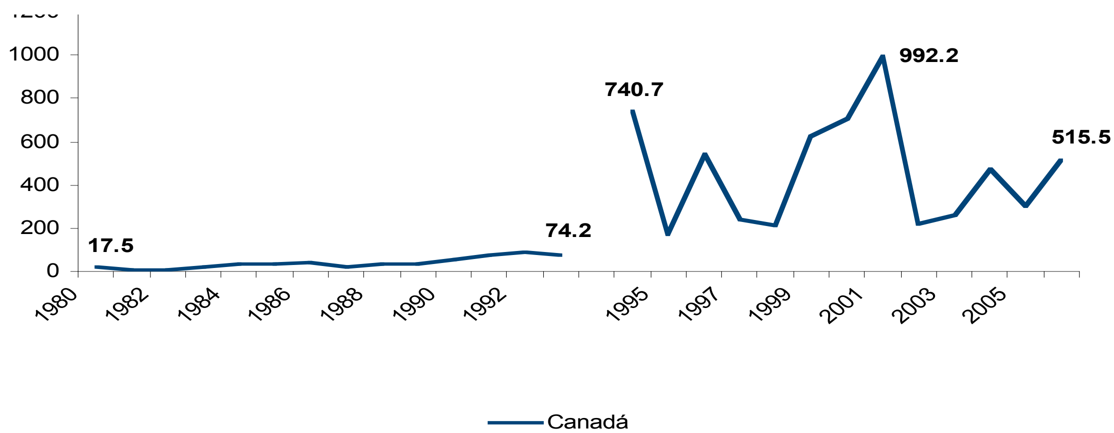
Source: Calculated with data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

Percent changes in the second period are less pronounced but likewise fluctuate between negative and positive. The most significant negative change is 40 percent, from 21.384

billion in 2001 to 12.918 billion dollars in 2002. The most significant positive change was 73 percent, from 7.433 billion in 1999 to 12.854 billion dollars in 2000.

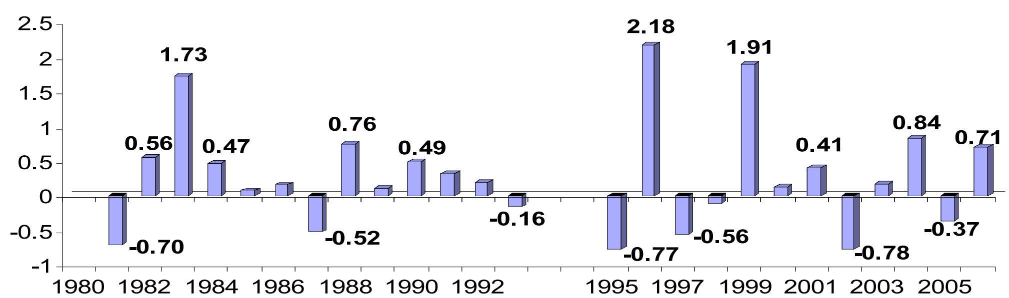
In the case of Canadian FDI in Mexico, clearly the data from the 1980–1993 and 1994–2006 periods are not comparable, and it cannot be assumed that the situation post-1994 was due to NAFTA. As seen in Figure 4, figures for the first period start (in 1980) with 17.5 million dollars and end in 1993 at 74.2 million dollars. In the following period, 1994 begins at 740.7 million dollars and 2006 ends with 515 million dollars.

Figure 4. Canadian Foreign Direct Investment in Mexico, 1980–1993 and 1994-2006 (millions of dollars)



Source: Calculated with data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

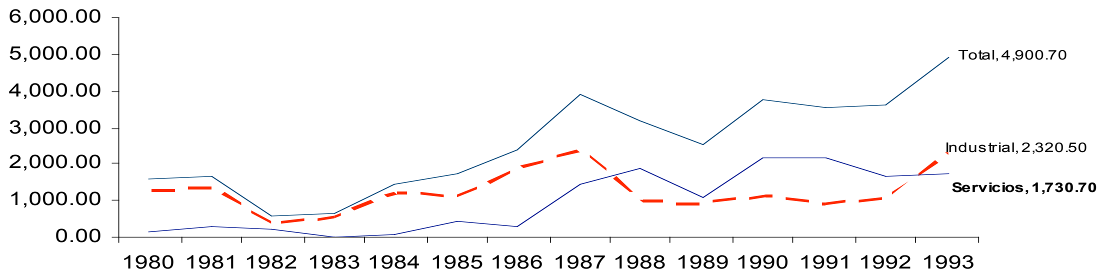
Figure 5. Percent Change in Canadian FDI in Mexico, 1980–1993 and 1994–2006



Source: Calculated with data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

Percent change (**Figure 5**) in the first period was mostly positive, the highest being 173 percent (from 8.1 million dollars in 1983 to 22.1 million dollars in 1984). The most significant negative percent change was 70 percent, dropping from 17.5 million in 1980 to 5.2 million dollars in 1981. The second period begins with a negative change of 77 percent, from 740 million in 1994 to 170 million dollars in 1995. However, the most significant positive change is seen the following year, with a 218 percent increase to 542 million dollars in 1996.

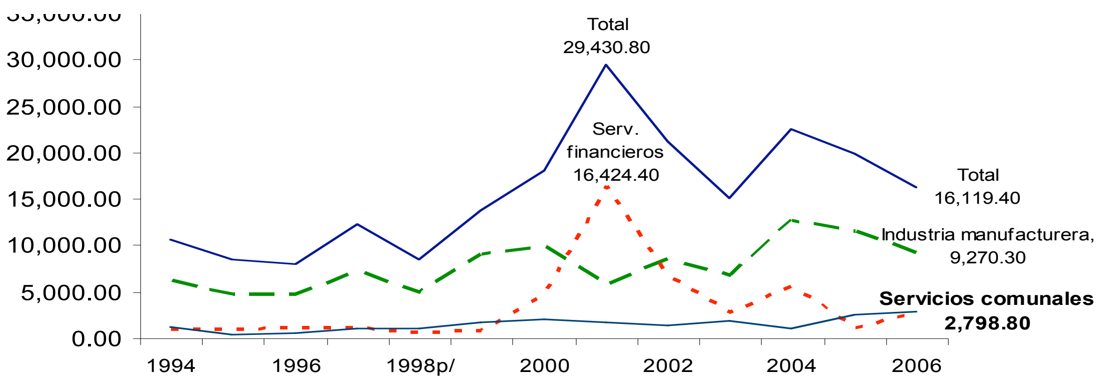
Figure 6. Distribution of FDI in Mexico by Sector, 1980–1993 (millions de dollars)



Source: Calculated with data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

A sector-by-sector analysis indicates that in the first period (1980–1993) FDI was concentrated in the industrial sector (including maquiladoras), while the service sector (including common and social services such as hotels and restaurants and professional, technical and personal services) had a smaller share in some years and a greater share in others, following the same trend as investments as a whole. See **Figure 6**. For the second period (1994–2006), financial services are included separately, with industry still holding a greater proportion of FDI and common services holding a proportionally smaller share. See **Figure 7**. This trend has already been identified in the CEC Analytic Framework (1999).

Figure 7. Distribution of FDI in Mexico by Sector, 1994–2006 (millions of dollars)



Source: Calculated with data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

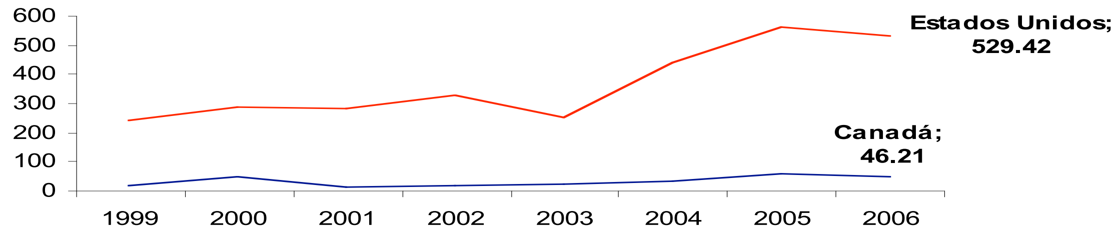
Historically, tourism has been a national priority for Mexico to promote development and increase its foreign currency intake. The development of tourism centers has been promoted since the 1950s, especially in Mexico's beach zones.

Article 2 of Mexico's Federal Tourism Act (*Ley Federal de Turismo*), published in the Federal Official Gazette on 31 December 1992, provides that the principal objective of the Act is to promote domestic and foreign investment.

Mexican foreign investment laws provide legal guarantees to provide certainty to Mexican and foreign investors. The Sectur website states that Mexico is "simplifying the administrative procedures to register foreign investments and to freely repatriate earnings, royalties, dividends and interest payments, among other things." It further states that "Mexico also offers advantages to foreigners in the price of land, construction and maintenance costs, facilitated vehicle and ship importations, among other advantages" (Fonatur 2006, 2007).

The Economy Secretariat offers publicly available data on per-country and per-sector FDI from 1999, but states that the information is to be used for statistical purposes only and not as an official report. See **Figures 8** and **9**. This study regards such data as evidence of US and Canadian FDI in the Mexican tourism sector, with a qualification for the accuracy of the amounts reported. No comparative analysis is made with respect to pre-NAFTA years.

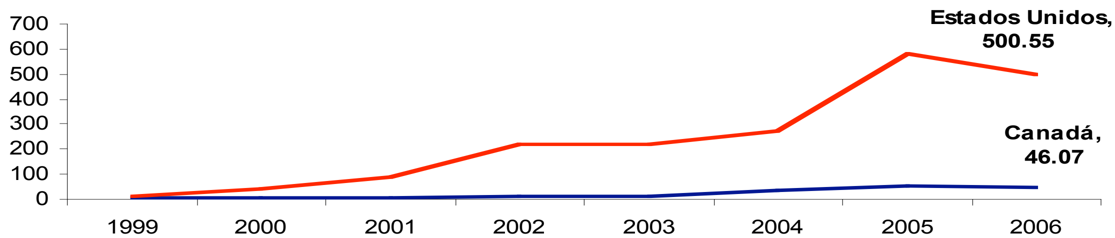
Figure 8. **US and Canadian FDI in Mexico in the Service Sector (Hotels and Restaurants), 1999–2006 (millions of dollars)**



Source: Derived from data from the Secretariat of Economy (General Directorate of Foreign Investment)

As mentioned in the discussion of Mexico's Annex reservations, there is a reservation preventing national treatment of investments in the restricted zone. However, as noted, the Foreign Investment Act allows foreigners to invest in the zone through trusts or third parties. In this regard, **Figure 9** shows that the United States and Canada alike have invested in hotels in the Mexican restricted zone. A comparative analysis of NAFTA's impact is not made because the conditions for investing in the restricted zone were not affected by the Agreement.

Figure 9. **US and Canadian FDI in Mexico in Hotels in the Mexican Restricted Zone, 1999–2006 (millions of dollars)**

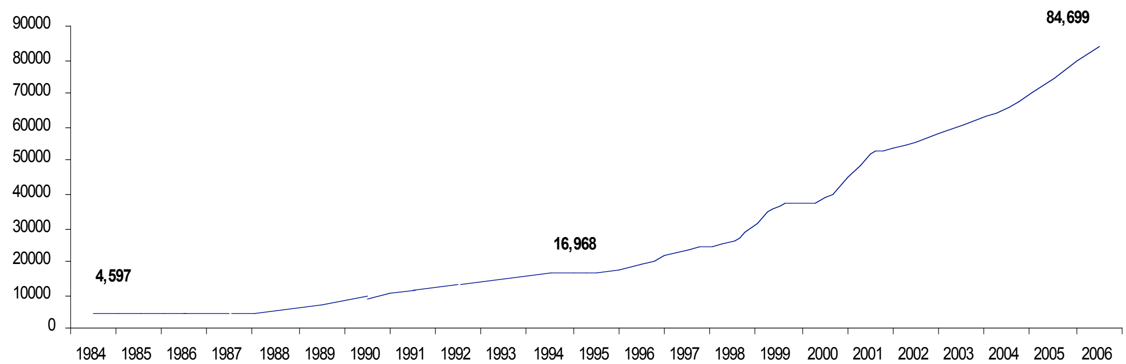


Source: Calculated with data obtained by INEGI with information from the Secretariat of Economy (General Directorate of Foreign Investment)

As this study is with respect to Mexico, we analyzed figures reflected in Mexican information sources. Due to the inconsistencies and limitations to conducting a comparative analysis for pre- and post-NAFTA years, we also used US information sources to complete a matrix. The results are graphed in **Figure 10**. We obtained data primarily from different years' reports from the US Congressional Research Service, which show a growing trend.

In 1984 FDI totaled 4.597 billion, while 10 years later (1994, when NAFTA entered into force) FDI was 16.968 billion dollars. The 2006 figure grew by 400 percent.

Figure 10. US FDI in Mexico (millions of dollars)

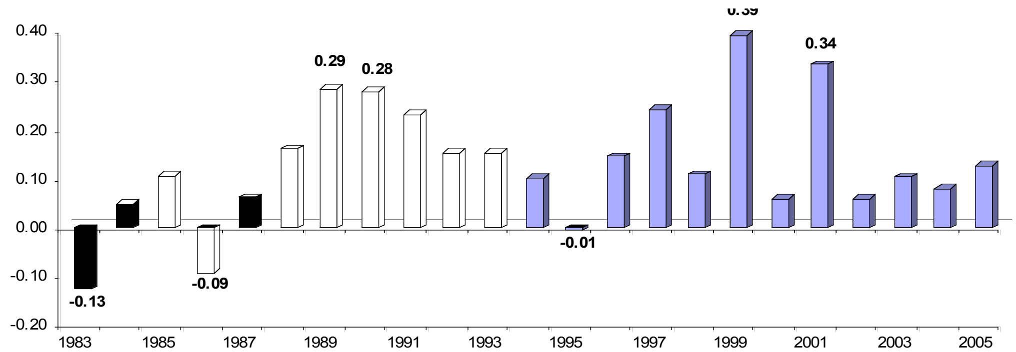


Source: Derived from CRS[4] data.

The rates of change from 1983 to 1993, shown in **Figure 11**, were negative only in 1983 and 1986, and were positive by up to 29 percent in later years. Following NAFTA's entry into force in 1994, there was a 0.10 percent decrease in 1995, but then FDI increased each year thereafter. The most significant percent change was in 1999, at 39 percent.

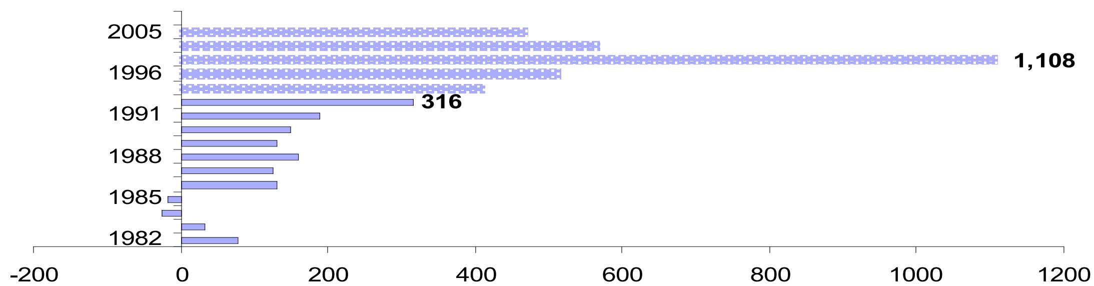
[4] Sources: Figures from 1982 to 1991 are from Congressional Research Service (CRS) 1993 (93-522 E); the 1992 figure is from the CEC Analytic Framework 1999; the 1993 figure is from CRS 1995 (95-204 E); the figure for 1995 is from CRS 1996 (96-91), the figure from 1998 is from CRS 2000 (98-949 E), the 2004 figure is from CRS 2006 (RS21118), the 2005 figure is from CRS 2007 (RS21118), the 2004 figure is from the CRS Report for Congress US Direct Investment Abroad 2006. The data for 2005 and 2006 are from Direct Investment Positions for 2006, July 2007.

Figure 11. Annual Rates of Change of US FDI in Mexico, 1983–2006



Source: Calculated from data in Figure 10.

Figure 12. US FDI in Mexico in the Service Sector (millions of dollars)



Source: Derived from data from the CRS.[5]

Publicly available data from US sources show the FDI allocated to the service sector for some years, without specifying tourism and related activities. **Figure 12** shows how the amounts have increased in post-NAFTA years, potentially leading a qualified assumption that the proportion corresponding to tourism would have increased. However, as seen, the amounts decrease after 1997, and therefore we cannot conclude that NAFTA intensively furthered investment in service sectors, specifically tourism.

[5] Sources: Figures for 1982 to 1991 are from CRS 1993 (93-522 E); the 1993 figure is from CRS 1995 (95-204 E); the 1995 figure is from CRS 1997 (95-204 E); the 1996 figure is from CRS 1997 (97-328); the 1998 figure is from CRS 2000 (98-949); the figure for 2004 is from CRS 2006 (RS21118); and the figure for 2005 is from CRS 2007 (RS21118).

Moreover, the CEC Analytic Framework (1999) shows that the target of US FDI in Mexico is manufacturing, followed by commerce and finance, and restaurants and hotels to a much lesser extent. See **Table 3**.

Table 3. Principal Destinations of US FDI in Mexico, 1989–90, 1991–94, and 1995–98 (accrued investment flows in billions of US dollars)

	1989–90	1991–94	1995–98
Manufacturing	1.1	4.0	12.4
Processed food, beverages, tobacco	0.2	1.5	2.3
Textiles	0.0	0.4	n/a*
Chemicals	0.3	0.6	0.7
Metallic goods, machinery	0.4	1.1	1.9
Trade	0.4	1.6	2.6
Finance	0.6	0.2	2.6
Real estate	1.2	0.5	0.1
Restaurants, hotels	0.4	1.2	0.3
Professional services	0.2	1.7	0.2
Total	4.1	11.5	19.8
*n/a = not available			

Source: CEC Analytic Framework (1999), from Mexican Ministry of Commerce and Industry

According to Mexican information sources, we may conclude that US FDI in Mexico represents 72 percent of total investment, while Canada accounts for a maximum of 6.96 percent. The distribution of FDI by sectors indicates that more investment goes to the manufacturing industry, while services as a whole (including not only hotels and restaurants but also technical and professional services) have a proportionally smaller share. According to US information sources, FDI in Mexico has grown since NAFTA, although the service sector share has not grown but rather fluctuates, even after NAFTA.

From 1994 to 1998, Canadian investment in Mexico represented just four percent of the country's total foreign investment, concentrated in the manufacturing sector, financial services and mining, in operations mostly located along the US-Mexican border (Deblock 2002). This study finds that not all changes in trade and investment patterns between the United States and Mexico may be attributed to NAFTA, as there are other unrelated variables such as variations in US economic growth and currency fluctuations. There are studies on investment in the Mexican tourism sector showing that during the 1970s, traditional hotel groups invested in tourism (Jimenez 1998). By the 1980s, with Mexico's entry into GATT, protectionist barriers came down and made way for diversified foreign investment in Mexico, including the tourism sector. Mexico's deregulation and facilitated access to foreign investors in the pre-GATT years should not be overlooked. A report prepared for the US Congress explains that Mexico's liberalization of foreign investment rules, combined with economic improvements in the country, were important incentives for US investors, and that as long as these conditions continued, US investors would continue to invest in Mexico whether or not the free trade agreement were signed (Jackson, 1993). Studies on US-Mexico economic relations (Ros 1992; Tamayo-Flores 2001; and Villarreal 2005) posit that the increase in US investment in Mexico from 1994 to 2004 is the result of Mexico's liberalization of foreign investment restrictions in the late 1980s and early 1990s. In the mid 1980s, Mexico had a protectionist policy that restricted foreign investment and controlled rates of change as a strategy to promote domestic economic growth. The change to a more open policy in the late 1980s led to an environment attractive to FDI. Thus, NAFTA helped to formalize the policy and increase investor confidence, but was not the engine behind the change.

Up to this point, we have analyzed the relationship between NAFTA and US and Canadian investors in the Mexican service sector, specifically investments in hotels and restaurants. This study also analyzes whether NAFTA has any bearing on the flow of international tourists, i.e., whether NAFTA influences US and Canadian tourists' preferences to visit Mexico.

5.5. Tourism Services in Mexico

Using the GATS definitions, this study analyses the mode of supply known as *Consumption Abroad***,** which is when consumers travel abroad to purchase services (in this case, tourists visiting Mexico). The analysis includes international visitors in general, then focusing on US and Canadian visitors in particular, to determine NAFTA's impact on Mexico's tourist flows.

Mexico has historically been characterized as a favorite destination due to its historical and cultural wealth, crafts and above all its great natural beauty. UNWTO has ranked Mexico 13th among countries with the greatest share of international tourism since the 1950s (2002); in more recent years, Mexico has ranked among the top ten most visited countries worldwide. As seen in **Table 4**, in the years prior to NAFTA, Mexico was already among the top destinations among international tourists.

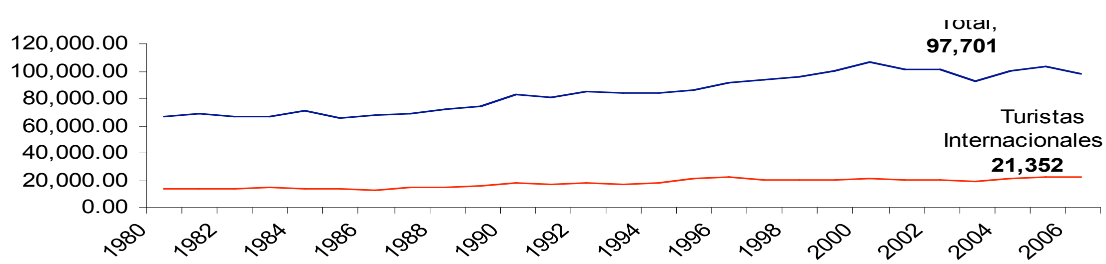
The year NAFTA entered into force, tourism was said to have increased by 11 million dollars from 1988 to 1994. Furthermore, 13 percent of total foreign investment was channeled to the tourism sector, representing 3.2 percent of gross domestic product and employing nearly two million persons (1994 Presidential Address).

Table 4. Mexico's Ranking as an International Tourist Destination, 1950–2006

Year	Millions of visitors	Ranking
1950	N/A	13º
1990	17.1	7º
1992	17.1	8º
1993	16.4	9º
1994	17.2	9º
1995	20.2	6º
1996	21.4	7º
1997	19.4	7º
1998	19.4	7º
1999	19.0	8º
2000	20.6	7º
2001	19.8	7º
2002	19.7	8º
2003	18.7	8º
2004	20.6	7º
2005	21.9	7º
2006	21.4	8º

Source: UN World Tourism Organization

Figure 13. Total and International Tourism in Mexico, 1980–2006 (thousands of persons)

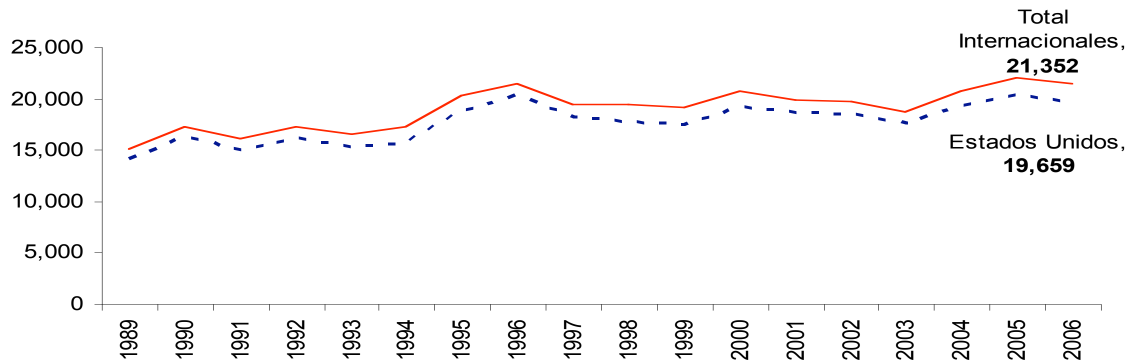


Source: Banco de México

Based on figures from the Bank of Mexico (*Banco de México*) on Mexican tourism as a whole, on average 20 percent is international tourism, as seen in **Figure 13** shows. As

Figure 14 shows, more than 90 percent of international tourists come from the United States.

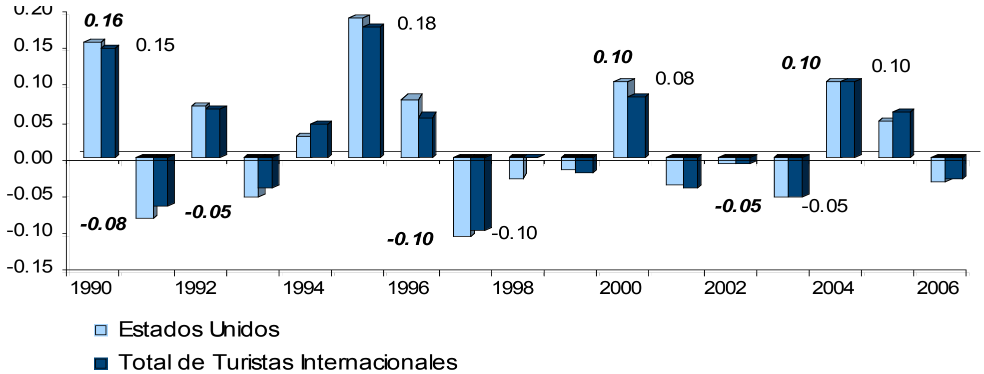
Figure 14. US and International Tourism in Mexico, 1989–2006 (thousands of persons)



Derived from data of the Banco de México for total international tourists. For the case of US tourists in Mexico, data from the Office of Travel and Tourism Industries of the US government were used <http://tinet.ita.doc.gov/outreachpages/inbound.total_intl_travel_volume_1996-2006.html>.

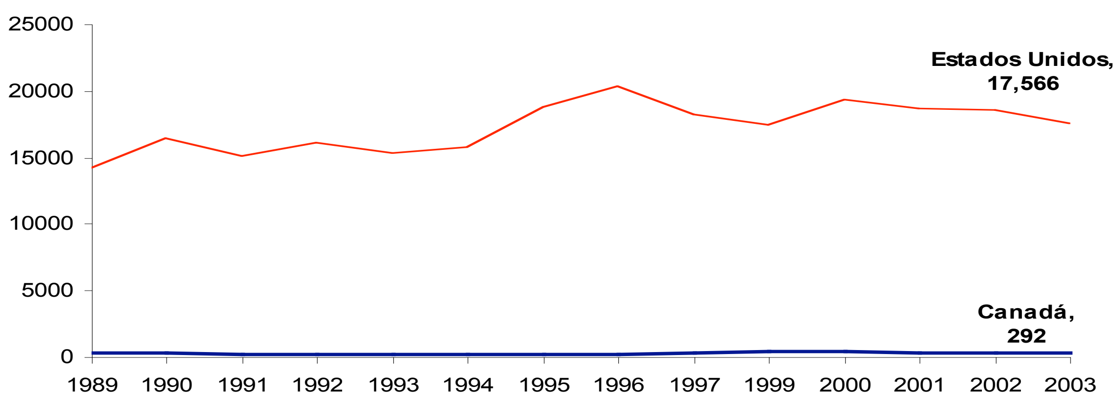
To identify pre- and post-NAFTA tourism flows, we looked at percent changes. **Figure 15** shows a 19 percent increase from 1994 to 1995.

Figure 15. **Percent Change in Total US and International Tourism in Mexico, 1990–2006**



According to statistical data from Mexican sources, international tourism from Canada is proportionally less significant than US source tourism. See **Figure 16**. Although Mexico is a preferred destination among Canadians, a large percentage of foreign trips are to US cities, followed by visits to European countries.

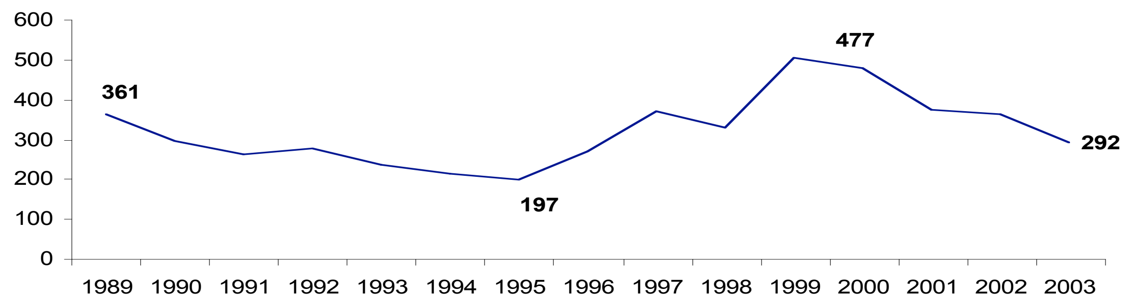
Figure 16. **US and Canadian Tourism in Mexico, 1989–2003 (thousands of persons)**



Source: For Canadian tourists in Mexico, data from the *Informe de Gobierno del Presidente de México* in 1998 and the Banco de México were used. For US tourists in Mexico, data from the US Office of Travel and Tourism Industries were utilized
<http://tinet.ita.doc.gov/outreachpages/inbound.total_intl_travel_volume_1996-2006.html>.

Though tourism from Canada contributes two percent to overall international tourism in Mexico, on a yearly average, **Figures 17** and **18** show a downward trend from 1989 to 1994, recovering from 1995 to 1999, and then falling again thereafter.

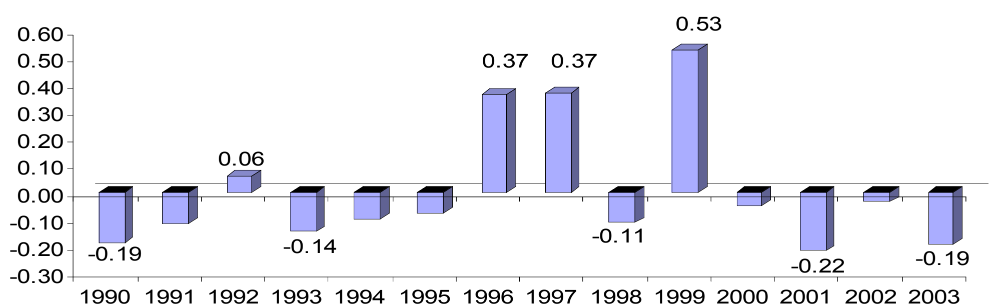
Figure 17. Canadian Tourism in Mexico, 1989–2003 (thousands of persons)



Source: Derived from data of the Secretaría de Turismo and the Banco de México for the *4º Informe de Gobierno de 1998* and data from the World Tourism Organization (Year Book of Tourism).

While it appears that the flow of tourists from Canada to Mexico increased in the years following NAFTA, year-to-year percent changes were positive only three times, with negative changes in all other years.

Figure 18. Percent Change in Canadian Tourism Flows to Mexico



Has NAFTA influenced the preferences of tourists from those countries? Is Mexico a historically attractive destination for US and Canadian tourists? Are there other variables influencing tourist flows into Mexico?

The answer may be yes to all these questions. Tourism in Mexico is mostly from the United States, which has historically had a significant preference for Mexico as a tourist destination. The tourism high seasons in Mexico are Spring Break, summer, and US Christmas vacation (OECD 2001).

The negotiation of NAFTA in the media could have influenced Americans' and Canadians' perceptions of Mexico, making them more like to visit Mexico as a tourism destination. This change may be seen more in the flow of Canadian tourists.

In addition to the liberalization of the tourism service sector, macroeconomic variables such as exchange rates, general price levels and tourism service price levels have had an effect (Meyer 1998). As the 1995 increase in US tourism to Mexico was unique, we may conclude that the variance was more in response to the country's macroeconomic variables. Mexico's 1995 economic crisis caused a 6.2 percent drop in GDP and a 45 percent loss in real peso value (OECD 2001), and thus trips to Mexico were proportionally less expensive than in other years.

Tourism is also sensitive to other external variables, such as the tourists' safety perceptions. One such external variable that significantly affected tourism not only in Mexico but worldwide was the 11 September 2001 attacks in New York and Washington, DC. In the years following 2001, Mexico showed negative changes of up to four and five percent. Also, strict airport security measures have increased the pressure and tension of tourists who fly to their destinations.

Another variable affecting the flow of tourism to Mexico is natural disasters, as foreign tourists' favorite destinations are beaches. In 2005, Mexico fell victim to a hurricane season mostly affecting the Caribbean; in July, Hurricane Emily hit Cancún, while in October, Hurricane Wilma hit Cozumel and Cancún, causing more destruction than Hurricane Gilbert in 1988 (Sectur 2005), leading to reduced tourist flows.

Considering that tourism in Mexico has an economic effect through FDI and foreign currency inflows via spending by international tourists, the next question would be: Are these economic indicators are sufficiently comprehensive to include environmental impact? What impact has tourism development have on the Mexican environment after NAFTA? The answers are addressed in the following section of this study, primarily through an analysis of the provisions of environmental law applicable to tourism in Mexico and the respective influence of NAFTA and its institutions.

6. TOURISM AND THE ENVIRONMENT

The WTO (2003) reports that tourism may be compared with other value-added economic activities, but may be much less destructive and harmful to the natural and human environmental, provided that it is rationally developed and respects site load capacities.

6.1. Tourism and the Environment under NAFTA

As NAFTA Chapter 11 has become a tool for investors in the three countries, offering additional support to their foreign investments in other Parties' territories, NAAEC Articles 14 and 15 have become a tool of expression for any person or organization without a governmental linkage, with respect to the three governments' environmental enforcement failures.

Gaines (2006) reflects on Chapter 11 and the fact that in 2000 only one case dealt with environmental enforcement matters. He argues that the absence of these cases may be because governments have learned to be careful when using environmental arguments to raise discriminatory measures against investors from the Parties, or the unwillingness of foreign investors to spend time and money to recover little compensation. Thus, Chapter 11 might not be the means put business against the environmental rules. In this regard, Chapter 11 is expected to continue as a means to address claims of a truly commercial nature.

While liberalization means a progressive decrease in barriers to the exchange of services between countries, it does not necessarily signify a decreased role of government. On the contrary, governments' environmental policies are essential for liberalization to have a positive effect not only on the economy but on the environment as well (WTO 2002). The CEC Analytic Framework (1999) asks the question: Does NAFTA-associated liberalization affect corporate practice and subsequent government policy by creating an upward movement of environmental standards and regulations toward a common, high, regional norm? It further offers the answer that governments can adjust their policy and regulation to reflect and reinforce this corporate environmental practice.

NAAEC Article 14 provides that the CEC Secretariat is responsible for submissions on the failure to effectively enforce environmental laws. Submissions may be processed if they are filed in the language designated for the respective Party, provide information on the person or organization making the submission (residing or established in the territory of a Party), provide information on the case, refer only to enforcement matters, and communicated to the relevant authorities of the Party. The Secretariat may or may not decide whether the submission warrants requesting a Party response based on whether the submission asserts harm to the submitter, advances the goals of the NAAEC, if other local legal remedies have been used, and whether the submission is drawn from media sources. If a Party response to the submission is requested, the Party must advise the Secretariat within 30 days (60 days in exceptional cases).

NAAEC Article 15 provides that when a submission is deemed to warrant a factual record, the Secretariat will notify the Council (composed of the three countries' environment ministers), which will vote on whether or not to order the development of a factual record. When a factual record is developed, any Party may make observations. A Council vote determines whether or not to make it public.

In this section, the connection between NAFTA, tourism and the environment is made through an analysis of the environmental laws affecting tourism activities, the nonenforcement of which may be asserted through NAAEC Article 14 submissions. The analysis is done by identifying the key environmental impacts caused by tourism activities.

6.2. Tourism and Environmental Law in Mexico

UNWTO states that sustainable tourism should:

- Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
- Respect the socio-cultural authenticity of host communities, conserve their built cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
- Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

In Mexico, Article 2 of the Federal Tourism Act establishes the purpose of the law, including determining the necessary mechanisms for the creation, conservation, improvement, protection, promotion and use of resources and national tourist attractions, preserving their ecological and social balance.

Mexican laws, regulations and standards do not exist solely as an effect of trade and environmental agreements such as NAFTA and NAAEC. The current environmental law framework in Mexico also responds to international commitments forming part of numerous international treaties, in such matters as the prevention of seawater pollution by oil, waste dumping and ships (from 1954 to 1990), and for the protection of internationally important wetlands, particularly aquatic bird habitats (1971), the protection of world cultural and natural heritage (1972), the international trade of endangered species of wild flora and fauna (1973), law of the seas (1982), ozone layer protection (1985, 1987, 1990 and 1992), the transboundary movements of hazardous waste and their disposal (1989), climate change (1992) and biological diversity (1992) (Székely 1990 and SRE 1993).

Environmental law is not organized by economic sector. Rather, it is structured as a function of environmental components, resources and media (Semarnat 2003). Federal laws relating to activities in the tourism sector are:

- General Ecological Balance and Environmental Protection Act (*Ley General para el Equilibrio Ecológico y Protección al Ambiente*—LGEEPA) and the Protected Nature Area and Environmental Impact Regulations thereunder
- General Wildlife Act (*Ley General de Vida Silvestre*—LGVS)
- General Sustainable Forestry Development Act (*Ley General de Desarrollo Forestal Sustentable*—LGDFS) and Regulations
- National Waters Act (*Ley de Aguas Nacionales*—LAN) and Regulation
- General National Property Act (*Ley General de Bienes Nacionales*—LGBN) and the Regulation thereunder on the Use of the Territorial Sea, Navigable Waters, Beaches and Federal Maritime and Coastal Land Zone

- General Waste Prevention and Comprehensive Management Act (*Ley General para la Prevención y Gestión Integral de los Residuos*—LGPGIR)

Exhibit 4 lists the provisions of the Penal Code that penalize certain actions with respect to biodiversity, as well as the Mexican Official Standards (*Normas Oficiales Mexicanas*—NOMs) relating to tourism activities.

The main objective of LGEEPA is to guarantee all persons' right to live in an environment suitable to their development, health and welfare; the preservation, restoration and improvement of the environment; the protection of biodiversity; the establishment and management of protected nature areas; the prevention and control of air, water and soil pollution; and individual or collective involvement in the preservation and restoration of the ecological balance and environmental protection. The Act penalizes the failure to abide by these rules.

LGEEPA provides that the environmental impact assessment (EIA) is a preventive instrument or procedure to determine how works or activities negatively affect the environment, defined as the set of natural and artificial elements and those caused by man, enabling the development of human beings and other living organisms that interact in a given space at a given time. The environment encompasses the landscape, natural resources, communities of flora and fauna, human settlements, historical, cultural and socioeconomic capital, and infrastructure and public and private services.

The existence of legal provisions affecting tourism activities does not necessarily ensure a positive environmental impact. Mexican Official Standard (*Norma Oficial Mexicana*) 022, a controversial rule involving mangrove wetlands, was first issued in April 2003 and amended in May 2004. This amendment is believed to go against the original intent, as it allows an exemption for works and activities begun prior to the modification, provided that the preventive report or environmental impact statement provides offsetting measures to benefit the wetlands, and the corresponding land use change is authorized. That is, rather than being prohibited, certain environmentally harmful activities in coastal mangroves are subject to economic compensation that does not necessarily imply the abatement of the negative environmental impact.

To identify the relationship between tourism, the environment and law, the following matrix shows the principal environmental impacts generated by tourism activities and the related Mexican legal provisions. See **Table 5**.

Table 5. Environmental Laws on the Environmental Impact of Tourism in Mexico

Description of Tourist Activity	Definition of Environmental Impact	Legal Requirements in Mexico
Construction of infrastructure	Impact on habitat and wildlife from land use change	Laws and regulations, principally the requirement for an environmental impact evaluation
Use of hostelry and recreational facilities	Consumption of energy and water, generation of wastes	Environmental compliance (voluntary)
Visits to natural sites	Impacts on habitat and wildlife	Federal and state laws and regulations
Transportation to arrive and at the tourist destination	Emissions of gases to the atmosphere from air transport to arrive; cruise ship contamination of the seas; noise pollution and of the atmosphere from terrestrial transport	Laws and regulations on the discharge of wastes into national water bodies; local requirements on atmospheric emissions from motor vehicles; there is no legal requirement in Mexico governing the use of air transport and its emissions
Retail commerce at the destination	Impact on wildlife	Laws, regulations and penalties contained in the Penal Code

It is difficult to quantify noncompliance with these provisions, since information is available only for those cases where law enforcement was effective. Such is the case of the Reports of the Office of the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*—Profepa), which present successful enforcement cases, but not those cases where environmental damage was not quantified.

6.3. Environmental Law Enforcement: Case Studies

As mentioned above, NAAEC Articles 14 and 15 provide individuals and organizations with an opportunity to present citizen submissions on environmental laws, when the Parties fail to enforce them.

6.3.1. Port of Cozumel

Various issues have been brought before the CEC Secretariat under the citizen submission process. In the specific case of tourism, there is a CEC citizen submission regarding the construction and operation of a public port terminal in Cozumel, Quintana Roo, Mexico. This was the first CEC submission to have an official party response requested in a complaint proceeding, and was publicly released in the factual record requested by the CEC Council.

The case was begun in January 1996 by *Comité para la Protección de los Recursos Naturales, A.C.*, *Grupo de los 100 Internacional A.C.*, and the Mexican Environmental Law

Center (*Centro Mexicano de Derecho Ambiental*), asserting the failure to effectively enforce the following provisions:

a) LGEEPA and its Environmental Impact Regulation

c) Instructions for the preparation and filing of the General Environmental Impact Statement under Articles 9 and 10 of the Environmental Impact Regulation

d) Decree published in the Federal Official Gazette (*Diario Oficial de la Federación*) on 11 June 1980, declaring the "Marine Flora and Fauna Refuge on the Western Coast of Cozumel Island, State of Quintana Roo"

e) Declaration of Uses, Allocations and Reserves of the Municipality of Cozumel, Quintana Roo, published in the Quintana Roo State Gazette on 9 March 1987

f) Ports Act (*Ley de Puertos*)

The submitters asserted that the Mexican government issued building permits to install and operate a dock and port on Cozumel Island, whose environmental impact study and assessment did not comply with the respective laws and procedures. The process of citizen submissions on environmental law enforcement appears to be solely for informational purposes. The primary means of pressure is to make public the fact that governments are failing to enforce their environmental laws. The process does not provide for any kind of economic compensation for the affected parties or for any legislative amendment, unlike the investor dispute resolution mechanism described above. Only in the case of the repeated failure to enforce environmental laws, NAAEC Section V establishes a dispute resolution mechanism whereby, if the failure persists, a panel may assess a monetary compensation. If the party does not pay the compensation, NAFTA benefits may be suspended up to an amount of no more than the monetary contribution. At present, there is no documented case of this type of penalty.

However, any mechanism highlighting an environmental enforcement failure by a NAFTA government has a positive effect on the performance of federal and local officials, companies and organizations (including academic social and nongovernmental organizations) in their activities relating to projects with possible environmental effects, in this case the generation of tourism infrastructure.

6.3.2. Costa Cancún Development

There are cases not involving a CEC citizen submission that question the enforcement of environmental laws in tourism projects. One case, the Costa Cancún Development (3rd phase), also takes place in Quintana Roo, Mexico.

The Golf & Resorts Costa Cancún file (2004)[6] describes a 600 million dollar project to build a golf course, clubhouse and beach, access roads and residential areas (hotels) in Cancún. The building programs refer to such activities as flora and fauna rescue, tree felling, lake and wetland treatment, nature area cleanup, and others having a major impact on the natural environment.

[6] File obtained through citizen submission to the Federal Institute for Access to Public Information (*Instituto Federal de Acceso a la Información Pública*—IFAI) No. 211600013607.

The Semarnat case study (2006) notes that the matter was first submitted in 1998 and denied in 2000. The project underwent major changes and was resubmitted for approval in 2003. A conditional authorization was granted in February 2004.

Then, a member of the affected community, a resident of Benito Juárez, Quintana Roo, filed an administrative appeal against the conditional authorization, leading to a series of reviews. The project affected the Laguna de Nichupté wetlands, populated by four characteristic Mexican mangrove species.

In July 2006, the authorization was denied by the Semarnat General Bureau of Environmental Impact and Risk (*Dirección General de Impacto y Riesgo Ambiental*), becoming a successful case of environmental enforcement sought by a Mexican citizen.

As noted above, noncompliance or nonenforcement of the provisions is difficult to quantify, as information exists only on those cases where enforcement has been effective. In Mexico, the mass media have increased their coverage of environmental topics relating to tourism, primarily regarding authorizations for tourism projects in nature areas of great national importance. The press and nongovernmental organization websites contain information on the enforcement complaint, such as asking the interested parties to prepare an environmental impact assessment and stating that projects have been authorized notwithstanding the negative impact on ecosystems.

6.4. Tourism Economy and Ecology: Cancún

Cancún is used as a case study because of its importance as a recipient of foreign direct investment and its position as a preferred destination of international tourists. It is also a Sectur priority development area and targeted by Profepa for protection and conservation.

As noted by WWF and WTO, the liberalization of tourism services may had both positive and negative impacts on sustainable development (WWF 2001 and WTO 2002). However, WTO (2002) recognizes the difficulty in differentiating the environmental impact of the service trade *per se* from the environmental effects of related factors. The supply of services is generally intangible, and therefore direct environmental impacts may be estimates through the effects of consumption of associated goods.

Tourist spending may be subject to leakage due to the repatriation of profits to investors' home countries, minimizing the positive impact on local economies (WTO 2003)

Of all tourists visiting Mexico, 61.5 percent come for vacation, five percent for business travel, and 21.3 percent for one-day stopovers (including cruises). These international tourists represent 16.5 percent of national market consumption (OECD 2001). In 2001, 30 percent of the 1.519 billion dollars in domestic and foreign private investment in Mexico was from foreign sources; a third of the 170 investment projects were invested in beaches, while another third was invested in the Mayan region (Fonatur 2007).

Fonatur has developed five Comprehensively Planned Centers (*Centros Integralmente Planeados*), namely Cancún, Los Cabos, Ixtapa, Loreto and Bahías de Huatulco, with 245 hotels and more than 36,800 rooms. These centers had occupancy rates of 61.7 percent in 2002 (seven percentage points above other Mexican beach destinations. Nationally, the five Comprehensively Planned Centers receive 54 percent of foreign currency from tourism, and 40 percent of foreign tourists. They also provide 2.765 billion dollars in commerce and tax flows of more than 300 million dollars, from the VAT and lodging tax alone (Fonatur 2007).

Table 6. Top 10 States in Cumulative Private Investment in the Tourism Sector (millions of dollars)

Tabla 6
Las 10 entidades federativas con mayor inversión privada acumulada en el sector turístico en millones de dólares

Posición	Estado	Inversión	%	% Acumulado
1	Guerrero	2,625.0	22.6	22.6
2	**Quintana Roo**	**2,469.9**	**21.3**	**43.9**
3	Nayarit	924.7	8.0	51.9
4	Baja California	863.4	7.4	59.3
5	Sonora	784.2	6.8	66.1
6	DF	601.5	5.2	71.2
7	Baja California Sur	573.4	4.9	76.2
8	Jalisco	237.5	2.0	78.2
9	Nuevo L eón	230.4	2.0	80.2
10	Sinaloa	163.0	1.4	81.6

Fuente: S ecretaría de Turismo . Las cifras corresponden a las identificadas por año del 2001 a mayo del 2006
Source: Secretariat of Tourism. The data are for the year 2001 to May 2006.

From 2001 to 2006, 2.47 billion dollars were invested in Quintana Roo, 82 percent of which went to Cancún and the Mayan Riviera (Sectur, Private Investment in the Tourism Sector). Quintana Roo ranks fourth in per capita GDP, primarily represented by Cancún (Fonatur 2007).

It should be kept in mind that the development of tourism of Cancún's size and features has an immediate impact on ecosystems. Even in 1978, literature asserted that "in Cancun, Mexico, the natural environment of mangrove wetlands was almost completely destroyed by the development of tourist hotels and their associated infrastructure" (Bosselman 1978, cited by Davies, T. and Cahill, S. 2000). On the other hand, it is difficult to distinguish between the related concepts of tourism and recreation; tourism implies traveling a certain distance from home, while recreation refers to activities carried on during leisure hours (Davis and Cahill, 2000). We also stress the importance of activities to build tourism facilities, such as roads, hotels, recreational areas (golf courses), ports, etc.

When analyzing the environmental implications of tourism, there are several parameters to be considered, forming part of the so-called "ecological footprint" (Gössling, S., *et al.* 2002). For example, there are impacts associated with the transportation used to arrive at tourist destinations and during the visit, as air travel, ground transportation and sea transport all have different environmental effects. Airlines release different pollutants into the air, especially carbon monoxide. While the quantities released are relatively low compared to other means of transportation, these emissions are on the rise (Davies, T., and Cahill, S., 2000). Energy consumption is one of the greatest problems associated with tourism and travel in general (Gössling, S., 2000 and Gössling S., *et al.* 2005). In addition to the impact of transportation, there are other parameters to measure the impact of the tourism industry, relating to hotels (primarily electricity and water consumption) and the generation of solid waste by tourists (Davies, T., and Cahill, S., 2000).

Though there are other impacts, such as the direct impact of tourists on habitats and biodiversity, this study considers only those impacts related to the use of air transport and hotel facilities, in order to isolate the effect of tourists visiting Mexico from the United States and Canada. To prepare the balance, the following parameters are considered:

a) Tourist spending per day (dollars)
b) Number of US and Canadian tourists
c) Average nights' stay at tourist destination
d) Quantity of water consumed per tourist per day (m^3)
e) Cost per m^3 in Mexico (dollars)
f) Quantity of power consumed per tourist per day (KwH)
g) Cost per KwH (CO_2) (dollars)
h) Quantity of solid waste generated per tourist (tons)
i) Cost associated with waste generation (dollars)
j) Number of US and Canadian tourists arriving by plane
k) Gas emissions per mile traveled by plane
l) Average distance US and Canadian border cities to tourism destination (CO_2)
m) Cost per ton of CO_2 (dollars)

The formula is:

Economic and environmental impact = *[(a)*(b)*(c)] – [(d*c*e)*b] – [(f*c*g)*b] – [(h*c*i)*b] – [(k*l*m)*j]*

With 2006 data, we found that the economic impact was $1.894 billion dollars. Data show that during that year, 2.103 million tourists arrived at the Cancún airport from the United States, with another 430,000 arriving from Canada (SEGOB 2007). The average daily spending per international tourist in 2006 was $124 dollars (Bank of Mexico 2007), with an average stay of six nights (Sectur 2007). US tourist spending in Cancún was $1.572 billion dollars, while Canadian tourists spent $321 million dollars.

The main environmental impacts of US and Canadian tourists in Cancún, associated with hotel facilities, were calculated based on the consumption of 580 liters of water per tourist per day (Conservation International 2004), 36 KwH of electricity per tourist per day (Conservation International 2004), 2.5 kg of solid waste generated per tourist per day (Gutiérrez Palacios 2002) and 0.90 tons of CO_2 released into the atmosphere with respect to the miles traveled by US tourists flying into Cancún, with Canadian tourists accounting for 1.73 tons of CO_2 released (Native Energy 2007).

The year's impact in environmental terms was 8.816 billion liters of water; 235 million KwH; 38,000 tons of solid waste, and 2.633 tons of CO_2 released into the atmosphere from the use of air transport.

To compare the dollar spending of tourists in Mexico with the environmental impacts, we estimated their respective economic values. The cost of water consumption was estimated at $13.3 million dollars, with data from Ecosystem Market Place (2007) and the Pan American Health Organization (PAHO/WHO 2002). The cost of energy consumption was $2.65 million dollars, while the cost of waste generation was $4.2 million dollars. The cost of the impact of air travel was $29.75 million dollars (Ecosystem Market Place 2007). The global environmental impact of US tourists in Cancún was $38.1 million dollars, while Canadian tourists had an impact of $11.85 million dollars, for a total of $49.964 million dollars.

Thus, the balance is: {$1,894,131,322 (revenues from tourist spending)}

-{$2,659,141 (energy consumption)}

-{$13,331,606 (water consumption)}

- {$4,218,471 (waste generation)}

-{$29,754,535 (air transport emissions)}

=$1,844,167,569 dollars.

The greatest environmental impact is CO_2 emissions from the use of air transport (see **Figure 19**), with a higher per capita impact for Canadian tourists—$28 dollars compared to the US impact of 18 dollars—while 83 percent of tourists are from the United States, compared to 17 percent from Canada. In this regard, we conclude that the impact of US tourists in Cancún is primarily local, with respect to consumption of natural resources, while Canadian tourists have a global impact due to the air emissions.

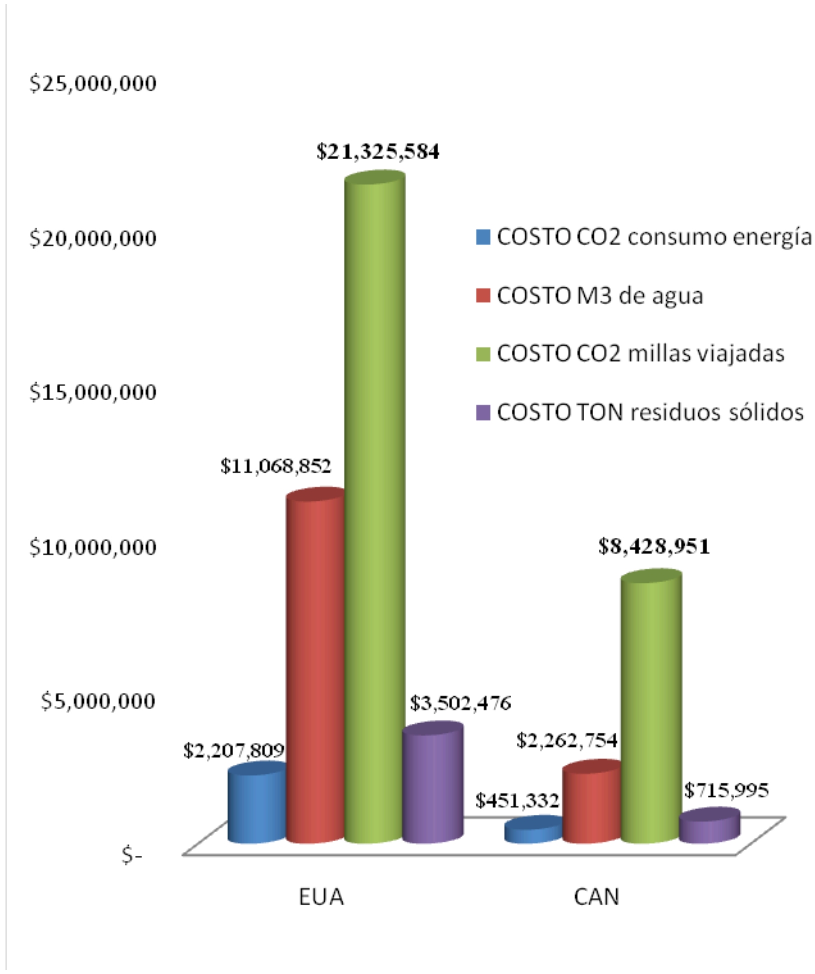


Figure 1. Economic Cost of Principal Impacts (Energy Consumption, Water Use, CO_2 Emissions from Travel, and Solid Waste) of US and Canadian Tourists in Cancún, 2006 (US dollars)

The total environmental cost for 2006, in economic terms, was $49.9 million dollars, 76 percent of which are from US tourists.

The purpose of this economic-environmental balance is to compare the economic impact of US and Canadian tourists visiting Cancún, with the environmental impacts caused by tourism activities on a local and global scale. According to the data used and the estimated variables, the environmental impact in economic terms is only 2.64 percent of the total revenues generated in Cancún from annual tourist spending.

This exercise shows that the environmental impacts associated with tourism derive not only from tourists *per se*, but also from tourism service providers such as hotels and airlines. As regards hotels, there is a very interesting underway by Conservation International (2004) and other organizations in the Mayan Riviera (including Cancún), called "Walking Toward Hotel Sustainability". The program shows that a majority of properties in the zone see major opportunities to reduce their consumption of water and energy, benefiting the environment while reducing operating costs. Hotels in the area also have great potential to foster waste management activities. The economic benefits seen by those involved in the project depend directly on the cost of water and power in their respective areas.

In this regard, we may conclude that the impact of visiting tourists depends on the infrastructure of the hotels where they stay. This points to the importance of promoting compliance in the building of Mexican hotel facilities and the continuous improvement of existing facilities, with a view to more efficient resource consumption (water and energy), waste management and other considerations.

It is clear that in addition to ongoing environmental compliance, further steps are needed. Worldwide, there are environmental certification models such as the ISO 14000 group of standards that may be adopted by any organization engaged in any kind of activity. In 2003 Profepa began an Environmental Compliance Program for hotel services, through an agreement between Sectur and the Mexican Hotel and Motel Association (*Asociación Mexicana de Hoteles y Moteles*) (SECTUR, STU/020/03). The program addresses such issues as water usage; discharge quality and quantity; use of electricity and fuel; discharges and spills into the soil/subsoil; waste; sound management of chemicals (disinfectants, insecticides and chlorine); and compliance (including land use authorizations in federal maritime land zone and environmental impact statement). Though the program is voluntary, it represents a starting point for enhanced compliance.

As regards the use of air transport, we know the importance of energy efficiency of engines and the physical condition of airplanes used by airlines. The US Environmental Protection Agency (EPA) has passed pollutant emissions standards that have been adopted by the International Civil Aviation Organization (ICAO) in the United States, although compliance is voluntary (Davies, T., and Cahill, S., 2000). In addition to minimized emissions, pollutant offsets through contributions to carbon capture projects and a “zero environmental impact” approach are needed. A “green airline” certification would be a convenient way for global tourists to identify those airlines that generate smaller environmental impacts.

In September 2007, during the 36th ICAO Meeting held in Montreal, Canada, a US-Mexico convention was announced to develop common standards for inspecting flight conditions, air operations and environmental certifications (US Embassy in Mexico, 2007). This initiative represents another step towards abating the environmental impact of civil aviation. The inclusion of the Canadian counterpart could ensure a regional impact of even greater importance.

7. RESULTS

This study follows the CEC methodology to identify the environmental impact of trade liberalization. The findings are set out below:

I. Select the sector to be studied

Tourism relates directly to the main components of the environment and natural resources, through the use of land and ecosystems in the development of tourism facilities.

II. Select the specific issues for study within or across sectors

We select "Hotels and Restaurants" under GATS classification W120, which in turn relates to the "commercial presence" mode of supply. FDI is seen as a link between the tourism service and NAFTA Chapter 11. There is evidence that US and Canadian investors make such investments. We did not conduct a comparative analysis for periods before and after NAFTA's entry into force, given the lack of data for years preceding 1999. "Tourists in Mexico" are the "consumption abroad" mode of supply for tourism services. We have analyzed international tourist flows in general, and particularly US and Canadian tourists, finding that rates of change do not vary significantly for US tourisms, but more significantly for Canadian tourists. Variances in tourist flows cannot be attributed to NAFTA, as Mexico has historically been a major international tourism destination.

The issue that relates tourism, the environment and investment is "Mexican environmental laws," which affect tourism activities in both the development of infrastructure generation projects and the use of natural resources in the provision of the service. The CEC is recognized as a forum for citizen submissions to call attention to failures in environmental law enforcement; there is evidence of cases involving tourism developments.

The issue that relates tourism, the environment and "tourists" is the application of the "ecological footprint" concept, finding a balance between economic impacts (understood as tourist spending in dollars or pesos) and the estimated consumption of environmental goods and services, also estimated in economic terms for comparison.

III. Establish connection of sector/issue to NAFTA

The NAFTA linkages of tourism are found in its institutions. In the case of FDI, there is evidence of NAFTA Chapter 11 being applied to tourism projects to resolve investor disputes with Party governments. Moreover, NAAEC Articles 14 and 15 are also a link between tourism projects and environmental law enforcement. There is evidence of citizen submissions made against the Mexican government's enforcement failures regarding a tourism port and a beach of great ecological significance to the country.

IV. Examine four "processes" by which NAFTA's rules and institutions affect the environment

In the case of tourism and the "production" process, natural places are the primary inputs to recreational activities. Beach destinations, with their great ecological wealth, are preferred.

In this regard, the generation of "physical infrastructure" at such places plays a key role in the generation of environmental impacts, due to the change in land use and pressure on ecosystems' load capacities. This points to the importance of comprehensive environmental laws as well as effective enforcement to decrease such environmental impacts.

"Social organization" is a key factor to reporting failures to enforce Mexico's environmental laws with respect to tourism developments. There is evidence that individuals and organizations make citizen submissions in international forums such as the CEC and locally with the competent authorities.

As regards "governmental policy," there has been a growing interest in attracting FDI since the 1980s, facilitating procedures and reducing barriers to cross-border trade in services. Also, as regards the environment, there is a comprehensive legal framework in light of the national needs and international commitments assumed in treaties and agreements, including laws, regulations and official standards. It is important to recognize that there are mechanisms for filing citizen submissions to review enforcement, such as through the CEC.

Various "environmental effect indicators" have been developed with respect to Mexican tourism development, acknowledging the difficulty in differentiating tourism from recreation—the performance of services seems to be intangible, while the generation of infrastructure and tourists' consumption of goods are tangible. Here, we estimate tourists' ecological footprint by comparing tourist spending as reported in national economic figures with the cost of the consumption of natural resources or the impact on the environment.

8. CONCLUSIONS

The questions behind this study were: Is tourism intensively promoted by NAFTA? What variables other than NAFTA have an impact on the Mexican tourism sector? Can the same indicators used for the trade of goods be used for the tourism sector?

The analysis of NAFTA and tourism is addressed in this study under foreign direct investment in the tourism sector and Chapter 11 of the Agreement. We also refer to Chapter 12 (Cross-Border Trade in Services), and review the Annexes providing reservations to the national treatment of investments in all sectors, restricting ownership within 50 kilometers from the coast, primarily affecting tourism. There is evidence of Chapter 11 being applied, as US investors in Mexico call for dispute resolution in tourism projects. A review of statistical data from Mexican sources on the amount of foreign direct investment in Mexican in general, does not allow for a comparison between pre- and post-NAFTA periods, although such data do show that the proportion of US investment has a greater impact than Canadian investment. US information sources indicate that US foreign direct investment in Mexico was on the rise for years before NAFTA entered into force, continuing the same trend thereafter. We do not find that NAFTA significantly promotes the Mexican tourism sector. We found variables other than NAFTA that did have an impact on Mexican tourism. There have been incentives for foreign direct investment in Mexico since the 1980s. NAFTA offered greater certainty and support to investors, but did not directly trigger the opening of trade in investment matters. Tourism as a service has been promoted in Mexico for decades before NAFTA was signed, as part of a national development strategy. Mexico has been a favorite US and Canadian tourist destination since before NAFTA. The flow of US and Canadian tourists into Mexico responds to variables such as macroeconomic factors in Mexico (e.g., the 1995 peso devaluation), international safety concerns following the 2001 attacks, and weather factors such as hurricanes on Mexican beaches.

Unlike indicators for trade in goods, trade in services faces greater difficulty in recording the flow and exchange among NAFTA parties. There is greater tracking of the exchange of goods than the exchange of services, as the former is tangible while the latter is often not. As regards the linkage between NAFTA, tourism and the environment, the questions asked were: What economic indicators are sufficiently comprehensive to include environmental impact in the final balance? To what extent has the liberalization of services in the NAFTA framework changed environmental conditions or environmental policy in Mexico? To what extent do NAFTA regulations and institutions support or hinder the achievement of policies to mitigate the environmental effects caused by the liberalization of tourism services in Mexico?

Economic indicators with respect to tourism primarily take account of revenues generated by tourist spending; however, they do not consider the environmental impacts caused by tourism activities.

The liberalization of services in Mexico, which as explained above is not due to NAFTA alone, has led to changes in law and economic policy to attract foreign direct investment. However, we did not find evidence that environmental laws or policies have formally changed to promote the development of this sector in Mexico.

NAFTA institutions, especially the Commission for Environmental Cooperation of North America, are major promoters of citizen submissions on environmental enforcement in the three countries. The CEC has fostered the effective enforcement of Mexican environmental laws to offset the negative environmental effects of tourism projects in Mexico. We found evidence that the country's social organization has developed in its ability to locally denounce enforcement failures stemming from the construction of tourism facilities in Mexico.

The Cancún balance with 2006 data points to a greater number of tourists from the United States (83 percent). The economic cost of environmental impacts represents 2.6 percent of overall revenues generated by tourist spending. The greatest environmental impact in economic terms—and a global impact at that—is the impact of CO_2 released by air transport. As regards local impacts, water consumption is highest, followed by solid waste generation and electricity consumption, in that order.

The impact of visiting tourists depends on the infrastructure of the hotels where they stay and the airlines they fly. We suggest promoting the continuous improvement of existing facilities to make the use of resources (water and energy), waste management and other considerations more efficient. At present, such improvement measures are voluntary.

The questions are: Who should assume the costs of making services more efficient? Should the costs be internalized by companies or absorbed by users by way of price adjustments? Should tax schemes or incentive programs promote the practices, or should they remain voluntary? We know that sustainability is not an end but a process; as some might say, "Sustainability is more a journey than a destination" (Esty, D., and Winston, A., 2006)—on this journey all actors must get involved to play their best parts. Government enforcement alone is insufficient to ensure compliance and voluntary action; it is equally important to improve the performance of service providers and responsible use by users. Nongovernmental organizations (NGOs) and research centers likewise contribute to the equation. Cooperative rather than conflictive endeavors should be sought, promoting outstanding performance beyond basic compliance, or even worse, noncompliance with the environmental rules. Mexico must find the formula enabling it to continue offering destinations to domestic and international tourists attracted to its natural wealth, fostering sustainable tourism that respects its ecosystems.

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Federal Tourism Act (*Ley Federal de Tourism*)

General National Property Act (*Ley General de Bienes Nacionales*—LGBN) and the Regulation thereunder on the Use of the Territorial Sea, Navigable Waters, Beaches and Federal Maritime and Coastal Land Zone

General Sustainable Forestry Development Act (*Ley General de Desarrollo Forestal Sustentable*) and Regulations

General Wildlife Act (*Ley General de Vida Silvestre*)

General Ecological Balance and Environmental Protection Act (*Ley General para el Equilibrio Ecológico y Protección al Ambiente*) and the Protected Nature Area and Environmental Impact Regulations thereunder

General Waste Prevention and Comprehensive Management Act (*Ley General para la Prevención y Gestión Integral de los Residuos*)

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North American Free Trade Agreement (NAFTA)

EXHIBITS

Exhibit 1. Methodology – CEC Analytic Framework (1999)

I. Select the sector to be studied

Criteria:
- The sector relates directly to major environmental media and natural resources.
- The sector has been the subject of changes in the economic rules set by NAFTA.
- The sector has experienced changes in trade during the post-NAFTA period.
- The sector has involved new, direct foreign investment among NAFTA Parties since 1994.
- The sector is one where one might expect, a priori, that there are important effects attributable to NAFTA.

II. Select the specific issues for study within or across sectors

Criteria:
- The sector relates directly to major environmental media and natural resources.
- The sector has been the subject of changes in the economic rules set by NAFTA.
- The sector has experienced changes in trade during the post-NAFTA period.
- The sector has involved new, direct foreign investment among NAFTA Parties since 1994.
- The sector is one where one might expect, a priori, that there are important effects attributable to NAFTA.

III. Establish connection of sector/issue to NAFTA

A. NAFTA rule changes
1. Tariff reductions and other border measures
2. Changes affecting goods/services once imported
3. Inputs
4. Substitute products
5. Norms for particular processes
6. Preambular principles and stated objectives
7. National implementing legislation
8. Accelerated tariff reduction

B. NAFTA's institutions
1. Meeting mandatory responsibilities
2. Acting upon discretionary environmental mandates
3. Extending to other relevant subjects
4. Generating new institutions
5. Fostering communication
6. Capacity building
7. Discouraging unilateral action
8. Fostering high levels of environmental convergence
9. Participating multilaterally
10. Contributing to community building and identity

C. Trade flows
1. Value and volume of exports/imports
2. Market share
3. Structure and composition
4. Creation and diversion

D. Transborder investment flows
1. Regional concentration of investment
2. Sectorial investment shift, migration and subsidies
3. Analytic Framework for Assessing the Environmental Effects of NAFTA
4. Technology transfer and diffusion
5. Intracorporate production and standards integration

6. Corporate concentration
7. Foreign portfolio investment

E. Other economic conditioning forces
1. Domestic macroeconomic forces
2. Microeconomic changes in each economy
3. Major fluctuations from international forces
4. Changes in weather and climate

IV. Examine four "processes" by which NAFTA's rules and institutions affect the environment.

A. Production, management, and technology
1. Inputs
2. Production efficiency
3. Physical technology
4. Management standards
5. Product characteristics and prices
6. Sectoral and geographic concentration

B. Physical infrastructure
1. Existing infrastructure capacity
2. Correlation of capacity
3. Choke points
4. Competitive corridors
5. Transportation/transmission scale
6. Intermodal shifts
7. Distancing effects

C. Social organization
1. Civil society groups
2. Property rights
3. Culture
4. Migration and community formation
5. Transnational coalitions

D. Government policy
1. Governmental intervention in the market
2. Jurisdiction over environmental policy
3. Balance between government branches
4. Strength of market-oriented government policies
5. Effects of specific government policies on the environment
   a. Procurement practices
   b. Environmental management systems in state-owned enterprises
   c. Financial instruments
   d. Government research and development
   e. Regulations, environmental assessment, intellectual property rights
   f. Environmental regulation of producers and products
   g. Conservation programs
6. Environmental surveillance and enforcement
7. Trilateral cooperation at various governmental levels outside NAFTA institutions

V. Indicators of environmental impacts stemming from NAFTA

A. Air indicators
1. Acid precipitation (SOx)
2. Ozone concentration (O3, NOx, VOCs)
3. Particulate matter (PM10, PM2.5, Hg, Pb)
4. Persistent organic pollutants (POPs)
5. Carbon monoxide (CO)
6. Carbon dioxide (CO2)

B. Water indicators

1. Quality of drinking water
2. Freshwater use (by source/sector)
3. Lead concentration
4. Copper concentration
5. Surface water pollutants
6. Fish capture
7. Sewage treatment connection rates

C. Land indicators

1. Intensity of pesticide use for agriculture
2. Nitrogen from fertilizers and livestock
3. Area of forested land
4. Intensity of forest use
5. Waste generation
6. Recycling rate

D. Biodiversity indicators

1. Number of threatened/extinct species
2. Wetlands
3. Protected areas

E. Aggregate indicators

1. Climate change
2. Ozone depletion
3. Acidification
4. Eutrophication
5. Cost of environmental remediation
6. "Ecological footprint"
7. Energy intensity
8. Human health costs of environmental pollution
9. Energy mix
10. Biological integrity

Exhibit 2. Services sectoral classification list – World Trade Organization (WTO)

WORLD TRADE ORGANIZATION	RESTRICTED **MTN.GNS/W/120** 10 July 1991 (98-0000)

Special Distribution

1. BUSINESS SERVICES
   - A. Professional Services
     - a. Legal Services
     - b. Accounting, auditing and bookkeeping services
     - c. Taxation Services
     - d. Architectural services
     - e. Engineering services
     - f. Integrated engineering services
     - g. Urban planning and landscape architectural services
     - h. Medical and dental services
     - i. Veterinary services
     - j. Services provided by midwives, nurses, physiotherapists and para-medical personnel
     - k. Other
   - B. Computer and Related Services
     - a. Consultancy services related to the installation of computer hardware
     - b. Software implementation services
     - c. Data processing services
     - d. Data base services
     - e. Other
   - C. Research and Development Services
     - a. R&D services on natural sciences
     - b. R&D services on social sciences and humanities
     - c. Interdisciplinary R&D services
   - D. Real Estate Services
     - a. Involving own or leased property
     - b. On a fee or contract basis
   - E. Rental/Leasing Services without Operators
     - a. Relating to ships
     - b. Relating to aircraft
     - c. Relating to other transport equipment
     - d. Relating to other machinery and equipment
     - e. Other
   - F. Other Business Services
     - a. Advertising services
     - b. Market research and public opinion polling services
     - c. Management consulting service
     - d. Services related to man. consulting
     - e. Technical testing and analysis serv.
     - f. Services incidental to agriculture, hunting and forestry
     - g. Services incidental to fishing
     - h. Services incidental to mining
     - i. Services incidental to manufacturing
     - j. Services incidental to energy distribution
     - k. Placement and supply services of Personnel
     - l. Investigation and security
     - m. Related scientific and technical consulting services
     - n. Maintenance and repair of equipment (not including maritime vessels, aircraft or other transport equipment)
     - o. Building-cleaning services
     - p. Photographic services
     - q. Packaging services

r. Printing, publishing
s. Convention services
t. Other

2. COMMUNICATION SERVICES
A. Postal services
B. Courier services
C. Telecommunication services
a. Voice telephone services
b. Packet-switched data transmission services
c. Circuit-switched data transmission services
d. Telex services
e. Telegraph services
f. Facsimile services
g. Private leased circuit services
h. Electronic mail
i. Voice mail
j. On-line information and data base retrieval
k. electronic data interchange (EDI)
l. enhanced/value-added facsimile services, incl. store and forward, store and retrieve
m. code and protocol conversion
n. on-line information and/or data processing (incl.transaction processing)
o. other
D. Audiovisual services
a. Motion picture and video tape production and distribution services
b. Motion picture projection service
c. Radio and television services
d. Radio and television transmission services
e. Sound recording
f. Other
E. Other

3. CONSTRUCTION AND RELATED ENGINEERING SERVICES
A. General construction work for buildings
B. General construction work for civil engineering
C. Installation and assembly work
D. Building completion and finishing work
E. Other

4. DISTRIBUTION SERVICES
A. Commission agents' services
B. Wholesale trade services
C. Retailing services
D. Franchising
E. Other

5. EDUCATIONAL SERVICES
A. Primary education services
B. Secondary education services
C. Higher education services
D. Adult education
E. Other education services

6. ENVIRONMENTAL SERVICES
A. Sewage services
B. Refuse disposal services
C. Sanitation and similar services
D. Other

7. FINANCIAL SERVICES
A. All insurance and insurance-related services
a. Life, accident and health insurance services

b. Non-life insurance services
c. Reinsurance and retrocession
d. Services auxiliary to insurance (including broking and agency services)

B. Banking and other financial services (excl. insurance)

a. Acceptance of deposits and other repayable funds from the public
b. Lending of all types, incl., inter alia, consumer credit, mortgage credit, factoring and financing of commercial transaction
c. Financial leasing
d. All payment and money transmission services
e. Guarantees and commitments
f. Trading for own account or for account of customers, whether on an exchange, in an over-the-counter market or otherwise, the following:
   - money market instruments (cheques, bills, certificate of deposits, etc.)
   - foreign exchange
   - derivative products incl., but not limited to, futures and options
   - rate of change and interest rate instruments, incl. products such as swaps, forward rate agreements, etc.
   - transferable securities
   - other negotiable instruments and financial assets, incl. bullion
g. Participation in issues of all kinds of securities, incl. under-writing and placement as agent (whether publicly or privately) and provision of service related to such issues
h. Money broking
i. Asset management, such as cash or portfolio management, all forms of collective investment management, pension fund management, custodial depository and trust services
j. Settlement and clearing services for financial assets, incl. securities, derivative products, and other negotiable instruments
k. Advisory and other auxiliary financial services on all the activities listed in Article 1B of MTN.TNC/W/50, incl. credit reference and analysis, investment and portfolio research and advice, advice on acquisitions and on corporate restructuring and strategy
l. Provision and transfer of financial information, and financial data processing and related software by providers of other financial services

C. Other

8. HEALTH RELATED AND SOCIAL SERVICES
(other than those listed under 1.A.h-j.)
   A. Hospital services
   B. Other Human Health Services
   C. Social Services
   D. Other

9. TOURISM AND TRAVEL RELATED SERVICES
   A. Hotels and restaurants (incl. catering)
   B. Travel agencies and tour operators services
   C. Tourist guides services
   D. Other

10. RECREATIONAL, CULTURAL AND SPORTING SERVICES (other than audiovisual services)
   A. Entertainment services (including theatre, live bands and circus services)
   B. News agency services
   C. Libraries, archives, museums and other cultural services
   D. Sporting and other recreational services
   E. Other

11. TRANSPORT SERVICES
   A. Maritime Transport Services
      a. Passenger transportation
      b. Freight transportation
      c. Rental of vessels with crew
      d. Maintenance and repair of vessels
      e. Pushing and towing services
      f. Supporting services for maritime transport
   B. Internal Waterways Transport

a. Passenger transportation
b. Freight transportation
c. Rental of vessels with crew
d. Maintenance and repair of vessels
e. Pushing and towing services
f. Supporting services for internal waterway transport

C. Air Transport Services
a. Passenger transportation
b. Freight transportation
c. Rental of aircraft with crew
d. Maintenance and repair of aircraft
e. Supporting services for air transport

D. Space Transport

E. Rail Transport Services
a. Passenger transportation
b. Freight transportation
c. Pushing and towing services
d. Maintenance and repair of rail transport equipment
e. Supporting services for rail transport services

F. Road Transport Services
a. Passenger transportation
b. Freight transportation
c. Rental of commercial vehicles with operator
d. Maintenance and repair of road transport equipment
e. Supporting services for road transport services

G. Pipeline Transport
a. Transportation of fuels
b. Transportation of other goods

H. Services auxiliary to all modes of transport
a. Cargo-handling services
b. Storage and warehouse services
c. Freight transport agency services
d. Other

I. Other Transport Services

12. OTHER SERVICES NOT INCLUDED ELSEWHERE

Source: World Trade Organization (WTO). General Agreements on Trade in Services (GATS), at http://www.wto.org/english/tratop_e/serv_e/mtn_gns_w_120_e.doc

Exhibit 3. US-Mexico Investment Disputes under NAFTA Chapter 11

	Case name	Issue at dispute	Claim amount	Panel decision
1.	**Robert J. Frank**	**Private property investment (Mexico expropriated Baja California beach property)**	**$1.5 million dollars**	**Notice received**
2.	**Billy Joe Adams**	**Tourism project investment – facility development and maintenance (Mexico expropriated property).**	**$75 million dollars**	**Notice received**
3.	**Calmark Commercial Development Inc.**	**Tourism project investment - Hotel and time-share condominiums (Mexico did not allow repatriation of the sale of the investment)**	**$400,000 dollars**	**Notice received**
4.	Fireman's Fund	Personal and business insurance (Mexico did not allow the sale of products in US dollars)	$50 million dollars	Notice received
5.	Bayview Irrigation et al.	Irrigation water (From 1992 to 2002, Mexico has denied irrigation water usage rights to the claimants)	$320,124,350 to $667,687,930 dollars	Notice received
6.	Francis Kenneth Hass	Timber product production, exploitation and marketing (Mexico denied national treatment)	$17 million dollars	Notice received
7.	Lomas Santa Fe, Investment	Commercial development (Mexico expropriated property)	$30 to $210 million dollars	Notice received
8.	Archer Daniels Midland Co. and Tate & Lyle Ingredients Americas, Inc	High-fructose corn syrup manufacturer (Mexico levied a tax on beverages containing HFCS in 2002)	$100 million dollars.	Current arbitration
9.	Corn Products International, Inc. v. Mexican States	High-fructose corn syrup manufacturer (Mexico levied a tax on beverages containing HFCS in 2002)	$325 million dollars	Current arbitration

US-Mexico Investment Disputes under NAFTA Chapter 11

	Case name	Issue at dispute	Claim amount	Status
10.	Waste Management, Inc.	Waste disposal company (Mexico did not recognize the project security deposit)	$60 million dollars	Panel ruled in the company's favor.
11.	Azinian et al.	Waste management systems and landfills	$14 million dollars	Panel ruled in Mexico's favor.
12.	GAMI Investments Inc.	Sugar production (Mexico expropriated company property)	$27 million dollars	Panel ruled in Mexico's favor.
13.	Marvin Roy Feldman Karpa (CEMSA)	Mexican cigarette exporter (Mexico denied export tax refund)	$40 million dollars	Panel did not rule in favor of expropriation, but maintained the national treatment claim.
14.	International Thunderbird Gaming Corporation	Gambling and entertainment company (Mexico closed facilities)	$100 million dollars	Panel ruled in Mexico's favor.
15.	Metalclad Corp.	Waste disposal company (Mexico did not authorize project operation)	$43,125,000 dollars	Panel ruled in company's favor, for $16.7 million dollars

Prepared with data from the US Department of State (http://www.state.gov/s/l/c3742.htm); Foreign Affairs and International Trade Canada (www.dfait-maeci.gc.ca/tna-nac/mexico-en.asp); Mexican Secretariat of the Economy (*Secretaría de Economía*—SE) (http://www.economia.gob.mx/?P=2259).

Note: Cases 1 to 4 in this table appear on the SE website as notices, and as current arbitration at the websites of the Mexican Secretariat of Foreign Affairs (*Secretaria de Relaciones Exteriores*—SRE) and International Trade Canada.

Exhibit 4. Environmental Rules Relating to Tourism Sector

The Penal Code (*Código Penal*) classifies the following as environmental crimes against biodiversity:

- Tree felling or destruction of natural vegetation; cutting down or uprooting trees; changing forest land uses (in nonurban areas)
- Capturing, harming or killing any turtle or marine mammal, or collecting or storage in any way their products or byproducts
- Capturing, processing, collecting, transporting or harming banned aquatic species; hunting, fishing or capturing any wildlife species using unauthorized means
- Any activity for purposes of trafficking, capturing, holding, transporting, collecting, importing or exporting any product or byproduct and other genetic resources of banned land-based or aquatic flora or wildlife species under any risk category (NOM-059-SEMARNAT-2001)
- Harming or filling wetlands, mangroves, lagoons, estuaries or swamps; damaging reefs
- Causing fires in a forest, jungle, natural vegetation or woodland, damaging the natural elements, flora, fauna, ecosystems or the environment

Mexican Official Standards (*Normas Oficiales Mexicanas*)

- NOM-004-CNA-1995, requirements for aquifer protection during water well maintenance and rehabilitation and for well closure in general
- NOM-003-CNA-1996, requirements during water well construction to prevent aquifer contamination
- NOM-001-SEMARNAT-1996, establishing maximum allowable pollutant limits for wastewater in national waters and properties
- NOM-003-SEMARNAT-1997, establishing maximum allowable pollutant limits for treated wastewater reused in public services
- NOM-131-SEMARNAT-1998, establishing guidelines and specifications for whalewatching activities, with respect to protection and habitat conservation
- NOM-059-SEMARNAT-2001, environmental protection – Mexican native flora and wildlife species – risk categories and specifications for inclusion, exclusion or change –endangered species list
- NOM-017-PESC-1994, establishing provisions on sport-recreational fishing
- NOM-029 PESC- 2006, establishing provisions on responsible shark and ray fishing
- NOM-022-SEMARNAT-2003, on coastal wetlands in mangrove zones