
Environment

Environmental problems are a highly charged regional issue. Whether it is acid rain from industrial smokestacks, dumping of raw sewage, disposal of hazardous wastes, or overuse of fertilizers, environmental practices in each country affect its neighbors. Press and TV exposés of toxic waste and untreated sewage in the Rio Grande suggest that environmental conditions have worsened on the US-Mexico border over the past decade. Explosive growth has created new jobs and raised incomes but has also generated more pollution.

Worsening border conditions in the midst of urban growth date back to the 1970s. Not surprisingly, the NAFTA initiative provoked sharp reactions from the environmental community. US environmental groups argued that increased industrial growth in Mexico would further damage Mexico's environmental infrastructure, that lax enforcement of Mexican laws would encourage "environmental dumping," and that increased competition would provoke a "race to the bottom." They demanded that the new trade pact include safeguards against real or potential abuses, as well as funds to redress long-standing problems.

Concerns about environmental issues in general, and Mexican policies in particular, posed a serious obstacle to the start of NAFTA negotiations. In May 1991, several groups tried to block the launch by opposing the extension of fast-track authority needed for US ratification of any prospective agreement. Other groups sought to modify the traditional trade agenda by adding environmental issues. In response, the George H. W. Bush administration issued an action plan in May 1991 to address US-Mexico environmental issues along a "parallel track," both in NAFTA negotiations and in other bilateral forums (Magraw and Charnovitz 1994).

Fast-track authority was extended for two years, and the negotiations proceeded.

The “greening” of NAFTA produced notable results when the talks concluded in August 1992 but were not enough to satisfy presidential candidate Bill Clinton. During the election campaign in October 1992, Clinton criticized the pact for not dealing adequately with labor and environmental issues. He pledged not to implement NAFTA until a supplemental agreement had been concluded requiring each country to enforce its own environmental standards and establishing an “environmental protection commission with substantial powers and resources to prevent and clean up water pollution.”¹

Clinton’s campaign commitments created high expectations among US environmental groups, expectations that were not fully met in the postelection negotiations. The August 1993 side agreement, labeled the North American Agreement on Environmental Cooperation (NAAEC), augmented NAFTA’s environmental provisions and dispute settlement procedures, making the world’s greenest trade accord still greener. The NAFTA side accord did not, however, deliver on some of Clinton’s ambitious environmental promises. In particular, the Clinton administration did not choose to spend large sums of federal money on improving conditions in US and Mexican border communities. Meanwhile, Canada and Mexico preferred a less confrontational approach to dealing with environmental abuses and did not agree to US demands regarding enforcement provisions. Most environmental groups initially supported the “enhanced” NAFTA but became increasingly dissatisfied with government efforts to deal with environmental problems.² Eventually they soured on NAFTA and practically all other trade initiatives.

Does the NAFTA record on the environment since 1994 justify the criticism by environmental groups? Ten years is too short a period to redress decades of environmental abuse, but it is not too soon to assess NAFTA’s achievements and shortcomings in meeting its environmental objectives. To that end, this chapter reviews (1) the environmental provisions of NAFTA and the NAAEC; (2) the trends in North American environmental policy; and (3) the situation at the US-Mexico border.

Overall, the NAFTA experience demonstrates that trade pacts can simultaneously generate economic gains from increased trade, avoid the dismantling of existing environmental protection regimes, and improve

1. Speech by Bill Clinton at North Carolina State University, October 4, 1992.

2. The largest environmental groups, known to their opponents as the “shameful seven,” supported the NAFTA environmental side agreement: World Wildlife Fund, National Wildlife Federation, Natural Resources Defense Council, Defenders of Wildlife, Environmental Defense Fund, Conservation International, and Audubon Society. We thank John Audley for clarifying this sentence, which draws heavily on written comments he provided to an earlier draft.

environmental standards. But the NAFTA record does not demonstrate that a trade pact can reverse decades of abuse, nor can it turn the spigot on billions of dollars of remedial funding.

NAFTA's Environmental Provisions

NAFTA explicitly addresses environmental issues in its preamble and in five of its 22 chapters. Other chapters deal with environmental issues indirectly.

Preamble and Chapter 1

NAFTA's preamble ensures that the goals of the agreement are attained "in a manner consistent with environmental protection and conservation." Additionally, the preamble includes among NAFTA goals the "promotion of sustainable development" and the "strengthening of the development and enforcement of environmental laws and regulations."

Chapter 1 sets forth the agreement's basic rules of interpretation. In particular, Articles 103 and 104 confirm NAFTA's precedence over other international agreements—with the notable exception of the trade provisions in specified multilateral environmental agreements (MEAs). In other words, while Canada, Mexico, and the United States agreed that NAFTA takes precedence over GATT provisions, they recognized the legitimacy of incorporating trade measures (beyond those in NAFTA) as enforcement tools in MEAs.³

Chapters 7B and 9

Chapter 7B, on sanitary and phytosanitary (SPS) measures, allows the signatories to adopt or apply SPS measures more stringent than those established by international bodies. In other words, an unusually "tough" SPS standard is not automatically a prohibited trade barrier. To avoid abuses, Chapter 7B requires that SPS measures (1) not arbitrarily discriminate among like goods; (2) be based on "scientific principles"; (3) be repealed or abandoned when no scientific basis exists for them; (4) be based on a risk assessment, as appropriate to the circumstances; (5) be applied only to the extent necessary to attain the desired level of protection; and (6) not represent a bad-faith disguised restriction on trade.

3. Nonetheless, each country agreed—when complying with MEA obligations—to implement measures that were "least inconsistent" with NAFTA, if afforded options that were "equally effective and reasonably available."

Chapter 9 deals with technical barriers to trade and standards-related measures. It authorizes parties to choose “the levels of protection considered appropriate” and to adopt measures deemed necessary to attain the desired level of environmental protection, provided they are nondiscriminatory and do not create unnecessary obstacles to trade. While chapters 7B and 9 set limits on regulatory powers, NAFTA’s SPS disciplines are less restrictive than those of GATT. For example, GATT requires in Article XX(b) that any standards-related environmental laws be “necessary” for the protection of human, animal, or plant life or health. GATT dispute settlement panels have interpreted “necessary” as meaning “least trade restrictive.” NAFTA did not adopt the “least trade restrictive” test and differs from GATT in several other aspects.

NAFTA Article 710 explicitly states that the NAFTA provisions of Chapter 7B regarding SPS measures apply rather than those of GATT Article XX(b).

During the NAFTA ratification debate, US officials issued two clarifications regarding Chapter 7B. First, “necessary” is not to be interpreted as “least trade restrictive.” Second, the appropriate “scientific basis” for an SPS measure is a matter for the regulating authority to decide, not the dispute settlement panel.⁴

NAFTA Chapter 9 does not contain an express “least trade restrictive” requirement, which means that governments have greater regulatory flexibility under NAFTA rules than under GATT rules.

In an arbitration case brought by a party under NAFTA’s Chapter 7B or 9, the party challenging the law or regulation carries the burden of proof. By contrast, under GATT, a defending party must prove that its laws are consistent with the provisions of Article XX(b) or XX(g) regarding the conservation of exhaustible natural resources. In addition, in any challenge arising under NAFTA Chapter 7B or 9, the defending party may choose to have the case heard under either a NAFTA panel or a GATT panel—a choice that enables the defending party to apply the NAFTA rules.

North American Agreement on Environmental Cooperation

The environmental side agreement, or the NAAEC, was designed to encourage cooperative initiatives and to mediate environmental disputes. In addition, in 1993 the United States and Mexico signed the Border Environmental Cooperation Agreement (BECA), which furthered their joint efforts to deal with border problems by expanding on the 1983 La Paz Agreement. The border region was defined as the area lying 100 kilometers to the north and south of the US-Mexico boundary. The BECA established two new institutions: the Border Environment Cooperation Com-

4. These clarifications were put forward in the US Statement of Administrative Action issued as part of the legislative package to implement NAFTA in US law.

mission (BECC) and the North American Development Bank (NADBank) to evaluate, certify, and help fund environmental projects.

The NAAEC was more the product of the US legislative battle over NAFTA than the brainchild of collective environmental conscience among the governments of Canada, Mexico, and the United States. Regardless of the motivation, however, the NAAEC provided North America with a trilateral framework for environmental governance (Kirton 2000). Specifically, the NAAEC established a “framework . . . to facilitate effective cooperation on the conservation, protection, and enhancement of the environment” and set up an institution—the North American Commission for Environmental Cooperation (CEC)—to facilitate joint activities.

Part one of the NAAEC contains an ambitious set of objectives that include the protection and improvement of the environment, the promotion of sustainable development, and enhanced compliance with and enforcement of environmental laws and regulations. Part two obligates parties to periodically issue reports on the state of their environment; to develop environmental emergency preparedness measures; to promote environmental education; to develop environmental technology and scientific research; to assess environmental impacts; to use economic instruments for environmental goals; and to “ensure that [their] laws and regulations provide for high levels of environmental protection.”

Part three of the NAAEC establishes the CEC and defines its structure—a Council of Ministers, a Secretariat, and a Joint Public Advisory Committee (JPAC)—its powers, and its procedures. Part four calls for cooperation in the interpretation and application of the NAAEC, the prior notification of proposed or actual environmental measures, and the prompt provision of information upon the CEC’s request.

Part five deals with the resolution of disputes. In case of a “persistent pattern of failure” to enforce an environmental law, a party may request an arbitral panel. The request alone does not trigger arbitration; instead, a two-thirds vote of the Council is needed to form a panel. This panel can require implementation of an action plan to remedy nonenforcement of the offending nation’s environmental law. Failure to comply with the plan can lead to suspension of NAFTA benefits—except when Canada is the defending party. So far there have been no complaints of “persistent failure to enforce,” and hence this mechanism remains untested.

Commission for Environmental Cooperation

The operational goals of the NAAEC can be encapsulated in three parts—to improve environmental conditions through cooperative initiatives, to ensure appropriate implementation of environmental legislation, and to mediate environmental disputes. The CEC is the institutional structure created to achieve all three goals. The CEC consists of a governing body,

the Council of Ministers; a Secretariat, which provides the Council with technical support; and a channel for nongovernmental organization (NGO) influence, namely JPAC.

The Council is composed of “cabinet-level or equivalent representatives” and meets at least once a year. Its functions include the promotion of environmental cooperation; approval of the CEC’s annual budget; oversight of the agreement’s implementation and the Secretariat’s activities; assistance in the prevention and resolution of environment-related trade disputes; development of recommendations on environmental issues ranging from data analysis to enforcement; and cooperation with NAFTA’s Free Trade Commission (FTC) to achieve NAFTA’s environmental goals. For example, Article 10(6) of the NAAEC specifically directs the CEC to assist the FTC on environment-related matters and to act as a point of contact for NGOs and interested citizens. The implementation of Article 10(6), however, has been limited.⁵

Although the NAAEC supposedly facilitates cooperation between the CEC and the FTC, little contact has occurred between them. Since NAFTA entered into force, several NAFTA trade disputes have been “environment related,” yet the CEC has not been involved in any of them. As discussed at length in chapter 4 on dispute settlement, NAFTA Chapter 11 cases involving investment disputes with direct environmental implications are particularly contentious (see box 3.1). Yet, trade and environment officials are only beginning to identify the appropriate ways to implement Article 11B provisions regarding investor-state disputes (Mann and von Moltke 1999).

The Secretariat is a permanent trilateral organization based in Montreal. It carries out the daily work of implementing the agreement, issues reports on environmental matters, and has some investigatory powers. Article 13 of the NAAEC allows the Secretariat to initiate investigations and prepare reports on “any matter within the scope of the annual program.” In addition, Articles 14 and 15 authorize the Secretariat to develop a factual record in response to complaints of environmental nonenforcement submitted by individual citizens or NGOs.⁶ A two-thirds vote of the Council is necessary to proceed either with Article 13 reports or Article 14–15 factual records.

5. Economic ministries in NAFTA parties are reluctant to see Article 10(6) invoked. As an example, when there was discussion about whether the CEC should have an active role in ongoing US-Canada softwood lumber disputes, several governmental agencies (e.g., US Department of Commerce, US Trade Representative, and the Canada Department of Foreign Affairs and International Trade) resisted. We thank John Audley for providing this example.

6. As of March 2005, NGOs filed 34 of the 50 cases. Based on authors’ analysis of CEC submissions; also see Kirton (2000).

Box 3.1 Chapter 11 provisions and environmental regulation

Under Article 1110, the host country cannot expropriate the property of a foreign investor unless the expropriation is explicitly done for a public policy purpose, on a nondiscriminatory basis, in accordance with due process of law, and with fair compensation. These restrictions apply to direct measures and any indirect measures “tantamount to nationalization or expropriation.” This language, and its application in individual cases, has prompted some commentators to complain that Chapter 11 arbitration panels can interpret the “tantamount to expropriation” phrase broadly to encompass “regulatory takings.” Host governments are then required to compensate foreign investors for damages equivalent to the amount of profits lost on account of regulation designed to further domestic social policies (e.g., environment and human health and safety).

Article 1110 is the third most frequently cited breach of NAFTA obligation. Based on Article 1110 claims, both the Canadian and Mexican governments have paid compensation for regulatory measures with environmental overtones. In the *S.D. Myers* decision, the NAFTA Chapter 11 tribunal decided that the real intent of Canada’s ban on the export of PCB waste was to protect the Canadian waste disposal industry from its US competitors. In November 2000, the Canadian government paid about \$3.9 million to the US firm, S.D. Myers. In the *Metalclad* case, the Chapter 11 tribunal decided that the Ecological Decree used to protect rare cactus was arbitrarily invoked and amounted to “an act tantamount to expropriation.” As a result, in August 2000, the tribunal ordered the Mexican government to pay \$16.7 million in damages.

While both NAFTA tribunal decisions had environmental groups up in arms, the compensation represented less than 20 percent of initial claims and did not cover the investment costs of a new facility or lost revenues. Evidently the tribunals cast a skeptical eye not only on regulatory shell games but also on overblown claims. Moreover, learning from the NAFTA experience, recent US FTAs with Chile, Singapore, and Central America have adopted more restrictive language in their foreign investor–protection provisions compared with the original NAFTA text.

The JPAC is an innovative 15-member board that facilitates public input on CEC activities. The JPAC advises the Council on any matter within the scope of the NAAEC and provides relevant information to the Secretariat. Between 1995 and 2004, the JPAC met more than 40 times and provided advice to the Council on a wide range of issues. Most recently, the JPAC recommended that Mexico participate in the North American Pollutant Release and Transfer Register to help enforce regulatory measures. Other suggestions included requiring a national inventory of all polychlorinated biphenyl (PCB) sites in Mexico.

Article 43 of the NAAEC specifies that “each Party shall contribute an equal share of the annual budget of the Commission, subject to the availability of appropriated funds.” Any NAFTA member thus has the ability to curtail the operation of the CEC by reducing or withholding financial support. Since 1995, however, each of the three countries has maintained its \$3 million annual contribution to the CEC budget. Funding at this level

seems inadequate for CEC's mandate and represents an insignificant fraction of the resources dedicated to the environment in North America.⁷

Citizen Submissions under Articles 14 and 15

Submission Process

Articles 14 and 15 of the NAAEC provide a process for any NGO or person to initiate a submission, or complaint, against a government for "failing to effectively enforce its environmental laws" (NAAEC Article 14(1)).⁸ With the CEC Council's approval, the submission process can lead to further investigation and published findings in a factual record under NAAEC Article 15.

The procedures are outlined under the CEC Guidelines for Submissions on Enforcement Matters (1995). After receiving a submission that meets Article 14(1) submission requirements, there is no time limit for the Secretariat review.⁹ If submission requirements have not been satisfied, however, the Secretariat will request the complainant to resubmit within 30 days. If the resubmitted complaint still does not meet formal requirements, the Secretariat will terminate action.¹⁰ Provided that the submission meets the formal filing requirements, the Secretariat will initiate a

7. While small, the CEC budget compares favorably with the UN Environment Program, when both are scaled to the population served. Moreover, the CEC budget has leveraged other public monies directly and indirectly. For example, CEC grants are instrumental for providing financial and technical support to Mexican NGOs. During 1996–2003, CEC grants helped 109 public interest groups strengthen local enforcement during a period when direct financial support from the Mexican government was lacking. See Kirton (2000) and Silvan (2004). We thank Scott Vaughan for helpful comments on an earlier draft.

8. Specifically, to be considered by the CEC Secretariat, a submission must meet six formal requirements, including claims that "a Party is failing to effectively enforce its environmental law and should focus on any acts or omissions of the Party asserted to demonstrate such failure." Other requirements include that the complaint must "identify the applicable statute or regulation, or provision," "contain a succinct account of facts," "appear to be aimed at promoting enforcement rather than at harassing industry," "communicated in writing," and "address factors for consideration identified in Article 14(2)." See JPAC (2001) and CEC (1999).

9. The original guidelines, adopted in October 1995, were later revised in June 1999. A key amendment under the 1999 guidelines requires the CEC Secretariat to explain its reasons for making final determinations under Article 14(1). (In the original 1995 guidelines, the Secretariat only needed to provide reasons for dismissing a submission.) As a result of the change in the 1999 guidelines, citizen submissions have the benefit of past experience. Nevertheless, several submissions have been dismissed for deficiencies under Article 14(1). See JPAC (2001) and Markell and Knox (2003).

10. The Secretariat may also terminate complaints if they are already subject to a pending judicial or administrative proceeding, or if a factual record is not recommended. See JPAC (2001).

second review to determine whether to respond. The Secretariat's response is based on Article 14(2) and depends on four "factors for consideration": (1) Does the complaint allege harm to the complainant? (2) Will the complaint advance the goals of the NAAEC? (3) Have private remedies been pursued? (4) Is the complaint drawn largely from mass media reports? (CEC Guidelines 1995, Section 5).

Once it receives the complaint, the government has up to 60 days to submit a response. During this period, the government can provide additional information to the Secretariat, including whether environmental policies were further defined (subsequent to the facts alleged in the complaint) and whether the government has implemented policies that address the complaint (CEC Guidelines 1995, Section 9). Following the government's reply, the Secretariat decides whether the complaint merits the development of a factual record.

If the Secretariat recommends a factual record, the Secretariat requires a two-thirds mandate from the Council.¹¹ Once the Secretariat submits the draft factual record to the Council, "any party may provide comments to the accuracy of the draft within 45 days thereafter."¹² Again, a two-thirds vote from the Council is necessary to make the factual record publicly available.¹³

Outcome of Submissions

Since the establishment of the CEC in 1995, 50 submissions have been filed with the Secretariat, of which 10 warranted developing a factual record, 28 were terminated, 2 were withdrawn, and 10 are still pending (appendix table 3A.1). Among the citizen submissions on enforcement matters, 17 concerned Canadian enforcement, 24 concerned Mexican enforcement, and 9 concerned US enforcement.

Of the 28 terminated cases, the Secretariat determined that 14 submissions did not satisfy the formal filing requirements under Article 14(1). In eight cases, the Council voted against the development of a factual

11. The submission process will terminate if the Council does not approve the preparation of the final version of the factual record.

12. Specifically, factual records should include (1) a summary of the submission that initiated the process; (2) a summary of the response, if any, provided by the concerned Party; (3) a summary of any other relevant factual information; and (4) the facts presented by the Secretariat. Based on NAAEC Article 15(5). See NAAEC text, www.sice.oas.org/trade/nafta/env-9142.asp (accessed April 2005). See also CEC (1999).

13. After the Council approves making the factual record public, the factual record will be publicly available within 60 days of its submission to the Council. Independent of any Council decision to make the factual record public, a two-thirds vote by the Council also makes the factual record available to the JPAC. See JPAC (2001) and Hufbauer et al. (2000).

record.¹⁴ Of the 10 pending cases, the Secretariat is reviewing two for their adequacy under Articles 14(1) and 14(2): *Coal-Fired Power Plants* and *Crushed Gravel*.¹⁵ In two cases, the Secretariat has not yet decided whether to recommend the preparation of a factual record under Article 15(1).¹⁶ The Council approved the development of factual records for five submissions, and the preparation of one factual record by the Secretariat is pending.¹⁷

While Council rulings and NAAEC factual records are nonbinding, the submission process has yielded positive results. After the final determination in the *Cozumel* case (SEM-96-001) against Mexico, former President Ernesto Zedillo declared the Cozumel Coral Reef a protected natural area in Quintana Roo, creating a precedent for reforming the law of environmental impact (Hufbauer et al. 2000 and Silvan 2004). In the *BC Logging* case (SEM-00-004) against Canada, the Canadian Department of Fisheries and Oceans addressed deficiencies in departmental procedures (CEC 2004b).

On the other hand, concerns are voiced that the Council lacks sufficient authority to implement recommendations flowing from the citizen submission process and that there is an inherent conflict of interest in a Council's determination when one of its member countries violated its own environmental laws. In addition, critics question whether the Council may be predisposed against cases involving the United States, since only one new submission (SEM-04-005) has been brought against the US government in the past five years, and large environmental NGOs are not using the process (Gardner 2004 and CEC 2004b).

Environmental Policy Trends in North America

Different levels of economic development in the three NAFTA countries mean diverse levels of environmental funding and different environmental priorities. In fiscal 2002, the United States spent \$28 per capita on the

14. Reasons for not recommending the development of a factual record usually reflect shortcomings regarding requirements under Articles 14(1) and 14(2). Recommendations against a factual record were made in eight cases: *Quebec Hog Farms* (SEM-97-003), *Lake Chapala* (SEM-97-007), *Great Lakes* (SEM-98-003), *Cytrar I* (SEM-98-005), *Cytrar II* (SEM-01-001), *Mexico City Airport* (SEM-02-002), *Ontario Power Generation* (SEM-03-001), and *Cytrar III* (SEM-03-006).

15. *Coal-Fired Power Plants* (SEM-04-005) was filed on September 20, 2004, and *Crushed Gravel in Puerto Penasco* (SEM-005-001) was filed on January 12, 2005.

16. The Secretariat is considering whether to recommend a factual record for the *Lake Chapala II* (SEM-03-003) and *Quebec Automobiles* (SEM-04-007) submissions.

17. The Council approved factual records in the following cases: *Montreal Technoparc* (SEM-03-005), *Ontario Logging* (SEM-02-001), *Ontario Logging II* (SEM-04-006), *Pulp and Paper* (SEM-02-003), and *Tarahumara* (SEM-00-006). The Council has yet to approve the development of a factual record in the *Alca-Iztapalapa II* case (SEM-03-004).

environment, Canada spent \$17, and Mexico \$23.¹⁸ Where the money is spent also differs markedly: In less-developed areas, environmental priorities are safe drinking water and basic infrastructures that provide minimum living standards. In more prosperous regions, where these basic services are provided, environmental initiatives focus on reclaiming damaged sites and saving flora and fauna.

Two concerns were raised during the NAFTA ratification process—the “downward harmonization” of US and Canadian environmental or public health standards and the creation of a “pollution haven” in Mexico. The evidence shows that neither of these fears has materialized.

United States and Canada

Since NAFTA was enacted, new health and environment-related laws—such as the Safe Drinking Water Act Amendments of 1996, the Food Quality Protection Act of 1996, and the Brownfields Revitalization Act of 2002—have been added to the US regulatory framework. The US Environmental Protection Agency (EPA) set several enforcement records in 1999: It collected \$3.6 billion through enforcement actions and penalties for environmental cleanup, pollution control, and improved monitoring (up 80 percent from 1998) and received \$166.7 million in civil penalties (up 60 percent from 1998), and it brought 3,945 civil, judicial, and administrative actions.¹⁹

However, environmentalists remain concerned about US environmental policy going forward for two reasons.²⁰ First, the proposed fiscal 2006 budget would cut the overall EPA funding by 5.6 percent to \$7.6 billion.²¹

18. The figures were calculated by dividing environmental agencies’ fiscal 2002 budgets in US dollars by estimated population. Data were obtained from www.inegi.gob.mx/, www.ec.gc.ca, and www.epa.gov.

19. See EPA, “1999 Enforcement Actions Under Title VI,” www.epa.gov/ozone/enforce/enforce99.html (accessed February 2005). Since 1999, the EPA has not publicly released enforcement records. See www.epa.gov and “Dingell Criticizes EPA on Enforcement Slump,” *Congress Daily*, January 31, 2003.

20. While no significant environmental legislation has been repealed in the United States, some environmentalists fear that policy initiatives tabled by the George W. Bush administration would weaken environmental safeguards. Recent proposals include opening the Arctic National Wildlife Reserve for oil and gas drilling and energy bill provisions that would exempt companies from the Clean Water Act. See Craig Welch, “For Good or Ill, Bush Clears Path for Energy Development,” *Seattle Times*, September 26, 2004; Sierra Club, “George W. Bush and Clean Water,” www.sierraclub.org/wwatch/cleanwater/index.asp, February 2005; and “Analysis: President Bush Promoting His Clear Skies Environmental Initiative,” *NPR All Things Considered*, September 15, 2003.

21. Specifically, the proposed 2006 Clean Water State Revolving Fund would decrease from \$1.35 billion in 2004 to \$730 million in 2005. See Miguel Bustillo and Kenneth R. Weiss, “Bush Plan Could Drain Effort to Clean Up Waters,” *Los Angeles Times*, February 9, 2005; and Felicity Barringer, “Clean Water Fund Facing Major Cuts,” *New York Times*, February 8, 2005.

Second, there are questions about the enforcement of air and water quality standards. For example, in January 2004, the EPA proposed to modify, *inter alia*, rules issued under the Clean Air Act (1990) that regulate mercury and other toxic emissions from industrial sources. Under the Clear Skies initiative, power plants would be required to cut smog, soot, and mercury pollution by 70 percent by 2020—compared with the original Clean Air Act rules that require power plants to reduce their pollution by 90 percent by 2010. As of March 2005, however, the requisite legislation had not passed Congress.²²

In its Action Plan for Innovation drafted in October 1999, the Office of Enforcement and Compliance Assurance outlined specific commitments that bolster the EPA's regulatory enforcement program. The Audit Policy facilitates compliance by providing incentives for companies to detect and disclose environmental violations. When companies volunteer such information to the EPA, it will waive or substantially reduce civil penalties by 75 to 100 percent (CEC 2001). Between 1997 and 2004, under the Audit Policy, the EPA settled about 600 cases for over 1,000 facilities, with reduced or no penalties levied on 969 of them (EPA 2004).

From an environmental perspective, NAFTA certainly encouraged Mexican production for export markets, but it did not shift export specialization toward more polluting sectors (Schatan 2000). An analysis of the composition of foreign direct investment (FDI) on a sectoral basis indicates that US FDI flows to Mexico in the post-NAFTA period declined in high pollution-incidence sectors such as chemicals and printed products.²³ Moreover, low pollution-incidence sectors, such as automotive products and services, received a growing share of FDI after NAFTA was ratified (Gallagher 2004a). Harmonization efforts also encourage a regionwide convergence toward higher levels of environmental standards that inhibit a regulatory "race to the bottom." In the electricity sector, moreover, NAFTA-associated processes are showing signs of positive outcomes. For example, the San Diego-based Sempra Energy recently built a power plant in Mexicali that meets neighboring California's pollution standards.²⁴

22. In March 2005, the Clear Skies legislation failed on a 9-9 vote in the Senate Environment and Public Works Committee. Several EPA employees and environmental groups point toward the influence of utility lobbyists in shaping the Bush administration's mercury reduction proposal. New regulations issued under the Clean Water Act (1972) illustrate another attempt to modify existing environmental standards. In November 2004, the EPA issued proposals that would allow sewer operators to dump partially treated sewage into waterways. See Cousins, Perks, and Warren (2005) and National Wildlife Federation (2003), www.nrdc.org and www.nwf.org, respectively (accessed March 2005).

23. Kevin P. Gallagher (2004a) rejects the notion that Mexico became a pollution haven under NAFTA. In fact, employment in pollution-prone industries in the United States remained the same during the NAFTA era but actually declined in Mexico. See Kirton (1999).

24. Tim Weiner, "US Will Get Power, and Pollution, from Mexico," *New York Times*, September 17, 2002.

Canada's post-NAFTA environmental record has been less impressive in terms of regulatory activity. Quebec and Ontario adopted more permissive toxic waste disposal regulations to help local businesses compete, thereby giving an incentive for American industries to ship toxic waste to Canadian dump sites.²⁵ In 1998, almost one-third of all US hazardous wastes were shipped to a single facility in Sarnia, Ontario.²⁶ The number of environmental investigators employed by Environment Canada fell from 28 to 17 between 1995 and 1998 as a result of a 40 percent reduction in the agency's budget (BNA 2000). However, Canada's Budget 2005 commits spending of C\$5 billion over five years in environmental initiatives.²⁷

Budget cuts do not seem to have worsened environmental conditions across Canada. According to Environment Canada, Canadian environmental quality is improving: Air pollution levels are falling, and between 1995 and 2002, toxic chemical releases were reduced by 25 percent.²⁸ Moreover, according to the CEC, the Canadian government's efforts to reduce pollution have positively influenced companies such as Blount Canada Ltd., which transformed itself in 1998 from being the third largest emitter of trichloroethylene (TCE), a suspected carcinogen, to completely removing TCE from its plant.²⁹

Mexico

A major environmental concern, especially in the United States, at the time of the NAFTA negotiations and in the run-up to congressional ratification, was the permissive character of Mexican environmental laws and particularly their weak enforcement. But Mexico's efforts to improve its

25. Enforcement of environmental standards in Quebec and Ontario was hindered by significant cuts in both provincial government budgets. We thank Scott Vaughan for clarifying this example, which draws heavily on written comments he provided to an earlier draft.

26. "Borderline Hazards: Controlling the Toxic Waste Trade," *Trio Newsletter of the NACEC* (spring 2002).

27. Two major examples of environmental investments outlined under Canada's Budget 2005 include about C\$5 billion in green infrastructure projects and C\$1 billion in the clean fund to fight climate change and smog. See BNA (2000), Environment Canada (2004), and "Government of Canada Highlights Budget 2005 Green Technology Investments," *Canada Newswire*, February 28, 2005.

28. While Environmental Defence Canada and the Canadian Environmental Law Association (CELA) report that overall chemical emissions jumped by 49 percent from 1995 to 2002, Environment Canada claims that sulfur dioxide emissions declined by 25 percent and carbon monoxide emissions declined by 19 percent over the same period. Jones, Griggs, and Fredricksen (2002). See also Kenneth Green, "Are We Losing the Fight Over Pollution?," op-ed, *The Fraser Institute*, December 22, 2004; and CELA and Environmental Defence Canada (2004).

29. Martin Mittelstaedt, "Ontario is Fifth Most-Polluted Area," *Globe and Mail*, July 21, 2001, A7.

environmental legislation started well before NAFTA was conceived. In 1988, the General Law of Ecological Equilibrium and Protection of the Environment (Ley General del Equilibrio Ecológico y la Protección al Ambiente, or LGEEPA) was approved, strengthening environmental regulation. Public environmental expenditures grew steadily, reaching almost \$2 billion in 1991 (DiMento and Doughman 1998). After NAFTA entered into force, the Mexican government reorganized its administration of environmental issues in a new agency—the Environment and Natural Resources Secretariat (Secretaría de Medio Ambiente y Recursos Naturales, or SEMARNAT). In 1996, the LGEEPA was adapted to the growing environmental challenges by specifically establishing federal, state, and local jurisdiction over environmental matters. Major revisions included limiting disposal of hazardous waste to landfills only when recycling or secondary materials recovery is not technically or economically feasible and prohibiting the disposal of liquid hazardous waste in landfills (Jacott, Reed, and Winfield 2001).

In December 1998, Article 4 of the Mexican Constitution was amended to expand the scope of the LGEEPA by stipulating that “every person has the right to an environment suitable for his development and welfare.” Greater decentralization was achieved in 1998 with the creation of a special line item of the budget for states and municipalities and again in 1999, when more autonomy was given to municipalities under Article 115 of the Constitution. Today, the official Mexican environmental norms are renewed and updated annually.

Environmental standards, however, do not ensure results unless they are accompanied by strong enforcement measures. The Mexican Federal Environmental Protection Agency (Procuraduría Federal de Protección al Ambiente, or PROFEPA) is charged with enforcement matters. In 1995, the Mexican government established an environmental auditing program to promote *voluntary* compliance; the program covers all public-sector industries as well as big private industrial groups. Through voluntary compliance, regulatory agencies can waive penalties and reduce inspections, provided that a regulated industry initiates environmental audits or pollution prevention to meet or exceed regulations. The PROFEPA completed almost 1,000 audits between 1995 and 1999. Almost 1,000 industries signed compliance action plans to correct environmental failures detected during that period. From 1995 to 1999, the 400 action plans entailed more than \$800 million in environmental improvement expenditures in Mexico and cost an estimated \$3.4 billion in environmental management (USTR 1997 and INEGI 2004a and 2004b).

Through its inspection program, the PROFEPA verifies compliance with environmental legislation. Over 1994–99, about 70,000 plants were inspected. Some 23 percent of the facilities complied with the legislation; 74 percent had minor irregularities; and 3 percent of the inspected plants had major environmental flaws. There seems to be little difference in the inci-

dence of violations ascribed to *maquiladoras* compared with all national industrial companies (Jacott, Reed, and Winfield 2001).

In spite of improvements in Mexican environmental protection, numerous challenges remain. While big companies and public enterprises in Mexico have largely embraced the voluntary compliance program, 90 percent of Mexican firms are small and medium-sized companies. Many are financially strapped. Only 50 percent of medium-sized enterprises have wastewater treatment facilities, and most small firms lack environment-friendly equipment. The Mexican government provides some incentives to stimulate investment on environmental equipment, but the incentives have not had the hoped-for results, partly because of deficient marketing and partly because of the financial stress facing small companies.

Some commentators suggest that Mexico does not follow the “environmental Kuznets curve” (EKC) hypothesis since the modest rise in Mexican income per capita over the past decade has not led to a sharp reduction in environmental pollution. According to the EKC hypothesis, economic growth goes hand in hand with environmental degradation at low income levels; however, as income levels rise and reach a “turning point,” public demand for environmental protection becomes sufficiently strong that environmental quality begins to improve. Put another way, environmental quality becomes a luxury good at higher levels of income. At the threshold where further income increases yield environmental improvement, the income elasticity of environmental demand can be said to be greater than one (Yandle, Bhattarai, and Vijayaraghavan 2004).

Grossman and Krueger (1991) were the first to model the relationship between environmental quality and economic growth. They estimated that the turning point for sulfur dioxide emissions ranges from \$4,000 to \$5,000 GDP per capita measured in 1985 US dollars. This is equivalent to about \$6,700 to \$8,450 GDP per capita in 2003 US dollars. Turning-point estimates in subsequent EKC studies range from \$6,700 GDP per capita (in 2003 US dollars) to \$28,100 GDP per capita (in 2003 US dollars), depending on the pollutant, the time period, and the countries covered (Yandle, Bhattarai, and Vijayaraghavan 2004). The heterogeneity of results demonstrates that no single “turning point” relationship fits all pollutants for all countries and time periods.³⁰ At best, EKC studies only roughly describe the relationship between environmental change and income growth.³¹

Given the wide range of EKC turning points and Mexico’s current level of income (about \$6,500 GDP per capita), it is not obvious that Mexico

30. In fact, according to Zarzoso and Bengochea-Morancho (2003), the relationship between sulfur dioxide emissions and income is not consistent with the EKC hypothesis. They use a panel dataset of 19 Latin American and Caribbean countries, including Mexico, during 1975–98.

31. Recent EKC studies dispute the “pollution haven” hypothesis and suggest that more intense trade activities actually lead to lower domestic emissions. According to Cole (2003), expanding trade correlates with lower sulfur dioxide emissions. See also Yandle, Bhattarai, and Vijayaraghavan (2004).

should be on the downward path.³² Nevertheless, based on the original Grossman-Krueger estimate that the upper bound of the turning point is \$5,000 GDP per capita (measured in 1985 dollars), some commentators fault Mexico for not behaving according to the EKC hypothesis.³³ According to Gallagher (2004a, 2004b), while “Mexico has passed the theoretical turning point of \$5,000 GDP per capita,” environmental degradation in Mexico “overwhelmed any benefits from trade-led economic growth.” Gallagher based his assertion on a recent Instituto Nacional de Estadística, Geografía e Informática (INEGI 2004b) study that the financial cost of environmental degradation was about \$36 billion per year during the late 1990s, while the benefits of economic growth were about \$14 billion per year during the same period.³⁴

However, Gallagher compares apples with oranges. According to INEGI’s calculations, environmental costs are slowly declining as a percent of GDP. Costs were estimated at 10.8 percent in 1997 (the first year of INEGI’s calculations) and fell to 10 percent in 2002. There is no indication, in INEGI’s calculations or elsewhere, that *higher* Mexican GDP led to a *rising* share of environmental costs. The \$36 billion cost figure cited by Gallagher is essentially the *inherited* pre-NAFTA level of environmental degradation experienced in Mexico. Based on INEGI statistics—which measure average rather than marginal relationships—the strongest claim that an environmentalist such as Gallagher might make is that when Mexican GDP increases by \$14 billion annually, about 10 percent of the measured growth, or \$1.4 billion annually, is offset by higher environmental costs. This is a far cry from the complaint that Mexican economic growth is a mirage, because it has been swamped by environmental costs.

Returning to basics, the EKC hypothesis is no more than a statistical assertion about the strength of market forces for and against pollution at different levels of income. The object of environmental regulation is to reinforce whatever market forces may exist to curtail pollution. Whether or not an EKC “turning point” describes contemporary Mexico, greater public efforts can certainly reduce the extent of environmental degradation that characterizes Mexican urban areas.

The US-Mexico Border

For over 30 years, the border area has undergone dramatic growth in population and industrialization. Unfortunately, the region’s infrastructure

32. GDP per capita is in US dollars at current prices. Data are based on IMF *World Economic Outlook Database* 2005.

33. We thank Frank Loy and Paul Joffe for drawing our attention to this debate.

34. Measuring the costs of environmental deterioration is a difficult task. For details of the methodology used, see INEGI (2004b).

has not kept pace, leading to inadequate facilities for water supply, sewage treatment, and hazardous and solid waste disposal.

The problems on the Mexican side of the border result primarily from inadequate municipal finance and inadequate investment in environmental infrastructure. But an array of artificial financial constraints hobble Mexican municipalities. They depend on revenue-sharing from the federal and state governments to finance infrastructure projects. The revenue available to most communities is uncertain, because it depends on allocations made annually by legislative decree. Municipalities cannot raise capital outside the domestic market, since the Mexican Constitution prohibits states and municipalities from borrowing in foreign currencies or from foreign creditors.

As an alternative, communities can turn to Mexico's National Bank of Public Works and Services for environmental infrastructure project loans. However, most communities cannot reliably repay the principal and interest because their regular tax receipts are meager. Property taxes tend to be very low and poorly collected, while the value added tax paid on purchases of goods and services is collected and administered by the central government in Mexico City. Only 3 percent of the taxes that the Mexican federal government collects directly returns to the municipalities. In sum, dependence on the federal government, limited fiscal authority, and the absence of a civil service tradition (administrative staff turns over with every change of government) all contribute to impede progress on municipal environmental projects.

By comparison, US border municipalities have better environmental infrastructure. Property and sales tax payments on the US side of the border contribute substantially to the tax base of local communities, and these tax revenues are used to fund basic infrastructure. Local governments in the United States can also raise funds for infrastructure by issuing bonds. Civil service traditions generally provide for continuity of municipal administrators, ensuring repayment and keeping financing costs low.

The municipal finances of Tijuana and San Diego illustrate the disparity in resources available to local governments on opposite sides of the border. Tijuana's 2002 municipal revenue was \$196 million (including \$73 million from the federal government) to service a population of 1.2 million. In 2000, San Diego County's municipal revenue was \$3 billion (including \$74 million from the federal government and \$1.7 billion from the state government) to service a population of 2.8 million. In other words, on a per capita basis, San Diego's municipal resources were 6.6 times as large as Tijuana's.

Another twin-cities comparison illustrates the same point: El Paso (population of 0.7 million) and Juárez (population of 1.2 million). El Paso's revenue was \$331 million in 2000 (including \$80 million from the federal government). On the Mexican side of the border, the revenue of the municipality of Juárez was \$159 million in 2002 (\$43 million from the federal

Table 3.1 Growth of cities near the US-Mexico border

City	State	Population			Growth, 1990–2000 (percent)
		1990	1995	2000	
Mexico					
Ciudad Juárez	Chihuahua	798,499	1,011,786	1,218,817	52.6
Tijuana	Baja California	747,381	991,592	1,210,820	62.0
Nuevo Laredo	Tamaulipas	219,468	275,060	310,915	41.7
United States					
El Paso	Texas	595,350	654,250	682,111	14.6
San Diego	California	2,512,365	2,623,697	2,824,809	12.4
Laredo	Texas	134,430	167,466	194,868	45.0

Sources: INEGI (2004a, 2004b), BEA (2004).

government). On a per capita basis, El Paso had 3.6 times the resources of Juárez.³⁵

The growth of twin-plant activity on the border has contributed to environmental strains. Maquiladora incentives (favorable tariff and tax treatment) were first established in 1965 to attract foreign investment and provide employment for Mexican workers in the aftermath of the US *bracero* program. The maquiladora program succeeded especially in the border region. But the industrial boom was not accompanied by adequate infrastructure investments to handle industrial wastes and residues or by sewage treatment plants to accommodate the rapidly expanding border population. In 1997, Mexico's National Water Commission estimated that only 34 percent of collected wastewater was treated. Deplorable environmental conditions are the consequence.

Table 3.1 shows the growth of three pairs of twin cities between 1990 and 2000. All six cities grew faster than their respective national averages during this decade. Both sides of the border at Laredo have been growing at about the same rate—in excess of 40 percent over ten years. However, Tijuana and Juárez have grown much faster (62 and 53 percent, respectively) than their US counterparts, San Diego and El Paso (12 and 15 percent, respectively). The growth in population puts stress on ecosystems, but the fact that the population growth is concentrated on the southern side of the border, where fewer resources are devoted to environmental protection, makes the situation worse.

Despite regulatory and enforcement efforts, the maquiladora industry still poses a major environmental challenge. The number of maquiladora plants has increased by about 30 percent since the launch of NAFTA, from

35. El Paso County and San Diego County revenue from 1999 to 2000, US Census Bureau Government Finances 1999–2000 Report, www.census.gov/govs/estimate/00allpub.pdf. Municipal revenue information for Tijuana and Juárez from INEGI's Sistema Municipal de Bases de Datos (SIMBAD) program, www.inegi.gob.mx.

2,157 in January 1994 to about 2,817 in May 2005, providing jobs to almost 1.2 million workers (May 2005) and accounting for 46 percent of Mexico's total exports.³⁶

The maquiladora boom is stressing communities along the border, which find themselves struggling for tax money to pay for roads, schools, electricity, and sewage systems. Tax revenues from the maquiladoras flow to the Mexican federal treasury. Even if all maquiladora taxes were returned to the states and municipalities, local governments would still face a revenue shortfall. A long-term solution requires that Mexican states and municipalities have real authority to collect and spend property taxes and infrastructure fees.

Hazardous waste generated by many maquiladora plants is a persistent and troublesome problem. The Mexican National Ecology Institute estimated that, in 1997, over 20 percent of the hazardous waste generated in Mexico came from maquiladora industries. Under the La Paz Agreement (Article XI, Annex III), "hazardous waste generated in the processes of economic production . . . for which raw materials were utilized and temporarily admitted, shall continue to be readmitted by the country of origin of the raw materials in accordance with applicable national policies, laws, and regulations." In other words, the United States must admit hazardous waste that maquiladoras generate from US raw materials; however, Mexico can instead choose to dispose of the waste locally. The La Paz Agreement requires the parties to notify one another about transboundary shipments of hazardous substances. Under Article III of the agreement, the country importing hazardous waste can regulate the method of shipment and disposal. As a policy matter, Mexican waste management laws require that wastes produced from US materials be returned to the United States for treatment or disposal. In other words, Mexico has generally required that hazardous waste from maquiladoras be shipped back to the United States. With the rapid growth of maquiladoras, there has been a concomitant increase in shipments to US disposal facilities. But the La Paz system has many shortcomings, as we describe below.

At NAFTA's launch, the Instituto Nacional de Ecología (INE) estimated only 1 million out of 8 million tons of hazardous waste generated in 1994 were adequately controlled. The EPA implemented a new hazardous waste tracking program known as HAZTRAKS in 1993 to track the amount of hazardous waste imported into the United States from Mexico and to regulate associated environmental violations. Mexico adopted a similar system, known as Sistema de Rastreo de Residuos Peligrosos. The HAZTRAKS database covers approximately 800 companies, or about 40 percent of all maquiladoras located in border states that shipped either

36. Based on the INEGI Banco de Información Económica (BIE) database, dgcnesyp.inegi.gob.mx/cgi-win/bdieintsi.exe/NIVJ10000100020001#ARBOL (accessed on August 10, 2005).

hazardous or nonhazardous waste from Mexico to the United States during 1997.³⁷ Nevertheless, reporting of returned hazardous waste slipped from 65 percent of maquiladoras in 1996 to 38 percent in 1998–99 (Varady, Lankao, and Hankins 2001). There are numerous “leakages” from the disposal and reporting systems: illegal dumping in the desert outskirts of Juárez, transportation spills, and abandoned factories—all followed or preceded by nonreporting.

The absence of environmental infrastructure provides economic incentives to dump illegally.³⁸ For example, in 1995 the Texas Natural Resource Conservation Commission surveyed 32 counties along the US-Mexico border and found a total of 1,247 illegal dump sites and estimated there were another 20,000 (Reed, Jacott, and Villamar 2000). According to a National Law Center for Inter-American Free Trade study, Mexico has only two fully operational treatment, storage, and disposal facilities (Reed 1998). Many maquiladoras are unwilling to pay the costs of legal dumping in a market of few suppliers. The more costly it is to comply with US environmental laws, the more incentives there are to illegally dump hazardous waste within Mexico. To make matters worse, a great deal of waste, hazardous and otherwise, is exported from the United States to Mexico.³⁹

The result is numerous contaminated sites. Inadequate funding hinders cleanup of these sites. Superfund legislation does not cross the Rio Grande, and US public funds are not available to help dispose of toxic materials within Mexico. The problem exists throughout Mexico, not just along the border.⁴⁰ However, since 1994, private investment in hazardous waste collection, storage, and management facilities has sharply increased (NADBank 2002). Mexican authorities are also responding to the lack of available landfills by establishing a series of Integrated Centers for Handling, Recycling, and Disposal of Hazardous Waste (CIMARIs). To resolve waste management problems, CIMARIs work jointly with INE-approved companies that provide technology for waste treatment and recycling. By 1998, eight Mexican companies and their US partners had helped establish CIMARIs (Reed, Jacott, and Villamar 2000; Jacott, Reed, and Winfield 2001).

37. In 1997, INE received about 10,000 hazardous waste reports, covering about 10 percent of all companies, though accounting for about 30 percent of the estimated waste. See www.ine.gob.mx.

38. The World Bank (1994) noted that an estimated 80 percent of hazardous waste is not repatriated but remains stored on-site or is illegally disposed of in Mexico.

39. INE reports that the amount of waste flowing from the United States to Mexico is 20 to 30 times greater than the amount shipped from Mexico to the United States. See Reed (1998).

40. However, the Dirección de Residuos Sólidos Municipales reported the number of legal disposal sites was 76 in 2000. Hazardous waste disposal statistics reported in the next paragraph from INEGI, www.inegi.gob.mx.

Integrated Environmental Plan for the Border Region

For over a century, US and Mexican authorities have recognized the importance of cross-border environmental cooperation. In 1889, a bilateral treaty created the International Boundary Commission. In 1944, the Water Treaty converted the commission to the International Boundary and Water Commission. In 1983, the US and Mexican governments adopted a broader agenda with the signing of the Agreement for the Protection and Improvement of the Environment in the Border Area (the La Paz Agreement). During the course of NAFTA negotiations, the EPA and its Mexican counterpart (then known as SEDUE) developed an integrated environmental plan for the border region calling for the establishment of six working groups on water, air, solid waste, pollution prevention, contingency planning and emergency response, and cooperative enforcement and compliance. In 1996, the plan was updated and expanded, becoming the Border XXI Program.

Under the Border XXI Program, the United States and Mexico established work groups to implement specific objectives for border cleanup through infrastructure development and decentralized environmental management. Considerable effort has been expended on negotiating agreements with border states and tribes. The “Coordination Principles” agreement in May 1999, which was signed by all 10 border-state environmental agencies, together with EPA and SEMARNAT at the federal level, formalized binational interagency coordination. Environmental compliance was further institutionalized by the “Seven Principles” public-private agreement between the US-Mexico Chamber of Commerce on the one hand and BECC, EPA, and SEMARNAT on the other.

NAFTA tried to advance recovery efforts at the US-Mexican border by creating the NADBank and the BECC. These institutions are mandated to develop, certify, and finance environmental infrastructure projects along the US-Mexico border area. These specialized agencies are now examined in greater detail.

Border Environmental Cooperation Commission

The BECC provides technical assistance to border communities and certifies projects for consideration for NADBank finance. It focuses on water supply, wastewater treatment, and solid waste disposal. Under its technical assistance program, the BECC helps communities prepare their project proposals for certification. By December 2004, the BECC had authorized \$30.3 million in technical assistance funds for 228 infrastructure projects in 131 communities (35 percent of the funds went to Mexican communities and 65 percent to US communities). Most of the funding was devoted to water and wastewater projects and a lesser amount to solid waste projects. In 2004, the BECC had certified 105 infrastructure projects that ultimately will entail total estimated expenditure of \$2.2 billion. Of these

projects, 36 are located in Mexico and 69 in the United States; they will benefit over 8 million border residents (NADBank-BECC 2004).

North American Development Bank

NADBank provides managerial assistance, direct loans, and loan guarantees that facilitate additional project finance from other lenders for BECC-certified environmental infrastructure projects. In addition, NADBank administers some EPA grant resources. Mexico and the United States contribute equally to NADBank resources. Both countries have fully authorized their \$1.5 billion capital commitments. Of NADBank's \$3 billion in capital, 15 percent (\$450 million) consists of actual cash; the remaining \$2.55 billion takes the form of callable capital—cash that the governments must provide to NADBank to meet debt obligations or guarantees, if required.⁴¹

To build capacity among border communities, the EPA, NADBank, and the World Bank have funded technical assistance to help state and local officials enforce environmental monitoring. Through NADBank's Border Environment Infrastructure Fund (BEIF), the EPA contributed an initial \$170 million for water and wastewater infrastructure projects. By December 2004, \$516.2 million in BEIF grant funds had been used for 54 construction and transition assistance projects in the poorest communities (NADBank-BECC 2004). NADBank also finances environmental projects through its own Loan and Guaranty Program and Solid Waste Environmental Program (SWEP) funds.

While NADBank's role as an investment banker is necessary to facilitate financing, its rates are unaffordable for smaller US communities with limited tax bases. Insufficient revenues to support financing also hinder Mexican border communities. Between 1994 and 2004, NADBank had committed to 29 projects in Mexico totaling up to \$136 million.⁴² In the early years, Mexican communities faced peso interest rates between 26 and 27 percent for 15-year NADBank loans.⁴³ Large US communities

41. As of March 2004, NADBank had received \$348.8 million in paid-in capital and \$1.976 billion in callable capital, representing 77.5 percent of its total subscribed capital. See www.nadbank.org/english/general/general_frame.htm (accessed on April 22, 2005), NADBank-BECC (2004), and US Treasury (2005).

42. Based on total financing disbursed for NADBank projects in Mexico as of December 2004. NADBank disbursed about \$131 million for US projects. While 29 out of 36 projects in Mexico had total financing disbursed, the status of the remaining seven projects is unclear. NADBank does not explain these projects or their financing status. See NADBank-BECC (2004).

43. *Financial Times* Special Report, February 2001. By comparison, in 1999, the bank had two loans to US communities with variable rates ranging between 5.15 and 7.38 percent. The bank demanded higher rates from Mexican communities to cover its exposure to currency conversion risk and various default factors. US General Accounting Office Report to Congressional Requesters, "U.S.-Mexico Border: Despite Some Progress, Environmental Infrastructure Challenges Remain" (March 2000). See David Hendricks, "NADBank Is Doing More Good, Now That It's Allowed To," *San Antonio Express-News*, October 1, 2003.

often did not apply for NADBank loans as they found more attractive alternatives through various sources, including state revolving funds and municipal bonds. There is, however, growing momentum in NADBank-financed activities.⁴⁴ In August 2003, for example, NADBank provided a \$28 million loan to pave roads in Baja border cities and is expected to lend up to \$487 million for similar projects.

In the meantime, many Mexican border communities have sought infrastructure financing from other sources. State officials in Baja California, for example, negotiated a \$240 million loan agreement with Japan's Financial Overseas Economic Development Fund, at rates lower than NADBank's, to help finance wastewater treatment and sewer improvement projects in Tijuana and Mexicali. NADBank still plays a role, though smaller than originally envisaged. For example, the bank created an \$80 million water conservation fund to finance irrigation district projects along the Rio Grande.⁴⁵ The bank also approved \$11.8 million in loans and grants for three small projects: a wastewater facility in Ciudad Acuña, a sanitary landfill in San Luis Rio Colorado, Mexico, and wastewater system improvements in Fabens, near El Paso.

To address criticisms that NADBank offers higher-cost financing in comparison with municipal bonds or state revolving funds, BECC-certified environmental projects are directly financed by the Loan and Guaranty Program, which is made more attractive through the Low Interest Rate Lending Facility (LIRLF) adopted in 2002. By December 2004, NADBank had authorized 24 Loan & Guaranty Program loans with a face value of \$103.9 million. The World Bank's Programa Ambiental de la Frontera Norte de Mexico (PAFN) covering six Mexican border states has also provided funding to advance the Border XXI Program's goals.

Summing up, as of December 2004, NADBank has approved \$697 million in loans and grants for 85 infrastructure projects. Most of the money (about \$516 million) is in the form of grants; NADBank directly loaned only about \$24 million.⁴⁶ In total, these 85 projects are expected to cost

44. In March 2005, Senator Hutchison (R-TX) introduced legislation to allow NADBank to guarantee tax-exempt bonds. Sponsors of the legislation argue that it would help NADBank leverage capital, help smaller communities to sell debt, and reduce borrowing costs. See Emily Newman, "Federal Guarantees: Bill Would Let NADBank Back Tax-Exempts," *The Bond Buyer*, March 28, 2005; and David Hendricks, "Border Would Benefit Under NADBank Legislation," *San Antonio Express*, March 23, 2005.

45. David McLemore, "New \$80 Million Conservation Fund May Ease Border Dispute Over Water," *Dallas Morning News*, August 21, 2002.

46. According to John B. Taylor, US undersecretary of the Treasury, NADBank has directly loaned just \$23.5 million in low-interest loans to finance projects since 1996 and disbursed only \$11 million of that money, despite having a lending capacity of \$2.7 billion. The majority of the approved \$697 million, about 74 percent or \$516 million, is in the form of grant funds from the NADBank Border Environment Infrastructure Fund. See Taylor (2002). See also Miramontes (2002) and NADBank-BECC (2004).

\$2.3 billion (NADBank-BECC 2004). Investment in Mexico is scheduled to be around 57 percent of the projected \$2.3 billion expenditure, despite the fact that environmental conditions are much worse on the Mexican side of the border.

Recognizing this imbalance, NADBank established a financial institution in Mexico, the *Corporación Financiera de América del Norte* (COFIDAN), to supplement its normal financing channels and facilitate lending to Mexican public institutions. As mentioned earlier, the Mexican Constitution contains a provision that prohibits Mexican states and municipalities from borrowing from foreign entities or in foreign currencies. With the creation of COFIDAN, NADBank can lend directly to municipalities. COFIDAN has made 12 loans to Mexican public entities (totaling \$56.3 million) (NADBank-BECC 2002). To repeat an earlier point, however, the basic problem is the capacity to repay, which is severely constrained by the limited taxing authority of Mexican municipalities.

If the indicated relationship between funds granted, loaned, or guaranteed by NADBank and the resulting expenditure on infrastructure is maintained (\$1 lent = \$3.30 investment), NADBank and its program affiliates would have to grant, lend, or guarantee about \$2.42 billion to achieve the \$8 billion investment in infrastructure suggested in 1993 as minimally necessary for the recovery of the border region (Hufbauer and Schott 1993). NADBank activity, including funds administered for the EPA, has fallen well short of this level. Meanwhile, municipalities on the Mexican side have not had the resources for local cleanup programs. In 1995, the total population along the border was 10.6 million. In 2000, the estimated population in the border region was about 12 million. Border population is expected to increase to about 20 million by 2020. Allowing just for larger population, the minimal level of environmental cleanup expenditure today is substantially greater than it was a decade ago.

Three problems are contributing to the slow pace of environmental recovery at the border. First, no comprehensive assessments have been made of required environmental outlays. In other words, political leaders do not have reliable targets to shoot at. Second, the Mexican tax system fails to capture even a modest fraction of the spiraling property values to improve public infrastructure. And third, without fiscal autonomy, many Mexican border communities are too poor to finance environmental projects.

In addition to its financing mission, NADBank carries out other environmental activities. NADBank's Institutional Development Cooperation Program (IDP) provides assistance for studies that enhance the management of public utilities and training for utility managers and staff. The goal is to ensure the long-term viability of infrastructure projects. The IDP became fully operational in the spring of 1997 and is currently involved in 102 projects assisting 68 communities. The IDP projects are funded with NADBank earnings, and the annual budget more than doubled from \$2 million in August 1997 to \$5 million in 2004 (NADBank-BECC 2004).

NADBank managers are pushing for an expanded mandate to increase the bank's lending capacity. The proposals would make funds available for a greater range of environmental projects. At present, NADBank projects have to be related to water, wastewater treatment, and solid waste; the proposals would add new sectors to the list. These proposals also seek to cover a wider geographic area, expanding NADBank coverage from 100 to 300 kilometers north and south of the US-Mexico border. Finally, they would enlarge financial subsidies by providing more grants and doubling NADBank's low interest rate lending capacity for the poorest communities.

The Mexican and US governments have not yet agreed on the mandate change. Mexican President Vicente Fox has suggested that the capital base of NADBank be expanded from its present \$3 billion to at least \$10 billion, but in addition to border programs he wants to help fund more Mexican projects beyond the border region. Rather than allocating additional funding to NADBank, the George W. Bush administration was initially attracted to US Treasury Department proposals to merge the BECC and NADBank under a single institution in late 2001. However, facing opposition against the merger, in March 2002, Presidents Fox and Bush finally agreed to implement most initiatives outlined in a bipartisan bill sponsored by US Congressman Charlie Gonzalez (D-TX). Some of the bill's proposals to reform the BECC and NADBank include (1) launching a third-party audit of both NADBank and the BECC to identify structural efficiencies; (2) increasing the US contribution to BEIF consistent with NADBank's five-year outlook; (3) creating a single board of directors for NADBank and the BECC; and (4) increasing the capital devoted to NADBank's LIRLF (which offers lower interest rates for border environmental projects).⁴⁷

Conclusions and Recommendations

In determining whether NAFTA has improved or damaged the North American environment, it is critical to define the relevant baseline for comparison. Most environmentalists believe that conditions have deteriorated, partly because tougher environmental clauses were not built into the agreement. Most negotiators disagree: The side agreements the Clinton administration crafted in 1993 stretched the patience not only of Mexico and Canada but also of Republicans in the US Congress. In our view, the relevant counterfactual was not tougher provisions, but no NAFTA. Without NAFTA, the Mexican government would have had less incentive to pass environmental legislation or to improve its enforcement efforts,

47. Specifically, Presidents Bush and Fox agreed to create a \$50 million grant program funded by NADBank's paid-in capital. See US Department of Treasury press release, NADBank fiscal 2002; Congressman Gonzalez press release, March 2002; and "Senate Passes Sweeping NADBank Reform," *States News Service*, March 12, 2004.

and the achievements, modest though they are, of the CEC, NADBank, and BECC would not exist.

Despite the positive environmental incentives of NAFTA and the achievements of the environmental institutions created by the side agreements, NAFTA's environmental record affords ample room for improvement. Toward this end, we offer several recommendations.⁴⁸

With Regard to the NAFTA Environmental Provisions

NAFTA countries should highlight the success of Chapters 7B and 9. These chapters demonstrate that free trade need not undermine appropriate regulatory authority and sovereignty. The fact that no claims have been litigated under these provisions shows that NAFTA countries recognize each other's right to establish appropriate levels of protection.

With Regard to NAAEC

The NAAEC was the first comprehensive environmental cooperation agreement associated with a trade agreement. However, it has two major shortcomings. First, the "nonenforcement" mechanism contained in Articles 22–36 of the NAAEC is disappointing. It deceives those who identified this mechanism with the "teeth" of the side agreement, and it continues to irritate Canadians and Mexicans, who begrudgingly consented to these procedures.⁴⁹ Indeed, the Canadians did not fully consent. This mechanism should be revised; its design should be changed to make it more functional. The potential withdrawal of NAFTA benefits should be replaced with civil fines, which would avoid differential penalties between Mexico and Canada and forestall the interruption of trade in sectors unrelated to the environmental practices in question.

Second, NAFTA governments have not given adequate support to the institution created to carry out the side agreement's goals—the CEC. In addition, CEC performance would benefit from a more focused agenda. Since its creation in 1994, the CEC has tried to be all things to all people—on a modest annual budget of \$9 million. It has played too many roles to be truly effective in any of them: environmental information center, developer and controller of environmental indicators, promoter of environmen-

48. Chapter 4 on dispute settlement addresses the thorny issue of Chapter 11 investor-state disputes.

49. During NAFTA side-letter negotiations, the Mexican Ministry of Economy viewed environmental obligations as a potential threat to market liberalization. The ministry feared that environmental standards would be used for US protectionist purposes, rather than a genuine attempt to improve the environment. According to this view, Mexico's signature on the NAAEC was a "big mistake." See Deere and Esty (2002).

tal awareness and clean technology, producer of environmental reports, founder of environmental community projects, and arbiter of disputes. While the CEC launched an alphabet soup of initiatives (Trade and Environment, Strategic Plan, NABCI, SCCC, and NAGPI), the CEC has also been a model for openness and transparency. In an effort to build intergovernmental cooperation, the CEC could strengthen its focus on substandard environmental conditions that are closely linked to trade expansion and government inaction.⁵⁰

If NAFTA members are serious about addressing common environmental problems, they will devote much greater ministerial attention to the CEC and significantly boost its minuscule budget. That said, foreseeable budget constraints should compel the CEC to focus its activities. With existing and foreseeable resources, the CEC can do two things well: (1) It can make use of the investigatory powers of Articles 13–15 to draw attention to environmental problems that are closely connected to North American trade; and (2) it can become a reputable source of North American environmental data to facilitate better policymaking.

Investigatory Powers

The CEC should produce reports under Articles 13–15 that shed light on specific environmental problems and lagging environmental enforcement where there is a North American trade connection. Unlike the past, the CEC should be authorized to propose solutions and issue recommendations that would encourage cooperative initiatives and prod enforcement of existing environmental laws in NAFTA countries. Article 13 reports, together with the factual records resulting from Article 14 citizen submissions, have had some positive results. In June 2002, the CEC released its multiyear Article 13 report on electricity restructuring, which addressed complex issues and reflected extensive public input. As a result, the CEC electricity report garnered significant attention from policymakers in Europe and elsewhere for both the content and process.⁵¹ However, since 1995, only four Article 13 reports have been developed, and only 10 out of 50 citizen submissions have led to the development of factual records (see appendix table 3A.1). Against this background, NAFTA citizens have come to the disappointing but realistic conclusion that a trip to the CEC will not generate enough policy payoff to justify the time and energy required.

A revised and revived citizen submission process of the NAAEC should include provisions to ensure a more expeditious process. Furthermore, it

50. Some scholars note that OECD working groups for environmental enforcement regularly reference the CEC *Taking Stock 2001* report, which analyzed North American data to identify opportunities for pollution reduction. See CEC (2004a).

51. We thank Scott Vaughan for providing this example, which draws heavily on written comments he provided to an earlier draft. See CEC (2002).

should *require* the CEC to determine whether nonenforcement has occurred and to offer appropriate recommendations.

Environmental Data

The CEC should become the premier source of “hard” environmental data comparing levels and trends in Canada, Mexico, and the United States. As the recent CEC ten-year review suggests, the CEC could create a web-based North American Clearinghouse on Trade and Environment Linkages (CEC 2004b). To do so, it needs to refocus its publication style from long descriptive reports to comparative statistics modeled on the OECD’s *Economic Outlook* and the IMF’s *World Economic Outlook*. In its first five years, the CEC wrestled with heterogeneous environmental indicators and poor data collected in the three countries. Building on its prior work, the CEC should now be able to provide comparable indicators for the three countries, saving NAFTA citizens the trouble of searching for “hard” information hidden in discursive reports.

To the extent that data gaps remain, the CEC should invest in the development of useful and reliable indicators and data.⁵² With the publication of clear and concise reports, the CEC would establish a reputation for providing useful information to interested citizens. In addition, readily available and highly regarded reports would allow the CEC to use the “public shame factor” to pressure governments to improve their environmental performance.

One of the major obstacles to efficient management of the North American environment has been the absence of comprehensive triennial assessments of environmental conditions in Canada, Mexico, and the United States, especially along the border. The absence of consistent environmental indicators makes it difficult to evaluate the environmental impact of NAFTA and to set priorities for public spending. We recommend the publication of a triennial North American environmental “report card” (in the style of the Fraser Institute’s *Environmental Indicators—Critical Issues Bulletin*) and the organization of a public annual conference on the state of the environment in North America. The three NAFTA governments should provide funding for high-quality independent environmental analysis to be presented in these annual conferences. Similarly, the CEC, the BECC, and NADBank should take this opportunity to report on their activities, call attention to particular environmental problems, and present evaluation reports commissioned from independent consultants.

52. An example of a successful index that measures environmental sustainability is the Environmental Sustainability Index (ESI), created by the Yale Center for Environmental Law and Policy. ESI was released at the World Economic Forum in January 2005. Information about ESI is available at www.yale.edu/esi/ (accessed in March 2005).

With Regard to the US-Mexican Border

NADBank and the BECC have launched several projects to address the difficult environmental problems on the US-Mexico border. In addition, they provide an umbrella for interagency meetings between US and Mexican environmental agencies. As a result, collaboration has improved between local, national, and international agencies. Nevertheless, border conditions are bad and in some respects may be getting worse. NADBank and the BECC should assess what needs to be done in border communities to reach environmental levels comparable to those in nearby US cities and interior Mexican cities that are known for good environmental practices. As an example, NADBank and the BECC could encourage environmental enforcement by establishing and funding mechanisms for transferring environmental technology to Mexico.⁵³

NADBank and the BECC should also promote financing mechanisms to ensure that worthwhile projects are implemented over the next decade. For NADBank to respond effectively to the needs of the border area, it should first assess the extent of the problem, examining each environmental problem in turn. Costs should be measured against two standards of environmental quality: representative nonborder communities in the United States and in Mexico. These independent assessments of the existing environmental problems, work programs necessary for recovery, and estimates of the associated costs required to provide cleanup and infrastructure in these border communities would achieve several goals. They would give the public a better appreciation of the price tag, help establish the priorities, and focus attention on finding new revenue sources.

In that regard, NADBank should offer appropriate financing (backed by environmental assessment districts and user fees) for hazardous waste sites in Mexico—near the plants that actually generate the waste. While the La Paz Agreement authorizes back-haul shipments of waste to the United States, there has never been much economic logic to this disposal system. The shipments are expensive and usually involve the transfer of dangerous cargo from one truck to another at the border. All too often, shippers simply dump their loads en route to US hazardous waste sites. Locating hazardous waste sites within Mexico—accompanied by much tighter surveillance systems—will reduce the incidence of opportunistic dumping in the Mexican desert.

As noted earlier, NADBank provides about one-fourth of the funding for infrastructure projects. The rest of the funding comes from international institutions and federal, state, and local governments. Hence border infrastructure projects must compete with other important goals for scarce

53. We thank Paul Joffe for providing the example in this paragraph, which draws heavily on written comments he provided to an earlier draft. See Joffe and Caldwell (2003).

public funds. However, there should be no shortage of funding. The border area is booming, and property values are soaring. Within this thriving economy, there are adequate resources to pay for the environment. To tackle the funding problem, NADBank and the BECC should create environmental assessment districts along the border region. These local institutions should be funded with environmental fees assessed on industries and housing in the area. The “polluter pays” principle should govern the setting of fees. Under the “polluter pays” principle, the direct link between the environmental impact of an industry or other local activity (such as operating old, polluting cars) would provide a disincentive to pollute and in turn would reduce future environmental problems. For activities that cannot be directly charged through a fee system, the assessment districts should rely on property taxes. Local taxes would both provide additional funding and make communities and industries more environmentally aware.⁵⁴

Summing Up

In conclusion, the achievements of NADBank and the BECC fall well short of the aspirations of the environmental community. To improve the North American environment, especially at the US-Mexico border, these institutions, along with the CEC, should be strengthened in the next phase of NAFTA. The NAAEC was created in the context of a trade agreement to address environmental issues related to NAFTA. To gain public support for the trade agreement, US officials sold the environmental side agreement as the panacea for the environmental problems of North America. Political rhetoric grossly inflated expectations about the potential achievements, and the actual accomplishments were almost destined to disappoint.

The environmental problems of North America were not, at their core, the result of NAFTA, nor was the NAAEC devised to address all of them. It is difficult to quantify what amount of environmental deterioration is a direct consequence of increased trade. Furthermore, even if NAFTA is the main force, it is certainly not the sole driver of North American trade expansion.

Putting these linkages aside, significant improvements can be made to get better results from NAFTA’s environmental institutions. The way for-

54. Recent World Bank studies point in this direction. Research found that traditional regulation relying on fines, plant shutdowns, prison sentences, and the like is not always successful because it requires strong enforcement mechanisms—monitoring, analysis, legal proceedings, and so on. All these mechanisms are subject to corrupt administration. The World Bank suggests that pollution charges (taxes) are more efficient than traditional penalties in providing the right incentives to reduce polluting activities. See World Bank (1999).

ward is to establish a systematic program that assesses gaps in the environmental performance of individual NAFTA member countries.⁵⁵ If an environmental “vision” can then be broadly agreed on, the stage will be set to clarify NAFTA’s environmental institutions so that they can either meet public expectations or be relieved of the task.

The divergence between public expectations and NAFTA’s environmental capacities can be reconciled in two ways: (1) modify the side agreement to address the flaws in its environmental institutions and enhance their ability to meet the environmental expectations of the North American public; or (2) frankly acknowledge the environmental limitations of NAFTA and its environmental side agreement and address environmental issues through non-NAFTA institutions and mechanisms.

NAFTA’s environmental record clearly is imperfect. It makes more sense to tackle the shortcomings than to lament the existence of an FTA, as many environmentalists do, or to overlook the problems, as a very few diehard free trade advocates might. With the necessary tuning, NAFTA can become a trade agreement that both environmentalists and free traders appreciate.

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55. We thank Paul Joffe for providing the suggestion in this paragraph, which draws heavily on written comments he provided to an earlier draft. See Joffe and Caldwell (2003).

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Appendix 3A

Table 3A.1 CEC Article 14 submissions on enforcement matters, 1994–2005

ID number filing date	Claimant and defendant	Claim	Status
SEM-95-001 6/30/1995	Biodiversity Legal Foundation et al. vs. United States	Failure to effectively enforce some provisions of the Endangered Species Act of 1973 as a consequence of the Rescissions Act of 1995.	Process terminated. The Secretariat determined that "enactment of legislation which specifically alters the operation of pre-existing environmental law in essence becomes a part of the greater body of laws and statutes on the books." The Secretariat determined not to request a response from the concerned government party and, under guideline 8.1, the process was terminated on December 11, 1995.
SEM-95-002 8/30/1995	Sierra Club et al. vs. United States	Failure to effectively enforce all applicable federal environmental laws by eliminating private remedies for salvage timber sales as a consequence of the "Logging Rider" clause of the Rescissions Act of 1995.	Process terminated for the same reason stated in submission SEM-95-001. The Secretariat also concluded that the submission lacked a factual basis supporting the assertion of failure to effectively enforce environmental laws. The 30-day term expired without the Secretariat receiving a submission that conformed to Article 14(1). Under guideline 6.2, the process was terminated on January 7, 1996.
SEM-96-001 1/18/1996	Comité para la Protección de los Recursos Naturales et al. vs. Mexico	Failure to effectively enforce environmental laws during the evaluation process of a project involving construction and operation of a port terminal and related works in Cozumel.	Factual record released to the public on October 24, 1997. The CEC Council did not make any recommendations.
SEM-96-002 3/20/1996	Aage Tottrup, P. Eng. vs. Canada	Failure to effectively enforce environmental laws resulting in the pollution of specified wetland areas affecting the habitat of fish and migratory birds.	Process terminated because the same case has been brought before the Canadian court of law. The 30-day term expired without the Secretariat receiving new or supplemental information from submitter(s). Under guideline 8.1, the process was terminated on June 1, 1996.

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Table 3A.1 CEC Article 14 submissions on enforcement matters, 1994–2005 (continued)

ID number filing date	Claimant and defendant	Claim	Status
SEM-96-003 9/9/1996; SEM-97-006 10/4/1997	The Friends of the Old Man River vs. Canada	Failure to effectively enforce the habitat protection sections of the Fisheries Act and the Canadian Environmental Assessment Act.	Process terminated because the same case has been brought before the Canadian court of law. The submission was refiled (as SEM-97-006) on October 4, 1997, following conclusion of Canadian legal proceedings. Final factual record publicly released on August 11, 2003.
SEM-96-004 11/14/1996	The Southwest Center for Biological Diversity and Dr. Robin Silver vs. United states	Failure to effectively enforce the National Policy Act with respect to the US Army's operation at Fort Huachuca. Specifically, expansion of the base will drain local water supply and destroy the ecosystem dependent on it.	Submission withdrawn. Matter is currently being examined by the Secretariat under Article 13.
SEM-97-001 4/2/1997	British Columbia (BC) Aboriginal Fisheries Commission et al. vs. Canada	Failure to enforce the Canadian Fisheries Act and to use its powers pursuant to the National Energy Board Act to ensure the protection of fish and fish habitat in BC rivers from ongoing and repeated environmental damage caused by hydroelectric dams.	The Secretariat transmitted a factual record on this case to the CEC Council on May 31, 2000. The factual record was released to the public on June 12, 2000. The CEC Council did not make any recommendations.
SEM-97-002 3/15/1997	Comité Pro Limpieza del Río Magdalena vs. Mexico	Failure to enforce Mexican environmental laws governing disposal of wastewater. Alleging that wastewater from Imuris, Magdalena de Kino, and Santa Ana is being discharged into the Magdalena River without prior treatment.	The Secretariat made publicly available docu- ments related to the preparation of a factual record on March 22, 2002.
SEM-97-003 4/9/1997	Centre québécois du droit de l'environnement et al. vs. Canada	Failure to enforce several environmental protection standards regarding agriculture pollution originating from animal production facilities in Quebec.	The Secretariat has reviewed the response from Canada. On October 29, 1999 the Secretariat informed the CEC Council that this submission warrants developing a factual record. The CEC Council voted down the development of a factual record.

SEM-97-004 5/26/1997	Canadian Environmental Defence Fund vs. Canada	Failure to enforce law requiring environmental assessment of federal initiatives, policies, and programs. In particular, failure to conduct an environmental assessment of the Atlantic Groundfish Strategy, as required by Canadian law, jeopardizing the future of Canada's east coast fisheries.	The Secretariat determined that submission criteria were not met. The 30-day term expired without the Secretariat receiving a submission that conformed to Article 14(1). Under guideline 6.2, the process was terminated on September 24, 1997.
SEM-97-005 7/21/1997	Animal Alliance of Canada et al. vs. Canada	Failure to pass endangered species legislation or regulations as required by the Biodiversity Convention to which Canada is a signatory.	The Secretariat determined that submission criteria were not met. The Secretariat determined that "until international obligations are implemented by way of statute . . . those obligations do not constitute the domestic law of Canada." The 30-day term expired without the Secretariat receiving a submission that conformed to Article 14(1). Under guideline 6.2, the process was terminated on June 25, 1998.
SEM-97-007 10/10/1997	Instituto de Derecho Ambiental vs. Mexico	Failure to effectively enforce the applicable environmental laws with respect to a citizen's complaint filed on September 23, 1996 in regard to the Hydrological Basin of the Lerma Santiago River-Lake Chapala. The citizen's complaint was submitted "with the view to declaring a state of environmental emergency in the Lake Chapala ecosystem, following administrative proceedings." Specifically, the submission alleges that Mexico failed to carry out the requisite administrative procedures provided by the LGEEPA.	Process terminated. The Secretariat determined not to recommend the preparation of a factual record.
SEM-98-001 1/9/1998	Instituto de Derecho Ambiental vs. Mexico	Failure of the federal attorney general and federal judiciary to effectively enforce the LGEEPA in relation to the April 22, 1992, explosions in the Reforma area of the city of Guadalajara, state of Jalisco.	Process terminated. The Secretariat determined that the revised submission, received on October 15, 1999, did not meet the Article 14(1) criteria.

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Table 3A.1 CEC Article 14 submissions on enforcement matters, 1994–2005 (continued)

ID number filing date	Claimant and defendant	Claim	Status
SEM-98-002 10/14/1997	Hector Gregorio Ortiz Martinez vs. Mexico	Failure to effectively enforce the applicable environmental legislation in relation to a citizen's complaint regarding lumbering operations at the "El Taray" site in the state of Jalisco. Specifically, the submission alleges that the technical audit and inspection visit which were performed were inadequate response to the citizen submission and that the relevant authority failed to issue the appropriate ruling regarding damages and losses as provided by section 194 of the LGEEPA (in force at the time of the submission).	The Secretariat terminated the process on March 18, 1999. The subject matter of the dispute is expressly excluded from Article 14 review by the definition of environmental law in Article 45(2)(b) of the Agreement. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria and terminated the process under guideline 6.3.
SEM-98-003 5/27/1998	Department of the Planet Earth et al. vs. United States	Failure of the US Environmental Protection Agency (EPA) to enforce domestic laws (the Clean Air Act, 1990) and treaty obligations with Canada with regard to regulation of solid waste and medical incinerator air pollution designed to protect the Great Lakes.	Process terminated. The Secretariat determined that inspection and monitoring allegations do not warrant a factual record. The Secretariat determined not to recommend the preparation of a factual record. Under guideline 9.6, the process was terminated.
SEM-98-004 6/29/1998	Sierra Club of British Columbia et al. vs. Canada	Failure to enforce provisions of the Fisheries Act with regard to protecting fish and fish habitat from the destructive environmental impacts of the mining industry.	The Secretariat transmitted a factual record on this case to the CEC Council on June 27, 2003. The factual record was released to the public on August 12, 2003.
SEM-98-005 7/23/1998	Academia Sonorense de Derechos Humanos vs. Mexico	Failure to effectively enforce all environmental legislation in regard to the operation of a hazardous landfill less than six kilometers away from Hermosillo, Sonora.	Under guideline 9.6, the process was terminated. The Secretariat determined not to recommend the preparation of a factual record.

SEM-98-006 10/20/1998	Grupo Ecológico Manglar, AC vs. Mexico	Failure to enforce and properly administer domestic and international environmental laws, including the LGEEPA, in relation to the establishment and operation of the Granjas Aquanova SA shrimp farm in Nayarit, Mexico.	The Secretariat submitted the factual record on this case to the CEC Council for review on March 7, 2003. The factual record was released to the public on June 23, 2003.
SEM-98-007 10/23/1998	Environmental Health Coalition vs. Mexico	Failure to effectively enforce environmental laws according to Mexican law and the La Paz Agreement in connection with the abandoned lead smelter in Tijuana, Baja California, Mexico.	The Secretariat transmitted a factual record on this case to the CEC Council on November 29, 2001. The factual record was released to the public on February 11, 2002.
SEM-99-001 10/18/1999; SEM-00-002 3/20/2000	Methanex Corporation vs. United States; Neste Canada Inc. vs. United States	Failure to effectively enforce environmental laws and regulations related to water resource protection and the regulation of underground storage tanks in California.	The Secretariat acknowledged receipt of the submission on October 20, 1999. The Secretariat requested a response from the US government on March 30, 2000. On April 20, 2000, this submission was consolidated with SEM-00-002. On June 30, 2000, the Secretariat terminated the case because the matter is the subject of a pending judicial or administrative proceeding.
SEM-99-002 11/19/1999	Alliance for the Wild Rockies et al. vs. United States	Failure to effectively enforce Section 703 of the Migratory Bird Treaty Act, which prohibits the killing of migratory birds without a permit.	The Secretariat transmitted a factual record on this case to the CEC Council on February 21, 2003. The factual record was released to the public on April 24, 2003.
SEM-00-001 2/9/2000; SEM-00-005 5/3/2000	Rosa Maria Escalante de Fernandez vs. Mexico; Academia Sonorense de Derechos Humanos vs. Mexico	Failure to effectively enforce the LGEEPA in relation to the operation of the company Molymex, SA in Cumpas, Sonora, Mexico.	First submission dismissed due to lack of information. Documents related to the preparation of a factual record for the second submission on the same matter was submitted to the CEC Council on May 28, 2002. The factual record was released to the public on October 8, 2004.

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Table 3A.1 CEC Article 14 submissions on enforcement matters, 1994–2005 (continued)

ID number filing date	Claimant and defendant	Claim	Status
SEM-00-003 3/2/2000	Hudson River Audubon Society of Westchester Inc. et al. vs. United States	Violation by the National Park Service of the US Department of Interior of the Migratory Bird Treaty Act and the Endangered Species Act by proposing the construction of a paved bicycle path through the Jamaica Bay Wildlife Refuge in Queens, New York.	Process terminated. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria. Specifically, the Secretariat dismissed the submission because it alleges a prospective rather than an ongoing failure to effectively enforce environmental law.
SEM-00-004 3/23/2000	Suzuki Foundation et al. vs. Canada	Failure to enforce sections of the Fisheries Act against logging in British Columbia is disrupting fish habitat.	The Secretariat submitted the factual record on this case to the CEC Council for review on April 15, 2003. The factual record was released to the public on August 11, 2003.
SEM-00-006 6/9/2000	Comisión de la Solidaridad y Defensa de los Derechos Humanos vs. Mexico	Failure to effectively enforce its environmental law by denying Indigenous communities in the Sierra Tarahumara in the State of Chihuahua access to environmental justice.	On April 22, 2003, the Council voted to approve the development of a factual record. The Secretariat submitted the draft factual record to the CEC Council for review on April 6, 2005, for a 45-day comment period on the accuracy of the draft.
SEM-01-001 2/14/2001	Academia Sonorense de Derechos Humanos, AC Lic. Domingo Gutiérrez Mendivil vs. Mexico	Failure to enforce its environmental law by allowing the establishment of the Cyttrar hazardous waste landfill in Sonora, Mexico.	The Secretariat received a response from the Mexican government on July 19, 2001. The CEC Council voted not to warrant a factual record for this case on December 10, 2002.
SEM-01-002 4/12/2001	Names Withheld vs. Canada	Failure to enforce environmental obligations under NAAEC. Specifically, the submission alleges the failure to issue a prohibitory order stopping exports into the United States of products containing the banned hazardous substance isobutyl nitrite.	Process terminated. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria. Specifically, the submission criteria were not met because there was no evidence of defendant party's failure to effectively enforce its environmental laws.

SEM-01-003 6/14/2001	Mercerizados y Teñidos de Guadalajara, SA vs. Mexico	Failure to effectively enforce Articles 5, 6, and 7 of the NAAEC and Article 194 of the LGEEPA in relation to groundwater contamination caused by the firm Dermet.	Process terminated. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria.
SEM-02-001 2/6/2002	Sierra Club et al. vs. Canada	Failure to effectively enforce section 6(a) of the Migratory Bird Regulations adopted under the Migratory Birds Convention Act, 1994 against the logging industry in Ontario. Specifically, the submission alleges that despite the estimated widespread destruction of bird nests, an access-to-information request revealed no investigations or charges in Ontario for violations of section 6(a).	Documents related to the preparation of a factual record for the second submission on the same matter were submitted to the CEC Council on March 24, 2004. The Secretariat requested the preparation of a factual record on June 30, 2004. The Secretariat published a work plan available to the public and stakeholders on April 4, 2005.
SEM-02-002 2/7/2002	Jorge Rafael Martínez Azuela et al. vs. Mexico	Failure to effectively enforce environmental laws resulting in noise emissions at Mexico City International Airport exceeding limits established in environmental law, causing irreversible damage to the thousands of persons living near the airport.	Process terminated because the Secretariat determined the case did not warrant the preparation of a factual record (guideline 9.6).
SEM-02-003 5/8/2002	Friends of the Earth et al. vs. Canada	Failure to effectively enforce the Pulp and Paper Effluent Regulations. In particular, the submission alleges Canada failed to meet its stated policy to seek to ensure compliance in the shortest possible time with no recurrence of violations, as well as its stated commitment to fair, predictable, and consistent enforcement.	The Secretariat requested the preparation of a factual record on March 1, 2004.
SEM-02-004 8/23/2002	Arcadio, Leoncio, Fernanda, and Milagro Pesqueira Senday vs. Mexico	Failure to effectively enforce Article 15 of the LGEEPA Hazardous Waste Regulations and the Mining Law and its Regulations. The submission alleges that the company Minera Secotec, SA de CV exploited the low-grade placer gold deposit of the "El Boludo" project without complying with several conditions of the environmental impact authorization.	Process terminated. Submission withdrawn on July 7, 2004.

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Table 3A.1 CEC Article 14 submissions on enforcement matters, 1994–2005 (continued)

ID number filing date	Claimant and defendant	Claim	Status
SEM-02-005 11/25/2002	Angel Lara García vs. Mexico	Failure to enforce environmental laws with respect to a citizen's complaint about the manufacturing facility of ALCA, SA de CV, which releases highly toxic contaminants. The health and economic effects allegedly attributable to the emissions produced by the company are cited in the 183 documents submitted by the claimant.	Process terminated. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria.
SEM-03-001 5/1/2003	Attorneys general of the states of New York, Connecticut, and Rhode Island et al. vs. Canada	Failure to effectively enforce sections 166 and 176 of the Canadian Environmental Protection Act and failure to effectively enforce section 36(3) of the Fisheries Act against the Ontario Power Generation's coal-powered facilities. Specifically, the submission alleges that emissions of mercury, sulfur dioxide, and nitrogen oxides pollute the air and water downwind, into eastern Canada and the northeastern United States.	Process terminated because the Secretariat determined the case did not warrant the preparation of a factual record (guideline 9.6).
SEM-03-002 5/14/2003	Movimiento Ecologista Mexicano AC et al. vs. Mexico	Failure to effectively enforce the applicable environmental legislation under LGEEPA in relation to a citizen's complaint regarding the Home Port Xcaret project. The citizen's complaint alleges that the EIA project "will irreparably affect and destroy the natural resources and coral ecosystems, gravely endangering countless marine species."	Process terminated. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria.

SEM-03-003 5/23/2003	Instituto de Derecho Ambiental vs. Mexico	Failure to effectively enforce its environmental law with respect to the Hydrological Basin of the Lerma Santiago River-Lake Chapala. The submission alleges that Mexico failed to carry out the requisite administrative procedures provided by the LGEEPA. As a result, there is serious environmental deterioration and uneven water distribution in the basin, as well as the risk that Lake Chapala and its migratory birds will eventually disappear.	The Secretariat is reviewing the submission under Article 14(1). On March 31, 2004, the Secretariat received a response from the responding government Party and is considering whether to recommend a factual record.
SEM-03-004 6/17/2003	Ángel Lara García vs. Mexico	Failure to effectively enforce its environmental law with respect to the operation of a footwear materials factory by ALCA, SA de CV, in the Santa Isabel Industrial neighborhood of Izta-palapa Delegation in Mexico, DF. The submission alleges that Mexico failed to carry out the requisite administrative procedures provided by the LGEEPA in regards to the management of the factory's hazardous waste. As a result, there is serious environmental deterioration and the health of his family has been affected by the pollution generated by the factory.	The Secretariat requested the preparation of a factual record on August 23, 2004.
SEM-03-005 8/14/2003	Waterkeeper Alliance et al. vs. Canada	Failure to enforce section 36(3) of the federal Fisheries Act against the City of Montreal in regard to the discharge to the St. Lawrence River of toxic pollutants from the city's Techno-parc site. As a result, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and other pollutants are being discharged from Techno-parc, the site of a historic industrial and municipal waste landfill.	The Secretariat requested the preparation of a factual record on April 19, 2004. The council approved the development of a factual record on August 20, 2004. The Secretariat posted a request for information relevant to the factual record on its Web site on February 8, 2005.
SEM-03-006 8/15/2003	Academia Sonorense de Derechos Humanos vs. Mexico	Failure to enforce its environmental law by allowing the establishment of the Cytar hazardous waste landfill in Sonora, Mexico.	Process terminated because the Secretariat determined the case did not warrant the preparation of a factual record (guideline 9.6).

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Table 3A.1 CEC Article 14 submissions on enforcement matters, 1994–2005 (continued)

ID number filing date	Claimant and defendant	Claim	Status
SEM-04-001 1/27/2004	Genaro Meléndez Lugo y José Javier et al. vs. Mexico	Failure to enforce environmental laws by not properly processing their complaint against the companies Ecolimpio de México, SA de CV, and Transportes J. Guadalupe Jiménez, SA, and by not penalizing those companies. The submitters claim that both companies operate in violation of the law, causing serious damage to the environment and their property.	Process terminated. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria.
SEM-04-002 7/14/2004	Academia Sonorense de Derechos Humanos, AC, and Domingo Gutiérrez Mendivil vs. Mexico	Failure to enforce provisions of Mexican environmental law regarding the prevention, monitoring, oversight and control of air pollution in Hermosillo, Sonora. The submission alleges the failure to enforce and ensure compliance with the Mexican Official Standards (Normas Oficiales Mexicanas) on air pollution; the alleged lack of actions to prevent air pollution in properties and areas under state and municipal jurisdiction; the alleged failure to establish and update a National Air Quality Information System; and the alleged lack of defined state and municipal urban development plans indicating the zones where polluting industries may operate.	Process terminated. The Secretariat determined that the revised submission did not meet the Article 14(1) criteria.
SEM-04-003 9/7/2004	Centro de Derechos Humanos Tepeyac del Istmo de Tehuantepec, AC et al. vs. Mexico	Failure to enforce environmental laws by not processing or responding to a citizen complaint filed with PROFEPA on February 16, 2004. The submission alleges that the spillage of 68,000 liters of gasoline resulted in the death of fish in the Laguna Superior of the Gulf of Tehuantepec in Oaxaca, Mexico, harmed the environment, and endangered the health of the indigenous Zapotec community.	Process terminated. The Secretariat determined that the 30-day term expired without receiving a submission that met with the Article 14(1) criteria.

SEM-04-004 9/10/2004	The Friends of the Oldman River vs. Canada	The submission alleges that the federal government's 1998 "Decision Framework for the Determination and Authorization of Harmful Alteration, Disruption or Destruction of Fish Habitat" is not authorized by or compatible with the Fisheries Act or the Canadian Environmental Assessment Agency.	Process terminated. The Secretariat determined that the 30-day term expired without receiving a submission that met with the Article 14(1) criteria.
SEM-04-005 9/20/2004	Friends of the Earth et al. vs. United States	Failure to enforce the federal Clean Water Act against coal-fired power plants for mercury emissions. The submission alleges that the number of fish consumption advisories for mercury has risen from 899 to 2,347 since 1993, and that, according to the US EPA, 35 percent of the total lake acres and 24 percent of the river miles in the United States are now under fish consumption advisories. As a result, there is degradation of thousands of rivers, lakes, and other water bodies across the United States.	The Secretariat notified the submitters on December 16, 2004, that the submission did not meet all of the Article 14(1) criteria. On January 18, 2005, the submitters provided more information. On February 24, 2005, the Secretariat determined that the submission met the criteria of Article 14(1) and requested a response from the concerned government party in accordance with Article 14(2). The United States responded on April 25, 2005.
SEM-04-006 10/12/2004	Canadian Nature Federation et al. vs. Canada	Failure to enforce the Migratory Birds Convention Act, 1994, in regard to logging in four forest management units in Ontario. Section 6(a) of the Migratory Birds Regulation makes it an offence to disturb, destroy, or take a nest or egg of a migratory bird without a permit. The submission alleges that Environment Canada is primarily responsible for enforcing the Migratory Birds Convention Act, 1994 but that virtually no action has been taken to enforce section 6(a) of the Migratory Birds Regulation against logging companies, logging contractors, and independent contractors.	The Secretariat requested the preparation of a factual record on December 17, 2004. On April 4, 2005, the Secretariat published a work plan on its Web site or otherwise made it available to the public and stakeholders.

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Table 3A.1 CEC Article 14 submissions on enforcement matters, 1994–2005 (*continued*)

ID number filing date	Claimant and defendant	Claim	Status
SEM-04-007 11/3/2004	Quebec Association Against Air Pollution vs. Canada	Failure to enforce Quebec's "Regulation respecting the Quality of the Atmosphere" and the Quebec Environment Quality Act with regards to emissions of hydrocarbons, carbon monoxide, and nitrogen oxides from post-1985 light vehicle models. The submission alleges that the only way to ensure effective enforcement of this legislation is through the establishment of a mandatory automobile inspection and maintenance program that would apply to the whole fleet of automobiles in Quebec on a frequent basis. As a result, this alleged failure has considerable negative impacts on the environment and public health.	The Secretariat received a response from the Canadian government on February 1, 2005, and began considering whether to recommend a factual record.
SEM-05-001 1/12/2005	Inmobiliaria J y B Empresas, SA de CV vs. Mexico	Failure to enforce environmental laws by not processing or responding to a citizen complaint filed with PROFEPA. The submission alleges that extraction activities have had a negative environmental impact and that Diamond Golf International did not obtain the permits and authorizations required to carry out the mining activities.	The Secretariat received the submission on January 14, 2005. On February 16, 2005, the Secretariat determined that the submission met the criteria of Article 14(1) and requested a response from the concerned government party in accordance with Article 14(2).

LGEEPA = General Law of Ecological Equilibrium and Protection of the Environment
 PROFEPA = Mexico's Federal Environmental Protection Agency
 CEC = Commission for Environmental Cooperation
 NAAEC = North American Agreement on Environmental Cooperation

Source: CEC (2005).