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NAFTA and the Environment: A Proposal for Free Trade in Hazardous Waste between the United States and Mexico Symposium - The Environment and the United States-Mexico Border.

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ARTICLES

NAFTA AND THE ENVIRONMENT: A PROPOSAL FOR FREE TRADE IN HAZARDOUS WASTE BETWEEN THE UNITED STATES AND MEXICO

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I. INTRODUCTION

Over the past decade, the transboundary movement of hazardous waste¹ has become an important issue² as international trade

1. See 42 U.S.C. § 9601(14) (1994) (defining hazardous waste as any substance "designated pursuant to section 1321(b)(2)(A) of Title 33" or any other substance that meets definition of "hazardous" as contained in long laundry list of acts); 49 C.F.R. § 172.101 (1995) (listing various hazardous materials). Mexican law categorizes waste as hazardous if it is corrosive, reactive, explosive, toxic, inflammable, or biopathogenic. *Generation of Hazardous Wastes*, 5 No. 1 MEX. TRADE & L. REP. 11, 12 (Jan. 1995), available in Westlaw, MEXTLR Database.

2. See Michael B. Gerrard, *Fear and Loathing in the Siting of Hazardous and Radioactive Waste Facilities: A Comprehensive Approach to a Misperceived Crisis*, 68 TUL. L. REV. 1047, 1183-84 (1994) (describing huge international trade in hazardous waste and increasing international attention focused on regulating such waste); Sharrell Ables, Note, *The Integrated Environmental Plan for the Mexican-U.S. Border: A Plan to Clean up the Border or a Public Relations Ploy to Promote a Free Trade Agreement*, 9 ARIZ. J. INT'L & COMP. L. 487, 487 (1992) (noting increase in international export of toxic waste); see also John Ovink, *Transboundary Shipments of Toxic Waste: The Basel and Bamako Conventions:*

has increased and the costs of dumping hazardous waste have concomitantly increased.³ In particular, the rising cost of proper hazardous waste disposal has led many industrialized countries to export their hazardous waste along a path of least resistance to developing countries.⁴ The effects on the recipient countries are devastating and include soil contamination, ground-water pollution, air pollution from incineration, and other threats to natural resources.⁵

Unfortunately, because of its geographic proximity to the United States and its desire to attract foreign investment, Mexico has become one of the United States-owned maquiladoras' favorite dumping grounds for hazardous waste.⁶ The recent North Ameri-

Do Third World Countries Have a Choice? 13 DICK. J. INT'L L. 281, 282-83 (1995) (discussing how various regions have enacted agreements banning imports of hazardous waste to stop "environmental terrorism").

3. See Diana L. Godwin, Comment, *The Basel Convention on Transboundary Movements of Hazardous Wastes: An Opportunity for Industrialized Nations to Clean up Their Acts?*, 22 DENV. J. INT'L L. & POL'Y 193, 196-97 (1993) (noting increasing cost of pollution control and proper waste disposal). Reflecting how the economics relating to hazardous waste affect where a country chooses to dispose of its waste, Chief Economist of the World Bank, Lawrence Summers, stated that "the economic logic of dumping a load of toxic waste in the lowest-wage country is impeccable." *Pollution and the Poor: Why "Clean Development" at any Price Is a Curse on the Third World*, ECONOMIST, Feb. 15, 1992, at 18.

4. Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT'L L. 24, 31 (1994); see Rebecca A. Kirby, Note, *The Basel Convention and the Need for United States Implementation*, 24 GA. J. INT'L & COMP. L. 281, 283-86 (1994) (examining "thriving industry" of hazardous waste transport and noting that because of high costs of dumping in countries with sophisticated environmental laws, industrialized nations increasingly dump their hazardous waste in developing nations, turning those nations into virtual "toxic cesspools").

5. See Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Waste*, 88 AM. J. INT'L L. 24, 24 (1994) (addressing wide range of global environmental problems and noting effects of agriculture, biotechnology, and waste generation in water, forests, and atmosphere); see also Diana L. Godwin, Comment, *The Basel Convention on Transboundary Movements of Hazardous Wastes: An Opportunity for Industrialized Nations to Clean up Their Acts?*, 22 DENV. J. INT'L L. & POL'Y 193, 193 (1993) (commenting on how hazardous waste creates "treacherous consequences" that lead to further deterioration of global environment); Harry Anderson et al., *The Global Poison Trade*, NEWSWEEK, Nov. 7, 1988, at 66, 67 (discussing international implications of environmental pollution).

6. See LaRue Corbin et al., Comment, *The Environment, Free Trade, and Hazardous Waste: A Study of the U.S.-Mexico Border Environmental Problems in the Light of Free Trade*, 1 TEX. WESLEYAN L. REV. 183, 194 (1994) (finding that United States continues to export its hazardous waste to Mexico despite knowledge that Mexico "neither properly disposes of the waste, nor recycles it in a manner consistent with environmental protection"); James A. Funt, Comment, *The North American Free Trade Agreement and the Integrated Environmental Border Plan: Feasible Solutions to U.S.-Mexico Border Pollution?*, 12 TEMP. ENVTL. L. & TECH. J. 77, 78-79 (1993) (asserting that American-owned maqui-

can Free Trade Agreement (NAFTA)⁷ may only exacerbate matters: NAFTA unites 364 million people⁸ and strives to maximize utilization of North America's resources by subjecting them to open market demands through free trade,⁹ but it does not envision free trade in one of the principal byproducts of modern manufacturing—hazardous waste. Because the health and environmental risks associated with the inappropriate disposal of hazardous waste know no boundaries, it is important that NAFTA signatories jointly address waste issues.¹⁰

This Article addresses the present and future hazardous waste relationship between the United States and Mexico. Section II of this Article provides background on some of the problems surrounding hazardous waste management and disposal in North America. Section III discusses Mexico's hazardous waste laws and

ladoras along United States-Mexico border often illegally and improperly discharge hazardous waste in Mexico).

7. North American Free Trade Agreement, *drafted* Aug. 12, 1992, *revised* Sept. 6, 1992, U.S.-Mex.-Can., 32 I.L.M. 289 (pts. 1-3) & 32 I.L.M. 605 (pts. 4-8 & annexes) (entered into force Jan. 1, 1994) [hereinafter NAFTA].

8. See Nicholas Kublicki, *The Greening of Free Trade: NAFTA, Mexican Environmental Law, and Debt Exchanges for Mexican Environmental Infrastructure Development*, 19 COLUM. J. ENVTL. L. 59, 60 (1994) (noting that NAFTA created largest free trade zone, which services 364 million consumers). As of 1993, the population of the United States was approximately 250 million people. Carl T. Hall, *New Trade Talks Open Today*, SAN FRANCISCO CHRON., Mar. 17, 1993, at E1. Meanwhile, Canada's population was 26.6 million and Mexico's was 86.1 million. *Id.*

9. See Shellyn G. McCaffrey, *North American Free Trade and Labor Issues: Accomplishments and Challenges*, 10 HOFSTRA LAB. L.J. 449, 451 (1993) (acknowledging that "NAFTA will remove all impediments to the free flow of goods, services, and investment in the North American continent"); David M. McPherson, Note, *Is the North American Free Trade Agreement Entitled to an Economically Rational Countervailing Duty Scheme?*, 73 B.U. L. REV. 47, 48-49 (1993) (explaining that proponents believe NAFTA stimulates economic growth by increasing access to member countries' domestic markets).

10. See James A. Funt, Comment, *The North American Free Trade Agreement and the Integrated Environmental Border Plan: Feasible Solutions to U.S.-Mexico Border Pollution?*, 12 TEMP. ENVTL. L. & TECH. J. 77, 77 (1993) (commenting that pollution "cannot distinguish between Mexican and American soil"); see also LaRue Corbin et al., Comment, *The Environment, Free Trade, and Hazardous Waste: A Study of the U.S.-Mexico Border Environmental Problems in the Light of Free Trade*, 1 TEX. WESLEYAN L. REV. 183, 184 (1994) (describing water problems along border where water flowing from Mexico to United States carries disease, raw sewage, and toxic chemicals); Rebecca A. Kirby, Note, *The Basel Convention and the Need for United States Implementation*, 24 GA. J. INT'L & COMP. L. 281, 287 (1994) (asserting that because nations' borders are not barriers to air or water, surrounding nations suffer consequences of neighboring nations' hazardous waste mismanagement).

regulations. Section IV outlines relevant portions of NAFTA, its incorporated predecessors, and its progeny, analyzing their individual and collective effects on environmental cooperation between the United States and Mexico. Finally, Section V advocates free trade in hazardous waste through an integrated North American Hazardous Waste Management Plan. This plan is designed to solve many of the problems the United States and Mexico currently encounter because of illegal transboundary movement and dumping of hazardous waste.

II. THE PROBLEM OF HAZARDOUS WASTE IN NORTH AMERICA

A. *United States Hazardous Waste Laws Inadvertently Create Incentives for Illegal Dumping*

In recent years, the United States has promulgated a series of broad environmental laws and regulations.¹¹ These laws, while meant to benefit the environment, may actually encourage environmental degradation by increasing the costs of hazardous waste disposal.¹² The more costly it becomes to comply with the laws in the United States, the more incentives there are to export and illegally dump hazardous waste in other countries.¹³

11. *E.g.*, Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601–9675 (1994); Clean Air Act, 42 U.S.C. §§ 7401–7642 (1994); Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901–6992 (1994); Environmental Quality Improvement Act of 1970, 42 U.S.C. §§ 4371–4375 (1994); *see* Paul E. Hagan, *International and United States Controls on Transboundary Shipments of Hazardous and Other Wastes*, C990 A.L.I.-A.B.A. 57, 57 (1995) (noting dramatic increase of legal controls on transboundary movement of hazardous waste), *available in* Westlaw, ALI-ABA Database.

12. E. Donald Elliot, *Environmental Law at a Crossroad*, 20 N. KY. L. REV. 1, 1 (1992); *see* John W. Bagby et al., *How Green Was My Balance Sheet?: Corporate Liability and Environmental Disclosure*, 14 VA. ENVTL. L.J. 225, 227–28 (1995) (approximating that “compliance with environmental regulation comprises an estimated 2.5% of the [United States] gross domestic product (GDP) annually or nearly half of all the costs of government regulation”); Robert W. Hahn & John A. Hird, *The Costs and Benefits of Regulation: Review & Synthesis*, 8 YALE J. ON REG. 233, 272 (1991) (noting increase in cost for environmental cleanup).

13. *E.g.*, Luis R. Vera-Morales, *Dumping in the International Backyard: Exportation of Hazardous Wastes to Mexico*, 7 TUL. ENVTL. L.J. 353, 354–55 (1994); Barbara D. Huntoon, Note, *Emerging Controls on Transfers of Hazardous Waste to Developing Countries*, 21 LAW & POL’Y INT’L BUS. 247, 247 (1989); Jeffery D. Williams, Comment, *Trashing Developing Nations: The Global Hazardous Waste Trade*, 39 BUFF. L. REV. 275, 277 (1991).

The primary United States laws regulating hazardous waste are the Resource Conservation and Recovery Act of 1976 (RCRA)¹⁴ and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).¹⁵ RCRA provides a comprehensive “cradle to grave” approach covering the generation, transportation, storage, treatment, and disposal of hazardous waste.¹⁶ RCRA prohibits the export of hazardous waste before the exporter (1) notifies the importing country; (2) receives the importing country’s consent to accept the waste; (3) attaches a copy of the importing country’s written consent to the shipment; and (4) conforms the shipment to the terms and conditions of the importing country’s consent.¹⁷ Such requirements, while beneficial to the environment, impose additional costs on waste disposers.¹⁸

While RCRA represents a cradle-to-grave approach, CERCLA imposes important joint and several liability provisions that assess damages on any party who has had contact with illegally disposed hazardous waste, such as a waste generator, transporter, or property owner.¹⁹ Like RCRA, CERCLA’s liability provisions increase

14. 42 U.S.C. §§ 6901–6992 (1994). RCRA was intended to “eliminate the last remaining loophole in environmental law, that of unregulated land disposal of discarded materials and hazardous wastes.” H.R. REP. NO. 1491, 94th Cong., 2d Sess. 4 (1976), reprinted in 1976 U.S.C.C.A.N. 6238, 6241.

15. 42 U.S.C. §§ 9601–9675 (1994).

16. *Id.* § 6903(12). RCRA achieves this cradle-to-grave regulation through the implementation of a system requiring waste generators to fill out Hazardous Waste Manifests. *Id.* The manifests are forms “used for identifying the quantity, composition, and the origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of disposal, treatment, or storage.” *Id.*

17. *Id.* § 6938; see also Exports of Hazardous Waste Regulations, 40 C.F.R. § 262.53 (1994) (outlining notification requirements to EPA for export of hazardous waste from United States).

18. See Robert M. Rosenthal, *Ratification of the Basel Convention: Why the United States Should Adopt the No Less Environmentally Sound Standard*, 11 TEMP. ENVTL. L. & TECH. J. 61, 61 (1992) (recognizing that “regulatory pressures and cleanup costs have made hazardous waste disposal in the United States extremely expensive”); Hugh J. Marbury, Note, *Hazardous Waste Exportation: The Global Manifestation of Environmental Racism*, 28 VAND. J. TRANSNAT’L L. 251, 256 (1995) (citing more stringent regulation of domestic hazardous waste disposal as primary reason that cost of disposal has increased).

19. See 42 U.S.C. § 9607(a) (designating which persons may be liable under CERCLA). Section 9607 imposes liability on (1) current owners and operators of facilities where hazardous substances are released or threatened to be released; (2) owners and operators of facilities at the times substances were disposed; (3) persons who arranged for transportation or disposal or treatment of such substance; and (4) persons who accepted such substances for transport, disposal, or treatment. *Id.* These parties are liable for (1) “the cost of removal or remedial action incurred” by the federal government; (2) “any

hazardous waste disposal costs.²⁰ Further, traditional low-cost disposal methods, such as landfills, storage in surface impoundments, and deep-well injection, are now subject to strict United States regulatory constraints.²¹ These factors have led to the movement of hazardous waste along a path of least resistance to countries which have lower costs, reduced regulatory requirements, and fewer organized citizen groups.²²

other necessary costs of response incurred by any other person;" (3) damages for injury to national resources; and (4) health assessment costs. *Id.* Despite the absence of a statutory provision expressly imposing joint and several liability, the courts have interpreted CERCLA's liability scheme to imply a congressional intent to employ the common-law concept of joint and several liability. *E.g.*, *United States v. Alcan Aluminum Corp.*, 964 F.2d 252, 257 (3d Cir. 1992); *United States v. Shell Oil Co.*, 841 F. Supp. 962, 968 (C.D. Cal. 1993); *United States v. American Cyanamid Co.*, 786 F. Supp. 152, 164 (D.R.I. 1992); *United States v. Shell Oil Co.*, 605 F. Supp. 1064, 1069 n.9 (D. Colo. 1985). Instead of a statutory mandate imposing this type of liability, the common-law approach allows a court to impose joint and several liability on a case-by-case basis whenever such liability will enhance the statute's purpose of forcing available responsible parties to pay for the entire cleanup. *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 807-08 (S.D. Ohio 1983).

20. See Joel S. Hirschhorn, *Pollution Prevention Comes of Age*, 29 GA. L. REV. 325, 331 (1995) (noting that CERCLA's liability provision increases disposal costs for hazardous waste generators).

21. See Richard Ottinger, *Strengthening of the Resource Conservation and Recovery Act in 1984: The Original Loopholes, the Amendments, and the Political Factors Behind Their Passage*, 3 PACE ENVTL. L. REV. 1, 10-15 (1985) (discussing changes to RCRA after 1984 amendments and noting that surface impoundments, landfills, deep-well injections, and hazardous waste generators are now closely regulated).

22. Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT'L L. 24, 31 (1994); see Valentina O. Okaru, *The Basel Convention: Controlling the Movement of Hazardous Wastes to Developing Countries*, 4 FORDHAM ENVTL. L. REP. 137, 140 (1993) (listing various reasons why developing countries increasingly are recipients of legal and illegal trafficking of waste, including: stringent environmental regulations in industrialized countries, organized opposition to local toxic dump sites, and cheaper disposal costs in developing countries). Under the original structure of RCRA, incentives existed for the building of hazardous waste confinement facilities. See John C. Chambers & Mary S. McCullough, *From the Cradle to the Grave: A Historical Perspective of RCRA*, 10 NAT. RESOURCES & ENV'T 21, 22 (1995) (explaining that original RCRA was drafted to establish regulatory program for treating, storing, and disposing of hazardous waste). Thereafter, waste reduction emerged as a priority when Congress amended RCRA in 1984. *Id.* at 23. This amendment made minimizing the generation of waste an express objective of the statute. H.R. REP. NO. 198, 98th Cong., 1st Sess. 13 (1983). In 1984, Congress found that its failure to require treatment or resource recovery had encouraged a less expensive option—direct land disposal. See 130 CONG. REC. 30,697, 30,698 (1984) (statement of Sen. Chaffee) (noting that "land disposal is extremely cheap when compared with other available alternatives such as incineration or physical or chemical treatment"). As a result of industry efforts to reduce waste-handling costs and corporate officials' desire to reduce liability exposures under RCRA, CERCLA, and their progeny, many sectors of the American economy have utilized waste-minimiza-

Unfortunately, Mexico is the path of least resistance for United States-owned companies and is in a position to receive increased quantities of United States hazardous waste for three primary reasons. First, geographic proximity lowers transportation costs between the United States and Mexico.²³ Second, there is extensive American ownership in Mexico's maquiladora factories.²⁴ Third, NAFTA has increased trade and cross-border traffic²⁵ which, in turn, has increased the difficulty of controlling the movement of hazardous wastes. As a result of these three factors, United States waste is increasingly exported to Mexico and illegally dumped.²⁶ This trend in increased waste disposal must not be allowed to continue because Mexico does not currently have adequate treatment, storage, and disposal (TSD) facilities to dispose of its own wastes, let alone those of the United States.

tion technologies. See Joel S. Hirschhorn, *Pollution Prevention Comes of Age*, 29 GA. L. REV. 325, 331-32 (1995) (noting that waste-minimization projects are direct result of Pollution Prevention Act of 1990 and may serve as partial payment for environmental fines imposed by EPA). These technologies have reduced the amount of waste produced. *Id.* at 332. However, considering the relatively low disposal costs in Mexico and the high risk of liability in the United States, illegal waste shipments to Mexico will most likely continue. See Luis R. Vera-Morales, *Dumping in the International Backyard: Exportation of Hazardous Wastes to Mexico*, 7 TUL. ENVTL. L.J. 353, 384-85 (1994) (concluding that substantial reform is required to halt illegal waste shipments).

23. See Julianne I. Adler, Comment, *United States' Waste Export Control Program: Burying Our Neighbors in Garbage*, 40 AM. U. L. REV. 885, 893 (1991) (opining that geographic proximity of United States and Mexico is factor encouraging hazardous waste exports); cf. F. James Handley, *Exports of Waste from the United States to Canada: The How and Why?*, 20 ENVT. L. REP. (ENVT. L. INST.) 10,061 (Feb. 1990) (commenting that waste exports from northeastern United States to southern Canada are driven, in large part, by geographic proximity), available in LEXIS, Environ Library, NEWS File.

24. See Cheryl Schechter & David Brill, Jr., *Maquiladoras: Will the Program Continue?*, 23 ST. MARY'S L.J. 697, 699, 716 (1992) (noting that majority of maquiladoras obtain their raw materials, parts, and components from United States).

25. Michael S. Feeley & Elizabeth Knier, *Environmental Considerations of the Emerging United States-Mexico Free Trade Agreement*, 2 DUKE J. COMP. & INT'L L. 259, 276 (1992); see Kathryn C. Wilson, Comment, *The International Air Quality Management District: Is Emissions Trading the Innovative Solution to the Transboundary Pollution Problem?*, 30 TEX. INT'L L.J. 369, 372 (1995) (noting 6.6% increase in truck traffic at El Paso, Texas border crossing from 1985 to 1990, and positing that NAFTA will encourage increase in trade across United States-Mexico border).

26. *Hazardous Waste from U.S.-Owned Plants in Mexico Dumped Illegally, Panel Told*, Int'l Env't Daily (BNA) (Nov. 25, 1991), available in LEXIS, Environ Library, BNA-IED File.

B. *Mexico's Lack of Treatment, Storage, and Disposal Facilities*

Increasingly, the Mexican government has been fining companies for improper waste disposal,²⁷ but the companies complain that it is nearly impossible to comply with hazardous waste disposal regulations because of the lack of TSDs in Mexico.²⁸ In fact, some critics claim that Mexico's hazardous waste market today is only at the level that the United States was at in the early 1970s.²⁹ As a result, waste is disposed of improperly, causing increased health and environmental problems.³⁰

Recent statistics illustrate how industrial relocation and development in Mexico under NAFTA will further aggravate illegal dumping. For example, approximately 15,500 tons of hazardous industrial waste are generated in Mexico each day.³¹ Of this total,

27. See Michael D. Madnick, Comment, *NAFTA: A Catalyst for Environmental Change in Mexico*, 11 PACE ENVTL. L. REV. 365, 388-89 (1993) (describing Mexico's increased enforcement of hazardous waste dumping laws); see also Alejandro Sobarzo, *NAFTA and Human Rights in Mexico*, 27 U.C. DAVIS L. REV. 865, 880 (1994); (referring to increased imposition of fines by Mexican government on companies violating environmental laws).

28. See Interview with Alberto Bustani, Director of the Center for Environmental Quality, *Instituto Tecnológico de Estudios Superiores de Monterrey*, in Monterrey, Mexico (June 3, 1994) (opining that Mexico has failed to allocate enough monies to create and manage adequate TSD infrastructure, and stating that Mexico needs to invest \$1.5 billion just to take care of hazardous waste currently generated in Mexico); see also Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13-15, 1995, at 14 (describing causes and consequences of Mexico's general lack of TSD infrastructure) (on file with the *St. Mary's Law Journal*).

29. See Interview with Dan Neveau, Chairman of the Board of MetalClad Corporation, in Mexico City, Mexico (Sept. 12, 1995) (opining that lack of proper facilities causes Mexico's hazardous waste market to resemble that of United States in late 1960s to early 1970s).

30. See Roberto A. Sánchez, *Health and Environmental Risks of the Maquiladora in Mexicali*, 30 NAT. RESOURCES J. 163, 181-84 (1990) (noting reports of birth defects, cancer, lupus, and miscarriages among workers in maquiladoras); see also *Generation of Hazardous Wastes*, 5 No. 1 MEX. TRADE & L. REP. 11, 11 (Jan. 1995) (noting that improper hazardous waste disposal leads to proliferation of disease, contamination of water, and increased air pollution), available in Westlaw, MEXTLR Database; Phillip Elmer-Dewitt, *Love Canals in the Making: Pollution Along the Mexican Border Is a Growing Health Hazard and a Hinderance to U.S. Efforts to Forge a Free-Trade Pact*, TIME, May 20, 1991, at 51 (listing several effects of improper border waste disposal, including air and water pollution, and asserting that disposal practices are leading to "Love Canals in the making").

31. Alberto Bustani, *Environmental Needs and Infrastructure in Mexico*, at 3 (Apr. 21, 1995) (on file with the *St. Mary's Law Journal*); see *Generation of Hazardous Wastes*, 5 No. 1 MEX. TRADE & L. REP. 11, 12 (Jan. 1995) (stating that Mexico generates approximately 15,500 tons of hazardous waste per day), available in Westlaw, MEXTLR Database.

38% (5,515 tons per day) comes from Mexico City, 25% (3,588 tons per day) comes from the southern region of Mexico, and 22% (3,133 tons per day) is generated in the northern region of Mexico.³² However, estimates indicate that only close to 15% of the approximately 6.2 million tons of toxic industrial waste generated in Mexico each year are disposed of properly,³³ while an alarming 85% (approximately 13,325 tons per day) is either dumped into nature or stored on-site at generators' plants.³⁴ Presumably, much of this waste is mixed with nonhazardous waste and deposited in open-air landfills.³⁵

These types of illegal dumping practices are prevalent in Mexico because industry decision-makers have very few options for disposal of their hazardous waste. Indeed, of the twenty-seven hazardous-industrial-solid-waste facilities in Mexico, seven are landfills, three are incinerators, and seventeen are treatment plants for solvents, metal recycling, and oil recovery; however, only two of these facilities are fully operational TSDs.³⁶ All seven of the hazardous waste landfills are privately owned, with only three open to the general public.³⁷ The public landfills are located in the states of Nuevo León, San Luis Potosí, and Sonora,³⁸ but whether these facilities have sufficient capacity for waste presently generated in Mexico is unknown. Meanwhile, the only two operating TSDs are

32. See *Generation of Hazardous Wastes*, 5 No. 1 MEX. TRADE & L. REP. 11, 12 (Jan. 1995) (providing statistics on regional hazardous waste generation in Mexico, but failing to account for 15%), available in Westlaw, MEXTLR Database; Symposium, *NAFTA: Reflections on the First Year and Vision for the Future* 14 (Feb. 22-24, 1995) (providing thorough list of sources and relevant statistics on industrial waste in Mexico with special emphasis on hazardous waste generation and disposal in various Mexican regions) (on file with the *St. Mary's Law Journal*).

33. David W. Eaton, *A Test of Mexico's Metal Metalclad Corporation Given the Final Go Ahead*, BUS. MEX., Dec. 1995-Jan. 1996, available in LEXIS, News Library, BUSMEX File; see Alberto Bustani, *Environmental Needs and Infrastructure in Mexico*, at 3 (Apr. 21, 1995) (relaying statistics on solid waste generation in Mexico) (on file with the *St. Mary's Law Journal*).

34. *Generation of Hazardous Wastes*, 5 No. 1 MEX. TRADE & L. REP. 11, 12 (Jan. 1995), available in Westlaw, MEXTLR Database.

35. *Id.*

36. *Id.*

37. *Id.*

38. Symposium, *NAFTA: Reflections on the First Year and Vision for the Future* 15 (Feb. 22-24, 1995) (on file with the *St. Mary's Law Journal*).

located in the northern states of Sonora and Nuevo León, thus leaving south and central Mexico without TSD facilities.³⁹

Because Mexico has so few hazardous waste facilities, many manufacturers choose to dump their waste illegally.⁴⁰ For example, in the central Mexican state of San Luis Potosí, there are an estimated seventy clandestine hazardous waste dumping sites.⁴¹ These unregulated sites cause horrific environmental damage; however, as Mexican environmental enforcement continues to increase, companies are forced to properly dispose of their waste.⁴² This has led to a call by industry for a waste confinement center in central Mexico.⁴³ Unfortunately, the limited amount of government funds available for TSD construction in Mexico is inadequate to provide

39. David W. Eaton, *A Test of Mexico's Metal Metalclad Corporation Given the Final Go Ahead*, BUS. MEX., Dec. 1995–Jan. 1996, available in LEXIS, News Library, BUSMEX File. The largest of the two TSD operating facilities is located in Mina, Nuevo León, and is operated by *Residuos Multiquim (RIMSA)*. *Id.* RIMSA is a subsidiary of Chemical Waste Management, the largest hazardous waste disposal company in the United States. *Id.* The other facility is located in Hermosillo, Sonora and, therefore, is beyond the reach of the majority of Mexico's industrial base in south and central Mexico. *Id.*

40. *E.g.*, Scott D. Cahalan, Recent Development, *NIMBY: Not in Mexico's Back Yard? A Case for Recognition of a Human Right to Healthy Environment in the American States*, 23 GA. J. INT'L & COMP. L. 409, 412–13 (1993); *Joint Mexico-U.S. Team to Study Clandestine Toxic Waste Dump*, NOTIMEX MEXICAN NEWS SERV., Apr. 21, 1992, available in LEXIS, Nexis Library, NOTIMEX File; *One Million Tons of Toxic Waste Cross Border to Mexico, Ecologists Say*, NOTIMEX MEXICAN NEWS SERV., July 30, 1992, available in LEXIS, Nexis Library, NOTIMEX File; *see Binational Investigation Underway of Border Toxic Waste Dump*, NOTIMEX MEXICAN NEWS SERV., July 30, 1992 (reporting that thousands of toxic waste containers were found illegally dumped in Mexicali warehouse), available in LEXIS, Nexis Library, NOTIMEX File.

41. Interview with Alberto A. Bustani, Director of the Center for Environmental Quality, *Instituto de Tecnológico de Estudios Superiores de Monterrey*, in Monterrey, Mexico (June 3, 1994); *see* Alberto Bustani, *Environmental Needs and Infrastructure in Mexico* 7–8 (Apr. 21, 1995) (discussing clandestine dumping problem and positing that problem reflects both lack of TSD capacity and failure of residential developers to comply with dumping regulations) (on file with the *St. Mary's Law Journal*).

42. *See Mexican Official, Browner Discuss Impact of Trade Pact on Enforcement*, Int'l Env't Daily (BNA) (Nov. 3, 1993) (implying that environmental enforcement and compliance have improved in Mexico), available in LEXIS, Envirn Library, BNA-IED File. Between September 1992 and November 1993 the Mexican government reportedly conducted 15,897 inspections at industrial plants throughout Mexico. *Id.*

43. *See Controversial Mexican Waste Site Test Case for Future Foreign Investment*, Int'l Env't Daily (BNA) (Aug. 15, 1995) (discussing dire need and industrialists' support for hazardous waste confinement site in central Mexico), available in LEXIS, Envirn Library, BNA-IED File.

proper disposal facilities.⁴⁴ In fact, the Center for Environmental Quality in Monterrey, Mexico projects that an investment of approximately \$1.5 billion is necessary to properly dispose of the hazardous industrial waste *currently* generated in Mexico.⁴⁵

Interestingly, while Mexico has insufficient TSD capacity and lacks financial resources to construct a hazardous waste infrastructure, the United States' TSD facilities currently have the capacity to accept and properly dispose of hazardous waste imports from Mexico.⁴⁶ Unfortunately, "not in my back yard" has become an important rallying cry for United States citizens' groups opposed to waste-disposal sites near their homes.⁴⁷ Consequently, it may be politically difficult to import and dispose of Mexican-generated

44. See Nicolas Kublicki, *The Greening of Free Trade: NAFTA, Mexican Environmental Law, and Debt Exchanges for Mexican Environmental Infrastructure Development*, 19 COLUM. J. ENVTL. L. 59, 66 (1994) (explaining that development of Mexico's environmental infrastructure is severely hampered by lack of capital).

45. Interview with Alberto A. Bustani, Director of the Center for Environmental Quality, *Instituto de Tecnológico de Estudios Superiores de Monterrey*, in Monterrey, Mexico (June 3, 1994).

46. See Janet C. Pancoast & Leonidas W. Payne, *Hazardous Waste in Interstate Commerce: The Triumph of Law Over Logic*, 10 ECOLOGY L.Q. 817, 852-53 (1993) (noting that western states in United States have excess capacity in their TSD facilities); *Commercial Hazardous Waste Management Facilities: 1995 Survey of North America*, HAZARDOUS WASTE CONSULTANT, Mar.-Apr. 1995, at 4.5 (reporting that information gathered from CERCLA-required State Capacity Assurance Plans demonstrates that "substantial excess capacity currently exists for combustion of hazardous waste" in United States' Treatment, Storage and Disposal facilities).

47. See Stanley E. Cox, *What Many States Do About out-of-State Waste in Light of Recent Supreme Court Decisions Applying the Dormant Commerce Clause: Kentucky As Case Study in the Waste Wars*, 83 KY. L.J. 551, 558 (1994) (explaining communities' response toward waste-disposal facilities); see also Jennifer R. Kitt, Note, *Waste Exports to the Developing World: A Global Response*, 7 GEO. INT'L ENVTL. L. REV. 485, 485-86 (1995) (explaining that one reason industrialized countries export waste to developing countries is because "citizens of industrialized countries generally have a 'not in my back yard' reaction to the construction of new disposal facilities"). The phrase "not in my back yard" refers to the community efforts in the United States to prevent the construction of waste-disposal facilities or other facilities involving activity that is perceived to pose health or safety risks in the local area. Scott D. Cahalan, Recent Development, *NIMBY: Not In Mexico's Back Yard? A Case for Recognition of a Human Right to Healthy Environment in the American States*, 23 GA. J. INT'L & COMP. L. 409, 409 n.1 (1993). Mexico has recently faced similar political opposition to hazardous waste disposal and management facilities, which has further hindered development of Mexico's TSD infrastructure. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13-15, 1995, at 9-12 (detailing causes and consequences of political opposition to hazardous waste facilities in Mexico) (on file with the *St. Mary's Law Journal*).

waste in the United States, except perhaps on a temporary basis as part of a long-range plan to improve the Mexican hazardous waste infrastructure.

C. *The Maquiladora Industry*

In addition to Mexico's lack of waste-disposal facilities, the hazardous waste created by the maquiladora industry⁴⁸ is problematic because the maquiladora industry is one of the largest generators of hazardous waste in Mexico,⁴⁹ producing approximately 164 tons of hazardous waste per day.⁵⁰ The Mexican government initiated the maquiladora program in 1965 to increase foreign investment, develop the economy in northern Mexico, generate employment, and attract new technology.⁵¹ The program allows foreign-owned manufacturers to capture the benefits of Mexico's comparatively low wage rates while avoiding payment of customs duties placed on imports into Mexico.⁵² This nonpayment of duties is codified in Mexico's environmental laws and is known as the "in-bond" system.⁵³

48. See generally Cheryl Schechter & David Brill, Jr., *Maquiladoras: Will the Program Continue?*, 23 ST. MARY'S L.J. 697, 697-702 (1992) (providing overview of maquiladora industry). A maquiladora is a foreign-owned assembly plant located in northern Mexico. *Id.* at 698-99.

49. See Stanley M. Spracker et al., *Environmental Protection and International Trade: NAFTA as a Means of Eliminating Environmental Contamination as a Competitive Advantage*, 5 GEO. INT'L ENVTL. L. REV. 669, 672-73 (1993) (estimating that over half of Mexico's approximately 2000 maquiladoras generate hazardous waste).

50. *Generation of Hazardous Wastes*, 5 NO. 1 MEX. TRADE & L. REP. 11, 12 (Jan. 1995), available in Westlaw, MEXTLR Database.

51. See INSTITUTO NACIONAL DE ESTADÍSTICA GEOGRAFÍA E INFORMÁTICA, EL ABC DE LA ESTADÍSTICA DE LA INDUSTRIA MAQUILADORA DE EXPORTACIÓN 2 (1994) (providing reasons for Mexican government's implementation of maquiladora program) (on file with the *St. Mary's Law Journal*). For information regarding the creation and objectives of the maquiladora industry see Sherri M. Durand, *American Maquiladoras: Are They Exploiting Mexico's Working Poor?*, 3 KAN. J.L. & PUB. POL'Y 128 (1994); David Voigt, Note, *The Maquiladora Problem in the Age of NAFTA: Where Will We Find Solutions?*, 2 MINN. J. GLOBAL TRADE 323 (1993); and *The Maquiladora Industry and U.S. Employment*, 3 NO. 9 MEX. TRADE & L. REP. 11 (Sept. 1993), available in Westlaw, MEXTLR Database.

52. See Michael D. Madnick, Comment, *NAFTA: A Catalyst for Environmental Change in Mexico*, 11 PACE ENVTL. L. REV. 365, 373-74 (1993) (explaining that Mexico created maquiladora program hoping to generate jobs and attract foreign investment in northern Mexico by offering foreign companies tax benefits and cheap labor).

53. See Edward M. Ranger, *Environmental Aspects of Building a Facility in Northern Mexico*, C990 A.L.I.-A.B.A. 497, 547 (1995) (discussing December 1989 maquiladora decree which created "in-bond" system), available in Westlaw, ALI-ABA Database.

The Mexican government created the in-bond system to attract foreign investment in maquiladoras.⁵⁴ The in-bond system permits a foreign company to import materials and equipment into Mexico duty free.⁵⁵ In lieu of duties, the foreign manufacturer must post a bond with Mexico corresponding to the value of the materials.⁵⁶ The bond is returned upon re-exportation of the final product to the country of origin,⁵⁷ and the parent company is only taxed by Mexico on the value added to the products while in Mexico.⁵⁸ However, Mexican law requires that all hazardous wastes generated by raw materials admitted in-bond be returned to their country of origin.⁵⁹

Despite these legal requirements, much of the hazardous waste generated by the maquiladora industry is not returned to the United States. Indeed, only 30 of the 164 tons of hazardous waste per day, from approximately five percent of the maquiladoras, is properly disposed of in either Mexican TSD facilities or in programs where waste is nationalized by law.⁶⁰ Meanwhile, approxi-

54. See Stephen M. Lerner, *The Maquiladoras and Hazardous Waste: The Effects Under NAFTA*, 6 *TRANSNAT'L LAW* 255, 257-59 (1993) (delineating various aspects of in-bond system and explaining that maquiladora program's purpose was to increase foreign investment in Mexico).

55. See Leonard P. Feldman, *U.S.-Mexico Free Trade Agreement*, 4 *TRANSNAT'L LAW* 553, 565 (1991) (clarifying framework of in-bond system).

56. *Id.*

57. See Guillermo Marrero, *What Foreigners Should Know About the Mexican Market*, in *NAFTA: WHAT YOU NEED TO KNOW NOW 1994*, at 117, 133-34 (PLI Commercial Law & Practice Course Handbook Series No. A-699, 1994) (describing how in-bond system ensures re-exportation of final products manufactured by maquiladoras). Pursuant to receipt of a special permit, up to 55% of a maquiladora's final products may be sold in Mexico's domestic market. *Id.* This percentage will increase steadily until the year 2001, at which time NAFTA eliminates all domestic sales restrictions. *Id.*

58. Stephen M. Lerner, Comment, *The Maquiladoras and Hazardous Waste: The Effects Under NAFTA*, 6 *TRANSNAT'L LAW* 255, 257 (1993); see Harry A. Inman & Lic. Alejandro Ortiz Tirado, *A Mexican Dividend: "Las Maquiladoras,"* 9 *INT'L LAW* 431, 431 n.2 (1975) (discussing United States tariff item No. 806.30, which limits duty to value of foreign processing of metal articles, and tariff item No. 807, which regulates duty on full value of imported products assembled in foreign countries using fabricated components that were manufactured in United States).

59. *Ley General del Equilibrio Ecologico y la Proteccion del Ambiente*, D.O., Jan. 28, 1988, art. 153 [hereinafter *General Law*].

60. Alberto Bustani, *Environmental Needs and Infrastructure in Mexico* 3 (Apr. 21, 1995) (on file with the *St. Mary's Law Journal*).

mately forty-four tons of hazardous waste per day generated by maquiladoras are unaccounted for.⁶¹

Such illegal dumping by the maquiladora industry is suspected to be the cause of the high incidence of disease on the United States-Mexico border. For example, a lawsuit filed in Brownsville, Texas in 1993 charged eighty-eight maquiladoras with negligently causing sixteen children to be born with birth defects.⁶² While that particular case was settled out of court, and disease experts have been unable to determine the cause of the high incidence of birth defects along the border,⁶³ maquiladoras are nevertheless the focus of heightened scrutiny.

While the maquiladoras' waste-disposal practices are already problematic, it is important to consider the extent to which present waste-disposal practices will change under NAFTA. NAFTA will eventually eliminate most import duties between the United States and Mexico.⁶⁴ Once import duties are eliminated there will be no reason for maquiladoras to post a bond in order to import raw materials and components to their facilities duty free. However, if bonds are not required, there will be no legal requirement to export waste to the country of origin.⁶⁵ Therefore, NAFTA may have nullified the requirement that United States-owned maquiladoras

61. *Id.*

62. See James Pinkerton, *Parents of Deformed Babies Sue, Claim 88 Companies Contaminated Valley*, HOUSTON CHRON., Mar. 27, 1993, at A1 (describing lawsuit filed against 88 United States and Mexican corporations on March 26, 1993, which alleged that those corporations "improperly stored and discarded toxic wastes that polluted local air and water, causing the rare birth defects").

63. See James E. Garcia, *GM, Companies Settle Lawsuit over Brain Defects in Valley*, AUSTIN AMERICAN-STATESMAN, Aug. 26, 1995, at B9 (reporting that lawsuit against General Motors for alleged toxic emissions leading to birth defects was settled, and noting that scientists have, thus far, been unable to link birth defects in Rio Grande Valley to pollution).

64. See Cheryl Schechter & David Brill, Jr., *Maquiladoras: Will the Program Continue?*, 23 ST. MARY'S L.J. 697, 713 (1992) (noting that effect of NAFTA will be elimination of duties). Chapter 3 of NAFTA accomplishes the main goal of the treaty by eliminating import duties on most goods that originate within the NAFTA territories. NAFTA, *supra* note 7, ch. 3, 32 I.L.M. at 299-349. Approximately one-half of the goods listed in the treaty became duty free as of January 1, 1994. *Id.* ch. 3, annex 302.2, 32 I.L.M. at 310. Other goods are subject to tariff phase-outs over stated periods of time ranging from 5, 10, and 15 years. *Id.*

65. See generally General Law, *supra* note 59, art. 153 (requiring that hazardous waste generated by raw materials admitted in-bond be returned to country of origin).

repatriate their hazardous waste. This could become a sensitive political problem in the future.

D. *Mexico's Recent Economic Crisis and the Resulting Technology Crisis*

In addition to the aforementioned problems, the recent economic crisis in Mexico has made proper disposal of hazardous waste a luxury that many companies cannot afford.⁶⁶ This is because the vast majority of environmental technology and services are from the United States, Japan, or Europe,⁶⁷ and with the devaluation of the peso, such technology is beyond the financial reach of many Mexican companies. Consequently, it is, and will continue to be, extremely difficult for Mexican businesses to purchase the infrastructure and technology needed to adequately treat, store, and dispose of hazardous waste.

The devaluation of the peso limits Mexican companies' ability to purchase advanced waste-minimization technology, and increases existing concerns that the waste-management technology currently exported from the United States to Mexico is inadequate "end of the pipe" technology.⁶⁸ Such waste-management technology is

66. See *Hazardous Waste Management Equipment and Services*, 3 No. 7 MEX. TRADE & L. REP. 24, 24 (July 1993) (remarking that many Mexican companies cannot afford installation cost of pollution control equipment because of Mexico's weak economy), available in Westlaw, MEXTLR Database. See generally *Implications of the Devaluation and Economic Situation in Mexico*, 5 No. 3 MEX. TRADE & L. REP. 12, 12-13 (Mar. 1995) (reviewing events that caused devaluation of peso and explaining current economic situation in Mexico), available in Westlaw, MEXTLR Database.

67. See *Commerce Department Outlines Plan to Help U.S. Companies Export to Mexico*, Int'l Env't Daily (BNA) (Nov. 4, 1994) (stating that United States has greatest market share of environmental technology exports to Mexico, with most competition coming from United Kingdom, Germany, Canada, France, and Japan), available in LEXIS, Envirn Library, BNA-IED File; *Partnerships Vital for Success in Global Market, Speakers Say*, Int'l Env't Daily (BNA) (Nov. 30, 1994) (noting that only Germany and Japan have larger shares of international environmental technologies market than United States), available in LEXIS, Envirn Library, BNA-IED File.

68. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13-15, 1995, at 9 (lamenting that United States currently exports "'end of the pipe' technology to Mexico instead of waste-minimization technology") (on file with the *St. Mary's Law Journal*); see also Jennifer R. Kitt, Note, *Waste Exports to the Developing World: A Global Response*, 7 GEO. INT'L ENVTL. L. REV. 485, 492 (1995) (positing that developing countries like Mexico are susceptible to illegal dumping partly because they lack proper technology for hazardous waste management and disposal).

designed to clean up pollution *after* it has occurred, as opposed to waste-minimization technology, which is designed to reduce the overall amount of hazardous waste generated.⁶⁹ Although advanced waste-minimization technologies may be more expensive, they are preferable because they reduce the amount of pollution generated. If hazardous waste production can be minimized, rather than merely managed after the fact, then some of the high costs of disposal can be averted.⁷⁰

E. *Recyclable v. Nonrecyclable Waste: Broadening the Negative Effects of Increased Transborder Movement of Hazardous Waste*

Efforts to control illegal dumping of hazardous waste in the border area are further complicated by the fact that Mexican law distinguishes between recyclable and nonrecyclable imported waste.⁷¹ Recyclable waste may be imported into Mexico while nonrecyclable waste is strictly prohibited.⁷² The distinction between recyclable and nonrecyclable waste inadvertently creates a situation ripe for illegal dumping.⁷³ Because of increased cross-border traffic and lax enforcement, illegal shipments of nonrecyclable waste are likely to go undetected.⁷⁴ If waste clears Mexican customs as recyclable,

69. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 9 (noting that “end of the pipe” technology is not designed to reduce amount of hazardous waste generated as is waste-minimization technology) (on file with the *St. Mary’s Law Journal*).

70. *Id.*; see James M. Strock et al., *Integrated Pollution Prevention: Cal-Epa’s Perspective*, 22 ENVTL. L. 311, 311, 323–24, 327–28 (1992) (discussing benefits of waste minimization realized under California’s pollution prevention efforts, and lamenting inefficiency of “end-of-the-pipe” technologies).

71. General Law, *supra* note 59, arts. 57, 153.

72. *Id.*

73. See Interview with Jose Francisco Gonzalez, President & Owner of Red Transportadora, in Monterrey, Mexico (June 6, 1994) (explaining that accurate classification of waste as recyclable or nonrecyclable requires advanced knowledge and training which average customs inspector lacks; consequently, cursory inspection of vehicles hauling hazardous waste often will not lend itself to determination of whether cargo is recyclable or nonrecyclable).

74. *Id.*; cf. *Along the U.S.-Mexico Border: Increased Traffic, Overused Facilities*, 1 No. 3 MEX. TRADE & L. REP. 15 (Dec. 1991) (reporting that United States Customs officials say that when they are “processing commercial traffic they must balance the legitimate interests of the business community for expedited processing against national objectives to prevent smuggling of illegal narcotics into the U.S.”), available in Westlaw, MEXTLR Database. See generally James E. Bailey, *Free Trade and the Environment—Can NAFTA*

there is little possibility of detection should the importer choose to dump the waste illegally rather than transport it to the designated recycling center.⁷⁵ Failure to detect such illegal shipments could have drastic consequences for the environment because if those who regularly transport waste do not fear detection, illegal shipments to Mexico are likely to continue.

In addition to inadvertently allowing illegal dumping, Mexico's attempt to distinguish between recyclable and nonrecyclable waste imposes unjustified external costs on Mexico's already overburdened infrastructure. For example, adequate enforcement of the law prohibiting importation of nonrecyclable waste will require financial commitments to hire additional Mexican port-of-entry vehicle inspectors.⁷⁶ The United States and Mexico share the longest land border between a developed and developing country in the world.⁷⁷ The total length of the United States-Mexico border is nearly 2,000 miles, traversing four American states and six Mexican states.⁷⁸ The border is very porous making it extremely difficult to prevent the importation of hazardous waste into Mexico: there are thirty-seven vehicular border crossings between the United States and Mexico, but there are also numerous points where vehicles can risk illegal crossings.⁷⁹ The porosity of the bor-

Reconcile the Irreconcilable?, 8 AM. U. J. INT'L L. & POL'Y 839, 864 (1993) (detailing Mexico's historically lax enforcement of its environmental laws).

75. See Interview with Luis Caranza, Legal Director for the Federal Attorney General for Environmental Protection, State of Nuevo León, in Monterrey, Mexico (Oct. 21, 1995) (lamenting that while Mexico has documentary control mechanisms for hazardous waste imports, reality is that there is very little control once waste shipments enter Mexican territory).

76. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13-15, 1995, at 5 (emphasizing that border port-of-entry facilities are already overburdened and require more fiscal appropriations to accommodate increasing border traffic) (on file with the *St. Mary's Law Journal*).

77. U.S. DEP'T OF TRANSP., FED. HIGHWAY ADMIN., INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT: SECTIONS 1089 AND 6015: ASSESSMENT OF BORDER CROSSING AND TRANSPORTATION CORRIDORS FOR NORTH AMERICAN TRADE, REPORT TO CONGRESS 71 (1991).

78. See Buck J. Wynne, *The Impact of NAFTA on the U.S./Mexico Border Environment*, 26 URB. LAW. 11, 12 (1994) (noting that United States-Mexico border runs from Pacific Ocean to Gulf of Mexico for nearly 2000 miles).

79. See U.S. DEP'T OF TRANSP., FED. HIGHWAY ADMIN., INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT: SECTIONS 1089 AND 6015: ASSESSMENT OF BORDER CROSSING AND TRANSPORTATION CORRIDORS FOR NORTH AMERICAN TRADE, REPORT TO CONGRESS 74 (1991) (listing 5 official points of entry between United States and Mexico in California, 7 in Arizona, 3 in New Mexico, and 22 in Texas).

der is particularly problematic when one considers that preventing the illegal movement of hazardous waste through the established points of entry alone would require great increases in staffing hours, infrastructure, and financing. Given the current economic crisis in Mexico, this strategy may not be feasible.

A second example of how the distinction between recyclable and nonrecyclable waste creates unjustified external costs is the fact that the flow of goods between the United States and Mexico is drastically slowed because vehicles must be stopped and inspected to ensure that hazardous wastes are not passing through customs illegally.⁸⁰ These stops and inspections cause delays at the already overburdened customs ports of entry.⁸¹ More time spent on hazardous waste inspection at the border slows the movement of goods and occupies valuable staffing time that could be used for illegal-drug interception and immigration control. This slowing of cross-border traffic occurs at a time when increased trade stimulated by NAFTA necessitates expedited border crossings. Indeed, pursuant to NAFTA, exports are projected to increase by sixty-five to seventy percent by the year 2000.⁸² Increases in exports will cause further increases in traffic, which in turn will lead to additional congestion at border-crossing facilities.⁸³

80. See U.S. DEP'T OF TRANSP., FED. HIGHWAY ADMIN., INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT: SECTIONS 1089 AND 6015: ASSESSMENT OF BORDER CROSSING AND TRANSPORTATION CORRIDORS FOR NORTH AMERICAN TRADE, REPORT TO CONGRESS 161 (1991) (explaining that border crossing traffic delays are due in large part to complexities of hazardous waste vehicle inspection requirements); see also *Assessing Border Crossings and Transportation Corridors for North American Trade*, 3 No. 12 MEX. TRADE & L. REP. 25, 27-28 (Dec. 1993) (discussing lengthy vehicle inspections at border), available in Westlaw, MEXTLR Database.

81. See *Assessing Border Crossings and Transportation Corridors for North American Trade*, 3 No. 12 MEX. TRADE & L. REP. 25, 28 (Dec. 1993) (noting that vehicles transporting hazardous waste require more time to process because of dangerous nature of their cargo and complex inspection requirements), available in Westlaw, MEXTLR Database.

82. *Id.* at 27; see U.S. DEP'T OF TRANSP., FED. HIGHWAY ADMIN., INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT: SECTIONS 1089 AND 6015: ASSESSMENT OF BORDER CROSSING AND TRANSPORTATION CORRIDORS FOR NORTH AMERICAN TRADE, REPORT TO CONGRESS 160 (1991) (stating that forecasters expect 65-70% increase in United States exports to Mexico by year 2000, with 120% increase in exports through South Texas).

83. See *Assessing Border Crossings and Transportation Corridors for North American Trade*, 3 No. 12 MEX. TRADE & L. REP. 25, 27 (Dec. 1993) (indicating that possibility is very real that, because of NAFTA, trucks will begin to back up at border crossings), available in Westlaw, MEXTLR Database.

III. MEXICAN HAZARDOUS WASTE LAWS

A. *Mexican Environmental Enforcement Agencies*

Just as the United States has environmental laws that regulate hazardous waste disposal, so too does Mexico. To administer these laws, Mexico created a counterpart to the United States Environmental Protection Agency (EPA)—the Secretariat of Urban and Ecological Development (SEDUE).⁸⁴ In 1992 SEDUE was replaced by the Secretariat of Social Development (SEDESOL)⁸⁵ which encompassed the newly created National Ecology Institute (INE).⁸⁶ Thereafter, in December 1994, Mexican President Ernesto Zedillo ordered another reformation of Mexico's environmental regulatory and policy-making agencies.⁸⁷ The reformation took environmental enforcement and policy development out of SEDESOL and placed it in the newly created Secretariat of Environment, Natural Resources, and Fisheries (SMARNP).⁸⁸

President Zedillo recently appointed Julia Carabias Lilla to lead SMARNP.⁸⁹ Julia Carabias was formerly president of the INE, which was the principal environmental policy-making arm of

84. INSTITUTO NACIONAL DE ESTADÍSTICA GEOGRAFÍA E INFORMATICA, ESTADÍSTICAS DEL MEDIO AMBIENTE: MEXICO 1994, at 212 (1994) (on file with the *St. Mary's Law Journal*); see Patrick M. Rahe et al., *Mexico: Investment and the Environment*, C990 A.L.I.-A.B.A. 565, 572 (1995) (noting that SEDUE was Mexico's first counterpart to United States EPA), available in Westlaw, ALI-ABA Database.

85. Poder Ejecutivo, Secretaria de Desarrollo Social, D.O. May 26, 1992.

86. INSTITUTO NACIONAL DE ESTADÍSTICA GEOGRAFÍA E INFORMATICA, ESTADÍSTICAS DEL MEDIO AMBIENTE: MEXICO 1994, at 215 (1994) (on file with the *St. Mary's Law Journal*); see Mark E. Allen, *An Overview of Mineral Development Law in Mexico*, 25 COLO. LAW. 57, 58 (1996) (explaining that SEDESOL was comprised of two subagencies: INE, which created environmental policies and regulations, and PROFEPA, which enforced those policies and regulations).

87. See Edward M. Ranger, *Environment's New Power Arrangement: How This Prez Plans to Revamp Ministry with History of Change*, BUS. MEX., Jan.-Feb. 1995 (describing features of President Zedillo's proposed environmental plan), available in LEXIS, News Library, BUSMEX File.

88. See INSTITUTO NACIONAL DE ESTADÍSTICA GEOGRAFÍA E INFORMATICA, ESTADÍSTICAS DEL MEDIO AMBIENTE: MEXICO 1994, at 215 (1994) (chronicling Mexico's change of administrative agencies in charge of environmental matters from SEDUE to SEDESOL in 1992, and from SEDESOL to SMARNP in December 1994) (on file with the *St. Mary's Law Journal*). For information on the objectives and powers delegated to SMARNP see TRÁMITES A SEGUIR ANTE LAS DEPENDENCIAS OFICIALES, MANUAL DINAMICO DE GESTIONES EMPRESARIALES 71-75 (1995) (on file with the *St. Mary's Law Journal*).

89. See *New Secretariat to Improve Integration of Environmental, Economic Decision-Making*, Int'l Env't Daily (BNA) (Jan. 11, 1995) (recounting comments made by Julia

SEDESOL.⁹⁰ While at the INE during the Salinas administration, Julia Carabias was a key player in the formation of several landmark environmental laws; consequently, commentators believe she will help foster clarity in and greater enforcement of Mexican environmental laws.⁹¹

B. *Mexico's General Law on Ecological Equilibrium and Environmental Protection*

SMARNP, the administrative agency charged with protecting the environment, utilizes and enforces the 1988 General Law on Ecological Equilibrium and Environmental Protection (General Law),⁹² which is the controlling legislation on environmental issues in Mexico. There are two important articles in the General Law and its accompanying regulations that apply to hazardous waste. First, article 55 of the General Law's Health and Safety Regulations mandates that hazardous wastes generated by raw materials entering Mexico "in-bond" under the maquiladora program must be returned to their country of origin.⁹³ Second, article 153 of the General Law strictly prohibits the importation of hazardous waste into Mexico for storage or final disposal.⁹⁴ However, article 153 does allow the importation of hazardous waste for recycling purposes.⁹⁵

Carabias in her first public appearance as secretary of SMARNP), available in LEXIS, Environ Library, BNA-IED File.

90. Edward M. Ranger, *Environment's New Power Arrangement: How This Prez Plans to Revamp Ministry with History of Change*, BUS. MEX., Jan.-Feb. 1995, available in LEXIS, News Library, BUSMEX File.

91. See Jeffrey Stoub, *Heading for Greener Postures: Zedillo Vows Tougher, More Focused Enviro-Policy*, BUS. MEX., Jan.-Feb. 1995 (acknowledging favorable reception of Carabias's appointment and projecting success for her efforts to reorganize and enforce Mexican environmental laws and agencies), available in LEXIS, News Library, BUSMEX File; see also *Secretariat of Environment, Natural Resources and Fisheries Julia Carabias Lillo*, BUS. MEX., Jan.-Feb. 1995 (reporting that industry leaders praised appointment of Carabias as Secretary of SMARNP), available in LEXIS, News Library, BUSMEX File.

92. General Law, *supra* note 59. See generally Terzah N. Lewis, Comment, *Environmental Law in Mexico*, 21 DENV. J. INT'L L. & POL'Y 159, 163-64 (1992) (providing overview of Mexico's General Law).

93. Ley General del Equilibrio Ecologico y la Proteccion del Ambiente, Regulaciones por la Salud y Seguridad, D.O, Nov. 25, 1988, art. 55.

94. General Law, *supra* note 59, art. 153.

95. *Id.*; see Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT'L L. 24, 35 (1994) (stating that Mexico imports hazardous waste to profit from recycling).

In addition to articles 55 and 153, the General Law requires a “*Guía Ecológica*” [Ecological Guide] for the import or export of hazardous waste.⁹⁶ By requiring an Ecological Guide, the General Law ensures that SMARNP will authorize all imports and exports of hazardous wastes.⁹⁷ Finally, other provisions of the General Law state that a company producing hazardous waste must obtain authorization from SMARNP to be a registered waste producer.⁹⁸ However, many businesses that generate and transport hazardous waste do not comply with these requirements because they have

96. General Law, *supra* note 59, art. 21.

97. *Id.* art. 153. The application for authorization to ship hazardous waste must be forwarded to SMARNP 45 days before the first date of desired shipment and 5 days before subsequent shipments of similar waste. Telephone Interview with Keith Miller, Director of Laid Law Environmental Services of Mexico (Feb. 8, 1994). The authorization granted by SMARNP is valid for 90 days after its issuance. *Id.* SMARNP may revoke its authorization if it determines that: (1) the waste poses a greater risk than was estimated at the time of authorization; (2) the applicant has not complied with the Ecological Guide; or (3) the application contains false or fraudulent information. *Id.*; see U.S./MEXICO HAZARDOUS WASTE WORK GROUP, U.S. EPA/SEDESOL, HAZARDOUS WASTE MANAGEMENT AND MAQUILADORA INDUSTRY MANUAL 5-9 (1993) (listing requirements for authorization for import and export of hazardous waste).

98. General Law, *supra* note 59, art. 151. Under the General Law, waste producers must also complete a manifest for shipments of hazardous waste within the territorial boundaries of Mexico. U.S./MEXICO HAZARDOUS WASTE WORK GROUP, U.S. EPA/SEDESOL, HAZARDOUS WASTE MANAGEMENT AND MAQUILADORA INDUSTRY MANUAL 5-7 to 5-8 (1993). Meanwhile, a waste transporter must also obtain special permission from the Mexican Department of Transportation in order to transport hazardous waste. Reglamento para el Transporte Terrestre de Materiales y Residuos Peligrosos, LEY DE VIAS GENERALES DE COMUNICACION [L.V.G.C.], art. 6 (Mex.). Transporters of hazardous waste in Mexico, whether for import/export or internal transportation, must also meet the following requirements: (1) register as a transporter of hazardous waste with both the Secretariat for Communications and Transportation (SCT) and SMARNP; (2) request from the generator of the waste the original manifest that pertains to the transportation of waste; (3) sign the original manifest and receive the generator's two copies, retaining one of the copies for five years and sending the other plus the original to the generator. U.S./MEXICO HAZARDOUS WASTE WORK GROUP, U.S. EPA/SEDESOL, HAZARDOUS WASTE MANAGEMENT AND MAQUILADORA INDUSTRY MANUAL 5-7 (1993). If the generator does not receive the original within 30 days of delivery, the generator must notify SMARNP. *Id.* The generator must retain the copy for 10 years. *Id.* Finally, hazardous waste transporters must verify that the hazardous waste received from the generator are correctly packed and identified, and the transporters must send a biannual report to SMARNP regarding the hazardous waste received for transportation during that period. *Id.* According to Jose Francisco, owner of Red Transportadora, one of Mexico's largest hazardous waste shippers, Mexican authorities customarily do not request these reports, and his company does not complete them. Interview with Jose Francisco, Owner of Red Transportadora, in Monterrey, Mexico (June 7, 1994).

historically been subject to lax enforcement due to Mexico's financial problems.

IV. NAFTA'S EFFECT ON HAZARDOUS WASTE BILATERAL COOPERATION

In addition to its own domestic environmental laws, Mexico abides by the environmental laws enumerated in the many bilateral and multilateral agreements to which it is a party. With regard to hazardous waste, the relevant agreements are NAFTA,⁹⁹ the North American Agreement on Environmental Cooperation (Environmental Side Agreement),¹⁰⁰ the Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area (La Paz Agreement),¹⁰¹ and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention).¹⁰² These agreements are important for what they do and do not say about hazardous waste.

A. NAFTA Provisions Relating to Environmental Concerns

The United States, Canada, and Mexico joined forces to create NAFTA, which went into effect on January 1, 1994.¹⁰³ The agreement's primary purpose is to promote free trade, investment, and cross-border movement of goods and services.¹⁰⁴ While NAFTA's focus is on trade, it also addresses general environmental concerns and has been heralded as the "greenest" international trade agreement in history.¹⁰⁵ NAFTA does not, however, provide many spe-

99. NAFTA, *supra* note 7.

100. North American Agreement on Environmental Cooperation, *opened for signature* Sept. 9, 1993, U.S.-Can.-Mex., 32 I.L.M. 1480 (entered into force Jan. 1, 1994) [hereinafter Environmental Side Agreement].

101. Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area, Aug. 14, 1983, U.S.-Mex., T.I.A.S. No. 10,827, 22 I.L.M. 1025 & 26 I.L.M. 16 (annexes) [hereinafter La Paz Agreement].

102. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, *opened for signature* Mar. 22, 1989, S. TREATY DOC. NO. 5, 102d Cong., 1st Sess., 28 I.L.M. 657 [hereinafter Basel Convention].

103. NAFTA, *supra* note 7; see Nicolas Kublicki, *The Greening of Free Trade: NAFTA, Mexican Environmental Law, and Debt Exchanges for Mexican Environmental Infrastructure Development*, 19 COLUM. J. ENVTL. L. 59, 59-62 (1994) (summarizing events and controversies leading to United States ratification of NAFTA).

104. NAFTA, *supra* note 7, pmb., 32 I.L.M. at 297.

105. See Joseph G. Block & Andrew R. Herrup, *Addressing Environmental Concerns Regarding Chilean Accession to NAFTA*, 10 CONN. J. INT'L L. 221, 226 (1995) (discussing

cifics regarding environmental laws and enforcement among the NAFTA signatories, and it makes no specific reference to the regulation of hazardous waste.¹⁰⁶

One section of NAFTA that addresses environmental concerns is article 1114(2).¹⁰⁷ Article 1114(2) provides that a party to the agreement should not waive or relax environmental measures in an attempt to attract foreign investment.¹⁰⁸ Another section discussing the environment is the preamble to NAFTA which sets forth the agreement's objectives and states that the signatory countries should pursue the various trade objectives "in a manner consistent with environmental protection and conservation."¹⁰⁹ In light of the generality of these provisions, however, environmentalists fear that NAFTA will not sufficiently protect the environment, especially along the United States-Mexico border.¹¹⁰

In particular, environmentalists note that NAFTA increases manufacturing, yet does not adequately address the results of increased manufacturing, namely, increased hazardous waste genera-

NAFTA's "green" reputation and environmental provisions); Steve Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treatymaking*, 8 TEMP. INT'L & COMP. L.J. 257, 289 (1994) (quoting President Clinton's characterization of NAFTA as "the first trade agreement in history dealing seriously with . . . environmental standards").

106. See *Environmental Compromise: Striking the Balance Between Trade and Ecology*, Int'l Env't Daily (BNA) (Nov. 20, 1992) (denoting that NAFTA does not provide any hazardous waste, air, emergency response, or water regulations), available in LEXIS, Envir'n Library, BNA-IED File; Diana L. Goodwin, Comment, *The Basel Convention on Transboundary Movements of Hazardous Wastes: An Opportunity for Industrialized Nations to Clean up Their Acts?*, 22 DENV. J. INT'L L. & POL'Y 193, 205 (1993) (recognizing that NAFTA does not create hazardous waste regulations); see also Scott D. Cahalan, Recent Development, *NIMBY: Not in Mexico's Back Yard? A Case for Recognition of a Human Right to Healthy Environment in the American States*, 23 GA. J. INT'L & COMP. L. 409, 413-14 (1993) (claiming that NAFTA fails to address substantive environmental issues, including hazardous waste regulation).

107. NAFTA, *supra* note 7, ch. 11, art. 1114(2), 32 I.L.M. at 642.

108. *Id.*

109. *Id.* pmbl., 32 I.L.M. at 297. See generally Daniel B. Magraw, Jr., *Trade Agreements*, C990 A.L.I.-A.B.A. 193, 195 (1995) (reviewing environmental provisions contained within NAFTA's preamble and main body), available in Westlaw, ALI-ABA Database.

110. See James P. Duffy III, *The Environmental Implications of a North American Free Trade Agreement*, 10 HOFSTRA LAB. L.J. 561, 562 (1993) (expressing environmentalists' fear that United States will exploit Mexico's "cheaper labor costs and looser environmental regulations" under NAFTA).

tion.¹¹¹ For example, the United States, Mexico, and Canada currently grant their export industries duty drawbacks for parts and components from foreign countries that are incorporated into products made for export.¹¹² Therefore, when a United States manufacturer pays \$100 in United States import duties on computer chips imported from Singapore, and uses the chips to build a computer that is subsequently exported to Japan, upon exportation of the computer, the manufacturer receives a full \$100 refund for duties imposed on the chips.¹¹³ Article 303 of NAFTA, however, phases out duty drawbacks for parts and components originating outside of the NAFTA regional market by the year 2000.¹¹⁴ The elimination of duty drawbacks on non-North American parts and components will create incentives for companies to find new sources of parts and components within the NAFTA market.¹¹⁵ This will increase the demand for North-American-made parts and components which, in turn, will lead to a rise in North American manufacturing. However, this increased manufacturing will result in an increase in hazardous waste byproducts—a problem that NAFTA fails to address.¹¹⁶

111. See Susan R. Fletcher & Mary Tieman, *Trade and Environment: GATT and NAFTA*, (Cong. Res. Serv., Washington, D.C.), Apr. 4, 1994, at 9–10 (addressing environmental concerns associated with passage of NAFTA and specifically noting that NAFTA provides for liberal trade and increased economic development but fails to address resulting problems such as increased border pollution and lax enforcement of environmental laws in Mexico).

112. See Thomas J. Schoenbaum, *The North America Free Trade Agreement (NAFTA): Good for Jobs, for the Environment, and for America*, 23 GA. J. INT'L & COMP. L. 461, 497 (1993) (defining and explaining NAFTA's timetable for elimination of duty drawbacks); cf. Cheryl Schechter & David Brill, Jr., *Maquiladoras: Will the Program Continue?*, 23 ST. MARY'S L.J. 697, 716 (1992) (explaining impact of eliminating duty drawbacks under NAFTA).

113. See Donald Harrison & Kenneth G. Weigel, *Customs Provisions and Rules of Origin Under the NAFTA*, 27 INT'L LAW. 647, 650 (1993) (explaining duty drawback and referral provisions in NAFTA).

114. See NAFTA, *supra* note 7, ch. 3, art. 303, 32 I.L.M. at 300–01 (restricting duty drawback and duty deferral programs).

115. See Guillermo Marrero, *What Foreigners Should Know About the Mexican Market*, in NAFTA: WHAT YOU NEED TO KNOW NOW 1994, at 117, 133–34 (PLI Commercial Law & Practice Course Handbook Series No. A-699, 1994) (noting that parts and components originating in North America will still enjoy duty drawback refunds).

116. See Stephen M. Lerner, Comment, *The Maquiladoras and Hazardous Waste: The Effects Under NAFTA*, 6 TRANSNAT'L LAW. 255, 268 (1993) (criticizing NAFTA for being silent on issues concerning hazardous waste).

B. *The Environmental Side Agreement*

Because NAFTA failed to provide specific environmental provisions, and because environmentalists were so vociferous in their objections to the agreement, the Clinton and Salinas administrations negotiated the Environmental Side Agreement.¹¹⁷ While the Environmental Side Agreement, like NAFTA, fails to establish uniform hazardous waste standards, it does provide for the imposition of trade sanctions against any NAFTA signatory that fails to enforce its own environmental standards.¹¹⁸ Under NAFTA and the Environmental Side Agreement, each country retains discretion to maintain the levels of protection that it considers appropriate, so long as the country abides by existing treaties and does not relax environmental standards to encourage investment.¹¹⁹

The thrust of the Environmental Side Agreement is to ensure that each country actively enforces its environmental laws.¹²⁰ To this end, the signatory countries created the North American Commission for Environmental Cooperation (CEC) as part of the Envi-

117. See Kal Raustiala, *Environmental Side Agreement: The CEC as a Model for Future Accords*, 25 ENVTL. L. 31, 33 (1995) (stating that Environmental Side Agreement resulted from pressure by environmental groups to include environmental protections in NAFTA).

118. See Environmental Side Agreement, *supra* note 100, pt. 5, art. 36, 32 I.L.M. at 1493-94 (providing for suspension of NAFTA benefits to parties that are ultimately noncompliant with Environmental Side Agreement); see also *Environmentalists Threaten Investigation Under Side Deal if Rescissions Bill Enacted*, Int'l Env't Daily (BNA) (Apr. 17, 1995) (commenting that pursuant to Environmental Side Agreement, NAFTA signatories may be investigated for failure to enforce their environmental laws), available in LEXIS, Envirm Library, BNA-IED File. *But cf. Lichtinger Sees Expansion of NAFTA Environmental Accord*, Int'l Env't Daily (BNA) (Dec. 16, 1994) (reporting that head of North American Commission for Environmental Cooperation believes that Environmental Side Agreement's purpose is to "allow solutions to be found without the imposition of trade sanctions"), available in LEXIS, Envirm Library, BNA-IED File.

119. See NAFTA, *supra* note 7, ch. 11, art. 1114(2), 32 I.L.M. at 642 (recognizing that "it is inappropriate to encourage investment by relaxing domestic, health or environmental measures"); see also Environmental Side Agreement, *supra* note 100, pmbl., 32 I.L.M. at 1482 (reaffirming each signatories' right to use their own natural resources and develop their own environmental policies provided that such usage and policy development does not result in damage to environment of other signatory countries).

120. See Reid A. Middleton, Comment, *NAFTA & the Environmental Side Agreement: Fusing Economic Development with Ecological Responsibility*, 31 SAN DIEGO L. REV. 1025, 1035-39 (1994) (explaining that agreement's dispute resolution mechanism encourages successful enforcement of laws).

ronmental Side Agreement.¹²¹ The CEC helps foster cooperation on and the improvement of environmental standards, and it establishes a mechanism for adjudicating charges when one country has failed to enforce its environmental laws.¹²² If the CEC determines that a party has persistently engaged in a pattern of failing to effectively enforce its environmental laws and, thereafter, consultation and arbitration fail to resolve the problem, then the CEC has the power to assess money damages against the offending party.¹²³ As a result, any country that does not effectively enforce its laws pertaining to the importation, exportation, and disposal of hazardous waste may ultimately be compelled to do so through mechanisms available in the Environmental Side Agreement.

In addition to the CEC, the Environmental Side Agreement created the tri-national Land Transportation Standards Subcommittee, which aspires to establish compatible standards and related measures for the transportation of dangerous goods.¹²⁴ The subcommittee will likely play an important role in the harmonization of technical standards for hazardous waste transportation in North America. This harmonization is important because Mexican trucking companies frequently exceed weight limits established by the Mexican Government¹²⁵ and, in so doing, make accidents more likely because overburdened vehicles are more difficult to control.

C. *NAFTA's Incorporation of Collateral Environmental Agreements*

While neither NAFTA nor the Environmental Side Agreement make specific references to hazardous waste,¹²⁶ NAFTA does in-

121. Environmental Side Agreement, *supra* note 100, pt. 3, art. 8-19, 32 I.L.M. at 1485-89. The CEC is a tripartite entity comprised of a Council, a Secretariat, and a Joint Public Advisory Committee. *Id.* art. 8, 32 I.L.M. at 1485.

122. *Id.* arts. 9-15, 32 I.L.M. at 1485-89.

123. *Id.* arts. 34, 36, 32 I.L.M. at 1492-94; see Jack I. Garvey, *Trade Law and Quality of Life—Dispute Resolution Under the NAFTA Side Accords on Labor and the Environment*, 89 AM. J. INT'L L. 439, 443-44 (1995) (describing dispute resolution procedures under Environmental Side Agreement and noting that when all else fails, monetary sanctions and suspension of trade benefits may ensue).

124. NAFTA, *supra* note 7, ch. 9, annex 913.5.a-1, 32 I.L.M. at 392-93.

125. See Interview with David P. Higerson, Chief Inspector of Cargo for United States Customs Service at the Port of Laredo, in Laredo, Texas (Sept. 20, 1995) (reporting frequent violations of weight limit restrictions by Mexican trucking companies).

126. See Raymond B. Ludwiszewski, "Green" Language in the NAFTA: Reconciling Free Trade and Environmental Protection, 27 INT'L LAW. 691, 703 (1993) (restating environ-

corporate two collateral agreements that contain provisions directly related to the transboundary shipment of hazardous waste. These agreements are the bilateral La Paz Agreement between the United States and Mexico¹²⁷ and the multilateral Basel Convention on the Transboundary Shipment of Hazardous Wastes.¹²⁸ NAFTA incorporates these agreements through article 104, section 1, which states:

In the event of any inconsistency between this Agreement and the specific obligations set out in the . . . [La Paz Agreement] or [Basel Convention] . . . such obligations shall prevail to the extent of the inconsistency, provided that where a party has a choice among equally effective and reasonable means of complying with such obligations, the Party chooses the alternative that is the least inconsistent with other provisions of this Agreement.¹²⁹

1. The La Paz Agreement

In response to growing concerns for the border environment, the governments of Mexico and the United States negotiated the 1983 La Paz Agreement.¹³⁰ The La Paz Agreement established the framework necessary to address the environmental problems that had developed in the border area.¹³¹ The La Paz Agreement consists of a series of annexes, each concentrating on a specific environmental problem.¹³²

mentalists' criticism that NAFTA and Environmental Side Agreement failed to address hazardous waste disposal problems).

127. La Paz Agreement, *supra* note 101.

128. Basel Convention, *supra* note 102.

129. NAFTA, *supra* note 7, ch. 1, art. 104(1), 32 I.L.M. at 297-98.

130. INSTITUTO NACIONAL DE ESTADÍSTICA GEOGRAFÍA E INFORMÁTICA, ESTADÍSTICAS DEL MEDIO AMBIENTE: MEXICO 1994, at 219 (1994) (on file with the *St. Mary's Law Journal*); see Steve Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 TEMP. INT'L & COMP. L.J. 257, 273 (1994) (discussing provisions and objectives of La Paz Agreement).

131. See Mark A. Sinclair, Note, *The Environmental Cooperation Agreement Between Mexico and the United States: A Response to the Pollution Problems of the Borderlands*, 19 CORNELL INT'L L.J. 87, 124 (1986) (recognizing that although La Paz Agreement may have more symbolic value than environmental value, it includes procedures by which border pollution problems may be formally addressed).

132. See Malissa H. McKeith, *The Environment and Free Trade: Meeting Halfway at the Mexican Border*, 10 UCLA PAC. BASIN L.J. 183, 193-94 (1991) (describing first four annexes to La Paz Agreement).

In 1986, the two governments enacted annex III to address the shipment of hazardous waste in the border region.¹³³ Before any hazardous waste may be shipped between the two countries, annex III mandates notification to and the receipt of consent from the importing party.¹³⁴ Under annex III, any shipment of hazardous waste that the importing country chooses to reject must be re-admitted into the exporting country.¹³⁵ One of annex III's most important requirements is that hazardous waste generated from raw materials admitted in-bond, under the maquiladora program, must be returned to the country of origin.¹³⁶ Thus, annex III helps importing governments prevent unwanted shipments and discourages the unscrupulous and secretive transborder movement of hazardous waste.¹³⁷

2. The Basel Convention

In addition to the La Paz Agreement, NAFTA incorporates the Basel Convention.¹³⁸ The United Nations sponsored the 1989 Basel Convention in response to heightened concerns regarding the export of hazardous waste from developed countries to third world countries.¹³⁹ The Basel Convention became effective on May 5,

133. La Paz Agreement, *supra* note 101, annex III, 26 I.L.M. at 25-32.

134. *Id.* annex III, art. 3, 26 I.L.M. at 27-28.

135. *Id.* annex III, art. 4, 26 I.L.M. at 28.

136. *Id.* annex III, art. 9, 26 I.L.M. at 29. Under Mexican law, nationalization provides an alternative to returning or exporting waste back to the country of origin. Buck J. Wynne, *The Impact of NAFTA on the U.S./Mexico Border Environment*, 26 URB. LAW. 11, 19-20 (1994). Through the process of nationalization, a manufacturer is responsible for the full amount of taxes that would have been imposed on the raw materials when they were originally imported into Mexico. Stephen M. Lerner, Comment, *The Maquiladoras and Hazardous Waste: The Effects Under NAFTA*, 6 TRANSNAT'L LAW. 255, 258-59, 259 n.40 (1993). The materials are subsequently treated as if they did not enter Mexico under the in-bond program and, as a result, do not have to be returned to the United States. *Id.* Therefore, any hazardous waste created from manufacturing use of these materials is subject to Mexican regulatory authority, not article IX of annex III. *Id.*

137. See Stephen M. Lerner, Comment, *The Maquiladoras and Hazardous Waste: The Effects Under NAFTA*, 6 TRANSNAT'L LAW. 255, 260-61 (1993) (reviewing annex III's requirement that waste importing countries receive notification and give consent for such shipments, thus allowing those countries to avoid unwanted hazardous waste shipments).

138. Basel Convention, *supra* note 102.

139. See Hugh J. Marbury, Note, *Hazardous Waste Exportation: The Global Manifestation of Environmental Racism*, 28 VAND. J. TRANSNAT'L L. 251, 262-67 (1995) (detailing events, concerns, challenges, and objectives of Basel Convention).

1992¹⁴⁰ and signified the first attempt to deal with hazardous waste exports on a global scale.¹⁴¹ The objective of the Basel Convention is to protect countries against the uncontrolled dumping of toxic wastes.¹⁴² It also promotes environmentally sound waste-disposal and waste-minimization efforts.¹⁴³

Mexico is one of the many countries that has ratified the Basel Convention.¹⁴⁴ The United States is not a signatory to the Basel Convention; however, President Clinton has called for the Basel Convention's ratification, and implementing legislation has been introduced in Congress.¹⁴⁵ In fact, the United States Senate has already given its advice and consent for the ratification of the Basel Convention, but Congress has not yet approved implementing legislation which would make the United States a full partner to the treaty.¹⁴⁶

The proposed United States Basel Convention implementing legislation is referred to as the Waste Export and Import Control

140. See *United Nations Officials See Basel Treaty as "Limping" into Effect with Limited Support*, Int'l Env't Daily (BNA) (May 22, 1992) (noting effective date of Basel Convention), available in LEXIS, Envirn Library, BNA-IED File.

141. See Hugh J. Marbury, *Hazardous Waste Exportation: The Global Manifestation of Environmental Racism*, 28 VAND. J. TRANSNAT'L L. 251, 262 (1995) (calling Basel Convention first major agreement in response to issue of hazardous waste exportation).

142. Basel Convention, *supra* note 102, pmbl., 28 I.L.M. at 657-59 (espousing belief that hazardous waste regulation is essential to protect countries from unconsented exportation and importation of hazardous waste and illegal dumping).

143. *Id.*; see William N. Doyle, Comment, *United States Implementation of the Basel Convention: Time Keeps Ticking, Ticking Away*, 9 TEMP. INT'L & COMP. L.J. 141, 141-45 (1995) (noting that Basel Convention seeks to reduce generation of hazardous waste and manage hazardous waste in manner that protects environment and human health).

144. See Hugh J. Marbury, Note, *Hazardous Waste Exportation: The Global Manifestation of Environmental Racism*, 28 VAND. J. TRANSNAT'L L. 251, 263 n.76 (1995) (listing 22 nations that had ratified Basel Convention as of April 28, 1992, including Mexico, Switzerland, France, El Salvador, Saudi Arabia, and Norway).

145. See John H. Cushman, Jr., *Clinton Seeks Ban on Export of Hazardous Waste*, N.Y. TIMES, Mar. 1, 1994 at A18 (reporting that President's proposed adoption of Basel Convention would place limits on waste export); *"Wait-and-See" May Become U.S. Policy on Recent Export Ban Under Basel Treaty*, Int'l Env't Daily (BNA) (June 21, 1994) (noting introduction of House bill adopting Clinton administration benchmarks for hazardous waste exportation), available in LEXIS, Envirn Library, BNA-IED File.

146. See *Basel Convention Partners Ban Exports From OECD to Developing World*, Int'l Env't Daily (BNA) (Sept. 26, 1995) (explaining that United States has not yet adopted legislation implementing Basel Convention and, therefore, is not partner to agreement), available in LEXIS, Envirn Library, BNA-IED File.

Act of 1994 (WEICA).¹⁴⁷ WEICA seeks to prohibit the United States, with a few exceptions, from exporting or importing any hazardous waste.¹⁴⁸ However, WEICA exempts countries with whom the United States already has bilateral treaties covering hazardous waste from the general prohibition against imports or exports of hazardous waste.¹⁴⁹ WEICA also requires that the country to whom the United States exports hazardous waste under an existing bilateral treaty manage those wastes in an environmentally sound manner and in compliance with the importing country's domestic laws.¹⁵⁰ Further, WEICA requires the United States and the importing country to concurrently conduct reciprocal inspections of TSD facilities to assess the facilities' capability to manage hazardous waste in an environmentally sound manner.¹⁵¹ Moreover, all United States environmental laws under the Hazardous and Solid Waste Amendments to RCRA¹⁵² are incorporated in WEICA.¹⁵³

WEICA's possible effect on the established flow of hazardous waste between the United States and Mexico is unclear. Mexico and the United States signed annex III to the La Paz Agreement in 1986, thus satisfying the exemption from WEICA's general prohibition against imports or exports of hazardous waste.¹⁵⁴ Therefore,

147. Waste Export and Import Control Act of 1994, H.R. 3965, 103d Cong., 2d Sess. (1994) [hereinafter WEICA]. The bill was introduced by Congressmen Al Swift (D-Wash.) and Mike Synar (D-Okla.). *Id.*

148. *Id.* § 12002(a).

149. *Id.* § 12003(a).

150. *Id.* § 12003(b)(1)(B).

151. WEICA, *supra* note 147, § 12003(b)(1)(c).

152. Hazardous and Solid Waste Amendments of 1984, Pub. L. No. 98-616, 98 Stat. 3221 (codified as amended at 42 U.S.C. §§ 6921-6939(b) (1994)).

153. *See* WEICA, *supra* note 147, § 12007 (proposing prohibition of import or export of hazardous waste in violation of applicable federal laws). WEICA has several other noteworthy provisions. First, WEICA includes a provision that would make it unlawful to export hazardous waste if the exporter knows or has reason to know that waste disposal will violate the management contract with the foreign TSD, or that disposal will occur in an environmentally unsound manner. *Id.* § 12003(d). Second, WEICA contains certain pre-export requirements that must be met before waste may be shipped abroad, including a requirement that the exporter provide the EPA with written notice of the proposed export. *Id.* § 12004(b)(1). Third, before the waste shipment may proceed, the EPA must receive the written consent of the importing country. *Id.* § 12004(b)(3). Finally, WEICA includes a provision containing new requirements for the importation of hazardous waste into the United States. *Id.* § 12005.

154. *See id.* § 12003(b)(1)(A) (exempting certain importation and exportation of hazardous waste if bilateral, multilateral, or regional agreements exist between United States and other countries).

even if WEICA is approved, the La Paz Agreement will continue to control the movement of hazardous waste between the two countries, so long as two major requirements are met. First, under WEICA the EPA must determine that Mexico manages its imported waste in an “environmentally sound” manner.¹⁵⁵ Second, there must be reciprocal inspections of TSD facilities in order for the La Paz Agreement to continue to control the export and import of hazardous wastes.¹⁵⁶

Despite the uncertainty as to the relation between the proposed WEICA and annex III of the La Paz Agreement, if the United States Congress passes WEICA, the EPA will have twelve months to promulgate necessary regulations to effectuate the goals of the Act.¹⁵⁷ During this twelve-month period, it is imperative that EPA officials consider the importance of the United States’ waste relationship with Mexico.

155. *Id.* § 12003(b)(1)(B). To meet the “environmentally sound” management standard, the EPA must find that Mexico has enacted and enforced a regulatory program which meets seven minimum requirements: (1) the EPA must find that Mexico presently regulates waste imported into its territory; (2) Mexican TSDs must limit the migration of hazardous waste to the environment; (3) categories of waste must be established which prohibit disposal or require treatment prior to disposal; (4) TSDs must monitor and test for releases of hazardous constituents; (5) Mexico must impose financial responsibility requirements for the closure and post-closure care of TSDs receiving waste; (6) TSD officials or government officials must “respond to substantial unauthorized releases of hazardous constituents;” and (7) the Mexican government must provide resources for reviewing and updating its hazardous waste regulatory program. *Id.* § 12003(c)(1)–(7).

156. *Id.* § 12003(b)(1)(C). The text of the La Paz Agreement does not provide for such reciprocal inspections. Brenda S. Hustis, Note, *The Environmental Implications of the North American Free Trade Agreement*, 28 TEX. INT’L L.J. 589, 628–29 (1993). The customs agencies of Mexico and the United States, however, have established a cooperative enforcement strategy to clean up illegal waste sites located in Mexico and to investigate United States-Mexico violations of hazardous waste export requirements. *Environmental Implications of NAFTA: Hearing on the Environmental Impact that the North American Free Trade Agreement Would Have on the United States Before the House Comm. on Merchant Marine and Fisheries*, 103d Cong., 1st Sess. 96 (1993) (statement of Carol M. Browner, Administrator, EPA). To accomplish this cleanup strategy, both Mexico and the United States are initiating joint enforcement training programs and coordinating inspection operations. *Id.*

157. WEICA, *supra* note 147, § 12007 (a)–(b)(1).

3. The Future of Basel

As of September 1995, WEICA was stalled in the United States Congress, and its passage remains uncertain.¹⁵⁸ In addition, the United States Chamber of Commerce is reconsidering its former support for the Basel Convention.¹⁵⁹ The Chamber's reconsideration stems from a March 25, 1994 decision made by the sixty-four signatory nations to the Basel Convention to halt exports of hazardous waste to countries that are not members of the Organization for Economic Cooperation and Development (OECD).¹⁶⁰ The Chamber opposes the ban on waste exports, especially regarding recyclable waste, by OECD members against non-OECD countries because the ban allegedly eliminates trade opportunities and fails to advance environmental goals set forth in the original Basel Convention.¹⁶¹

In light of the new ban against waste exports to non-OECD countries, the Chamber is reconsidering whether the United States should join the Basel Convention, and is reportedly investigating the creation of a regional system for the control of hazardous waste, as opposed to expending money on the global bureaucracy created by the Basel Convention.¹⁶² This viewpoint is supported by the fact that the United States exports less than one percent of all its hazardous wastes, with comparatively small amounts exported

158. As of September 1, 1995, WEICA was in the House Subcommittee of Transportation and Hazardous Materials, and House Subcommittee on Economic Policy, Trade and the Environment.

159. See "Wait-and-See" May Become U.S. Policy on Recent Export Ban Under Basel Treaty, *Int'l Env't Daily (BNA)* (June 21, 1994) (commenting that United States Chamber of Commerce is still undecided as to whether it will support Basel Convention ratification), available in LEXIS, *Envirn Library*, BNA-IED File.

160. See *Basel Treaty Partners Agree to Ban Waste Exports to Nations Outside OECD*, *INT'L ENV'T DAILY (BNA)* (Mar. 28, 1994) (announcing decision to ban exports of hazardous wastes to non-OECD countries), available in LEXIS, *Envirn Library*, BNA-IED File. The ban accomplishes two things. First, it immediately bans all hazardous waste exports for final disposal from OECD countries to non-OECD countries. *Id.* Second, it permits the export of recyclable hazardous waste to non-OECD countries until December 31, 1997, at which time recyclable waste exporting will also be banned. *Id.*

161. See *Industry Group Reconsidering Stance on U.S. Implementation of Basel Convention*, *Int'l Env't Daily (BNA)* (Apr. 4, 1994) (reporting reasons why United States Chamber of Commerce is rethinking its position on Basel Convention), available in LEXIS, *Envirn Library*, BNA-IED File.

162. *Id.*

outside of North America.¹⁶³ In fact, only an estimated 0.6% of hazardous waste from the United States is exported to non-OECD countries.¹⁶⁴ In light of the small percentage of hazardous waste exported by the United States to non-OECD developing countries, it may prove more beneficial for the United States to negotiate bilateral treaties with waste receiving countries while simultaneously developing a North American Hazardous Waste Management Plan.

V. DEVELOPMENT OF A NORTH AMERICAN HAZARDOUS WASTE MANAGEMENT PLAN

The development of a North American Hazardous Waste Management Plan would help facilitate free trade of hazardous waste between the United States and Mexico.¹⁶⁵ This free trade would protect the environment while realizing the other benefits of NAFTA. Free trade in hazardous waste, however, will require a long-term investment.¹⁶⁶ Consequently, a North American Haz-

163. See F. James Handley, *Exports of Waste from the United States to Canada: The How and Why?*, 20 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 10,061 (Feb. 1990) (containing data from EPA estimating that United States exports less than 1% of hazardous waste it generates), available in LEXIS, *Envirn Library*, NEWS File.

164. See *id.* at 10,061 n.1 (reporting that United States only exported 9,000 tons (.06%) of its hazardous waste outside of North America in 1988).

165. United States law does not entirely prohibit the importation of hazardous waste; rather, hazardous waste may be imported so long as the importer fully complies with EPA notice, generator, and manifest requirements. See *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities*, 40 C.F.R. § 264 (1995) (listing minimum standards for hazardous waste management). However, the EPA must grant its consent before these shipments can enter the United States. See Paul E. Hagan, *International and United States Controls on Transboundary Shipments of Hazardous Waste and Other Wastes*, C990 A.L.I.-A.B.A. 57, 70-71 (1995) (outlining notice and consent requirements for international movement of hazardous waste), available in Westlaw, ALI-ABA Database. One exception to this open-border policy is a ban on the importation of polychlorinated biphenyls (PCBs) into the United States. See *Toxic Substances Control Act*, 15 U.S.C. § 2605(e) (1994) (authorizing EPA regulation of PCBs); see also *U.S. Company Seeks to Import PCBs for Disposal Under Project XL Proposal*, *Int'l Env't Daily (BNA)* (Aug. 11, 1995) (discussing current illegality of importing polychlorinated biphenyls (PCBs), but noting that one United States company is trying to import PCBs under EPA's Project XL), available in LEXIS, *Envirn Library*, BNA-IED File.

166. See *Mexican Official Describes "Environmental Regulation Revolution"*, *Int'l Env't Daily (BNA)* (Aug. 29, 1995) (reporting that Mexico's director general of environmental regulation at INE believes that extended implementation periods for new environmental regulations will "aid the cause of pollution prevention and limit the need for control"), available in LEXIS, *Envirn Library*, BNA-IED File.

ardous Waste Management Plan should be created and phased in over a ten-year, three-stage period.

As a part of any plan for free trade of hazardous waste, however, the United States should require Mexico to agree to several conditions. First, Mexico must encourage the use of waste-minimization technologies by, for example, offering tax credits for the purchase of clean technologies. In addition, international monetary institutions, such as the World Bank, the Inter-American Development Bank, and the North American Development Bank (NADBank) could make loans and grants contingent on the development of a cleaner industrial base. Second, Mexico must develop its TSD infrastructure. Third, Mexico must agree to harmonize its waste-manifesting systems¹⁶⁷ with the United States. Such harmonization would result in increased efficiency and enforcement while simultaneously decreasing costs. Finally, Mexico must implement a regional liability and compensation scheme to close the door to the path of least resistance currently exploited by United States-owned companies that illegally dump hazardous waste in Mexico. These conditions are essential to ensure the success of the North American Hazardous Waste Management Plan.

A. A Closer Look at the Three-Stage Implementation Process and How It Prompts the Development of Mexican Treatment, Storage, and Disposal Facilities

Free trade in hazardous waste in North America could come to fruition in a span of ten years. During the ten-year period the plan would be implemented in a series of three stages.

167. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 18 (reporting that currently United States and Mexico's waste manifesting systems do not interface, thus causing unnecessary duplication and loss of records) (on file with the *St. Mary's Law Journal*). The waste-manifesting system developed pursuant to RCRA tracks inventory on handling of hazardous waste from its production to its disposal. Geoffrey Garver, *Poisoning for Profit: The Mafia and Toxic Waste in America*, 84 MICH. L. REV. 771, 774 (1986). Similarly, Mexico's hazardous waste manifesting system tracks the movement of hazardous waste by requiring facilities to (1) report whether they have generated hazardous waste; (2) handle and store the waste properly; (3) file manifests for hazardous waste generated, transported, and disposed; and (4) keep a monthly log of hazardous waste generated. Edward M. Ranger, *Environmental Aspects of Building a Facility in Northern Mexico*, C990 A.L.I.-A.B.A. 497, 553 (1995), available in Westlaw, ALI-ABA Database.

Stage I would last for the first two years after the signing of the agreement and would be used to place the necessary control mechanisms into operation. Without effective documentation, liability, and other control mechanisms, free trade in waste would be an environmental nightmare. These control mechanisms include, at a minimum, the following: (1) collection of data through government data base link-ups with intergovernmental cooperation through memorandums of understanding by the EPA and SMARNP; (2) development of harmonized technical standards for vehicle specifications and driver qualifications; (3) design and implementation of a uniform hazardous waste-manifesting system; (4) development of a regional liability and compensation regime; (5) facilitation of the financing and construction of TSDs in Mexico; (6) public education campaigns on proper management of hazardous waste in Mexico; and (7) technical assistance and training for Mexican regulatory personnel.

Stage II would last for eight years and would incorporate one-directional trade in hazardous waste. Under this scheme, waste generated in Mexico would be exported to United States TSDs, which are currently operating well below capacity.¹⁶⁸ This eight year one-directional trade in hazardous waste would give Mexico the time necessary to develop an adequate waste-disposal infrastructure, particularly the building of more TSDs, while simultaneously allowing United States TSDs to operate at full capacity, and thus more profitably. During this eight-year period, the parties would (1) utilize a uniform waste-manifesting system to track hazardous waste, continue financing and building TSD facilities in Mexico, and fund public education and technical assistance campaigns; (2) use data bases to provide incentives for waste management companies with responsible records; and (3) enact a compensation regime that would include an uniform process for oriented liability.

Ultimately, stage III envisions free trade in hazardous waste between the United States and Mexico. Tens years after the signing

168. See *Commercial Hazardous Waste Management Facilities: 1995 Survey of North America*, HAZARDOUS WASTE CONSULTANT, Mar.-Apr. 1995, at 4.5 (stating that recent state Capacity Assurance Plans submitted to EPA, as required by CERCLA, demonstrate that United States hazardous waste facilities are currently experiencing "substantial excess capacity").

of the agreement, if stages I and II have been instituted vigorously, Mexico will be in a position to engage in free trade in waste. At this juncture, North America will be prepared to benefit from economies of scale in waste management, similar to benefits realized in the European Union.¹⁶⁹ Prior to the commencement of stage III, however, the two governments, through their respective environmental agencies, must certify that the proper control mechanisms are in place and that the North American environment will not be damaged by free trade in hazardous waste. If the proper control mechanisms have not been implemented, then stage II would continue for successive one-year intervals until the mechanisms are in place. When such mechanisms are in place, free trade in hazardous waste will commence, which will benefit both the economy and environment of North America.

B. *Waste Minimization Under a Plan for Free Trade of Hazardous Waste*

Throughout the inception and continuation of the North American Hazardous Waste Management Plan, waste minimization should continuously be the parties' primary objective because efforts to control environmental degradation caused by hazardous waste are most successful if they focus on reducing the amount of waste generated rather than controlling waste after it has been generated.¹⁷⁰ Waste minimization involves a new way of thinking about waste management and generally involves four stages: (1) redesigning products to prevent waste generation at the source; (2) recycling waste material for recovery of useful products; (3) treating waste through incineration to reduce toxicity; and (4) disposing

169. See Christopher J. Foreman, *A Comparative Analysis of Internal Control on the Transfer of Waste Within the E.U. and U.S.*, 3 CARDOZO J. INT'L & COMP. L. 251, 278-96 (1995) (describing European Union's regulatory framework and secondary legislation which allow waste management industries to treat, dispose, recycle, manage, buy, and sell hazardous waste and their byproducts).

170. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13-15, 1995, at 9 (stating that waste-minimization technology is more environmentally beneficial and less expensive than "end of the pipe" technology which fails to address amount of waste generated) (on file with the *St. Mary's Law Journal*); see also *Commercial Hazardous Waste Management Facilities: 1995 Survey of North America*, HAZARDOUS WASTE CONSULTANT, Mar.-Apr. 1995, at 4.5 (reporting that one of EPA's highest priorities is waste reduction and minimization).

of remaining waste products in an appropriate manner.¹⁷¹ Perhaps the most effective incentive to encourage waste minimization is strict enforcement of the laws regarding the disposal of waste onto land, and into the air and water.

If Mexican regulatory authorities increase the number of inspections that they perform and issue more fines, companies would have incentives to reduce and recycle the waste they generate. For example, a few companies in Mexico make a profit recycling and selling their waste as raw materials.¹⁷² One such company is ProAmbiente, which blends large quantities of maquiladora hazardous waste into usable combustible fuels.¹⁷³ In addition to recycling and selling hazardous waste, the implementation of recycling and waste-minimization programs within a plant can help cut manufacturing and disposal costs. For example, in Tijuana, Baja California, the maquiladora operation of Sanyo Corporation has instituted a comprehensive waste-recycling loop which has significantly reduced disposal costs and has led to a more efficient use of several key raw materials.¹⁷⁴ These types of programs can help Mexico create an environmentally sustainable industrial base.¹⁷⁵ Unfortunately, companies currently utilizing these types of programs are the exception and not the rule in Mexico, so efforts must be made to increase the use of waste-minimization technologies.

The United States should help encourage waste minimization by exporting its advanced waste-minimization infrastructure and tech-

171. ROGENE A. BUCHHOLZ, *PRINCIPALS OF ENVIRONMENTAL MANAGEMENT: THE GREENING OF BUSINESS* 375 (1993).

172. See Interview with Guillermo Septien, Executive Assistant to the General Director of Zinc Nacional, in Monterrey, Mexico (Mar. 12, 1996) (explaining that Zinc Nacional buys arc dust, which is generated in steel mills and contains high levels of zinc, from United States and Mexican steel companies, recycles it, and sells it at profit). Altos Hornos de Mexico and Aceros Planos are two major Mexican steel mills that sell their arc dust to Zinc Nacional for recycling. *Id.* In this recycling process both the sellers and the recyclers of the hazardous waste profit. *Id.*

173. Interview with L. Martin Espinosa Gutierrez, General Manager of ProAmbiente, in Monterrey, Mexico (Nov. 13–15, 1995).

174. Interview with Cecilia Moreno Manjarrez, Environmental Coordinator for Sanyo in Mexico, in Monterrey, Mexico (Nov. 13, 1995).

175. See Judith E. Jacobsen, *Population, Consumption, and Environmental Degradation: Problems and Solutions*, 6 *COLO. J. INT'L ENV'T. L. & POL'Y* 255, 268–72 (1995) (synthesizing ideas on how recycling and waste-minimization programs can facilitate sustainable development).

nology to Mexico.¹⁷⁶ To this end, United States export tax credits should be provided to companies that export “green” technology to Mexico.¹⁷⁷ Additionally, the United States Department of Commerce should facilitate the dissemination of waste-minimization technology to Mexico instead of continuing current exportation of older technology that focuses on waste disposal.¹⁷⁸ The United States Export-Import Bank, which created an environmental exports program designed to increase exports of environmentally beneficial goods and services to developing countries, should also be used to transfer waste-minimization technology.¹⁷⁹ Indeed, the Export-Import Bank recently announced an agreement “that could supply \$500 million in financing to encourage Mexican municipalities to buy United States waste water treatment goods and services.”¹⁸⁰ Finally, Mexico should push NADBank to use the funds

176. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 9 (criticizing United States for not exporting its waste-minimization technology to Mexico) (on file with the *St. Mary's Law Journal*); Interview with Eric Fredell, Environmental Trade Specialist, United States Department of Commerce, in Monterrey, Mexico (May 18, 1995) (stating that Clinton administration has made export of waste-minimization technology to Mexico top priority). Some EPA officials have specifically designated Mexico as a “high-return market” for exports of environmental technology. *Rapid Growth in Global Market for Environmental Technologies Predicted*, Int'l Env't Daily (BNA) (Nov. 7, 1994), available in LEXIS, Envirn Library, BNA-IED File.

177. Cf. *Mexican Official Describes “Environmental Regulation Revolution,”* Int'l Env't Daily (BNA) (Aug. 29, 1995) (discussing Mexico's attempts to formulate “a new ecological tax regime in which products known to damage the environment would be taxed”), available in LEXIS, Envirn Library, BNA-IED File. The idea of using taxes to help ensure environmental compliance or promote environmental investment is not a new idea. See Peter S. Watson, *How to Ruin Free Trade Before It Starts*, WALL ST. J., Aug. 18, 1992, at A16 (reporting that United States Representative Richard Gephardt proposed transaction tax to offset environmental degradation).

178. Cf. *Commerce Department Outlines Plan to Help U.S. Companies Export to Mexico*, Int'l Env't Daily (BNA) (Nov. 4, 1994) (noting that Department of Commerce has already outlined environmental technology export plan in which it calls Mexico “one of the leading export opportunities for U.S. companies” involved in environmental technologies), available in LEXIS, Envirn Library, BNA-IED File.

179. See *Rapid Growth in Global Market for Environmental Technologies Predicted*, Int'l Env't Daily (BNA) (Nov. 7, 1994) (discussing how Export-Import Bank's new program “will provide enhanced levels of support for a broad range of environmental exports”), available in LEXIS, Envirn Library, BNA-IED File. One type of support the new program entails is short-term insurance for small-business environmental exporters wherein the Export-Import Bank will insure up to 95% for commercial losses and 100% for political losses. *Id.*

180. *Id.*

that have been specifically earmarked for hazardous waste management along the United States-Mexico border.¹⁸¹

C. *Uniform Waste-Manifesting System*

In addition to waste minimization, the North American Hazardous Waste Management Plan should also focus on creating a harmonized waste-manifesting system. The goal of waste manifesting is to provide “cradle to grave” tracking of waste to ensure proper disposal and allocation of liability.¹⁸² The present bifurcated waste-tracking system, in which the United States and Mexico each use their own manifesting systems to trace the movement of hazardous waste, does not meet the “cradle to grave” goal because the two countries’ manifest systems do not interface with one another.¹⁸³ Further, the current bifurcated system leads to paperwork duplication, which increases the cost of transporting hazardous waste.¹⁸⁴ For example, the Chemical Waste Management division of the EPA estimates that under the current system each manifest document costs twenty-six dollars.¹⁸⁵ If these same

181. See *Environmental Projects*, 5 No. 1 MEX. TRADE & L. REP. 9, 9 (Jan. 1995) (noting that NADBank is responsible for funding hazardous waste projects along United States-Mexico border), available in Westlaw, MEXTLR Database.

182. Cf. Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6922(a)(5), 6923(a)(3)–6924(a)(2) (1994) (mandating use of “cradle to grave” hazardous waste-manifest system designed to track hazardous waste from point of generation to point of disposal); Edward M. Ranger, *Environmental Aspects of Building a Facility in Northern Mexico*, C990 A.L.I.-A.B.A. 497, 553 (1995) (explaining that Mexican laws on hazardous waste utilize “cradle to grave” waste-manifest systems to follow hazardous waste movement from point of creation, through treatment and management phases, to disposal), available in Westlaw, ALI-ABA Database.

183. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 18 (criticizing current bifurcated hazardous waste-manifesting system as “extremely bureaucratic, time-consuming, expensive, and susceptible to fraudulent behavior”) (on file with the *St. Mary's Law Journal*).

184. See *id.* (stating that bifurcated hazardous waste-manifesting system causes unnecessary duplication of documents, consequence of which is “increased costs and delays for business community” as well as “increased processing costs for governmental agencies”); see also *Statement of the United States Council for International Business on the Role of Environment in the North American Free Trade Agreement* (Apr. 25, 1991) (predicting that streamlined environmental procedures will reduce paperwork and improve efficiency), in *NAFTA & THE ENVIRONMENT: SUBSTANCE AND PROCESS* 648 (Daniel Magraw ed. 1995).

185. *Cross-Border Hazardous Waste Shipments to be Tracked Electronically*, PESTICIDE & TOXIC CHEM. NEWS, Mar. 8, 1995, available in Westlaw, PTCHEMN Database.

documents could be harmonized and expedited electronically, each document would cost only twelve to fourteen dollars.¹⁸⁶

A uniform waste-manifesting system satisfies the interests of both governments, the environmentalists, and private industry.¹⁸⁷ Government agencies on both sides of the border should support a uniform waste-manifesting system because it would (1) decrease processing costs and (2) aid the implementation of NAFTA by facilitating the movement of goods.¹⁸⁸ Environmentalists should also support this plan because a single, harmonized hazardous waste manifest, supported by data base link-ups and documentary procedures, will be more accurate and reliable,¹⁸⁹ thus achieving true "cradle to grave" tracking of hazardous waste. Increased accuracy and reliability, gained from a harmonized waste-manifesting system, will also be beneficial because it will help alleviate congestion at border crossings.¹⁹⁰ Finally, private industry should support a uniform manifesting system because less paperwork would be required under such a system, which would facilitate faster and cheaper border crossings.¹⁹¹

186. *Id.*

187. See *Statement of the United States Council for International Business on the Role of Environment in the North American Free Trade Agreement* (Apr. 25, 1991) (suggesting harmonization of environmental standards, regulations, and enforcement), in *NAFTA & THE ENVIRONMENT: SUBSTANCE AND PROCESS* 648 (Daniel Magraw ed. 1995).

188. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), *Problem Statement: First Session, Nov. 13–15, 1995*, at 18 (pointing to increased costs and delays resulting from present bifurcated waste-manifesting systems) (on file with the *St. Mary's Law Journal*).

189. See *id.* (reporting that current hazardous waste-manifesting systems between United States and Mexico are not harmonized and, consequently, result in increased costs, delays, fraud, and lack of reliable information).

190. See U.S. DEP'T OF TRANSP., FED. HIGHWAY ADMIN., *INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT: SECTIONS 1089 AND 6015: ASSESSMENT OF BORDER CROSSING AND TRANSPORTATION CORRIDORS FOR NORTH AMERICAN TRADE, REPORT TO CONGRESS* 161 (1991) (detailing various environmental, economic, and intangible problems created by high-volume, trade-related traffic at border, and calling for improved inspection technology to help alleviate inspection delays).

191. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), *Problem Statement: First Session, Nov. 13–15, 1995*, at 18 (remarking that paper-based manifesting systems are very costly and time-consuming to business community) (on file with the *St. Mary's Law Journal*).

D. *Regional Liability and Compensation Regime*

Finally, in addition to the aforementioned considerations, the North American Hazardous Waste Management Plan should include a regional liability and compensation regime because the current regimes inadvertently create incentives for companies to illegally export and illicitly dump hazardous waste in Mexico.¹⁹² The new regime should not establish uniform substantive standards to be applied by courts; rather, it should be process oriented to facilitate the entry and enforcement of judgments.¹⁹³ To this end, the liability and compensation regime should minimize or eliminate procedural difficulties relating to subject matter jurisdiction, in personam jurisdiction, forum non conveniens, and choice of law provisions.¹⁹⁴

A binational effort of this nature could be developed as a new annex to the La Paz Agreement.¹⁹⁵ The new annex should obligate the United States to permit a Mexican national to sue for compensation in United States courts for damages stemming from the transboundary movement of hazardous waste by a United States citizen or a United States-based company.¹⁹⁶ The Mexican claim-

192. *See id.* at 6 (illustrating causes and consequences of current American and Mexican liability regimes and positing that said regimes “encourage illegal waste disposal”); *cf.* United Nations Conference on Environment and Development: Rio Declaration on Environment and Development, June 14, 1992, Principle 13, U.N. Doc. A/CONF.151/5/Rev. 1, reprinted in 31 I.L.M. 874, 878 (calling for development of international law addressing liability and compensation for transnational environmental damage). *See generally* Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT’L L. 24, 37–74 (1994) (proposing six different liability and compensation regimes specifically designed for transboundary movement of hazardous waste). The National Law Center for Inter-American Free Trade (NLCIFT) is currently developing a plan for a compensation and liability regime covering hazardous waste shipments between the United States and Mexico.

193. *See* Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT’L L. 24, 47 (1994) (recommending “Transnational Process Regime” which would focus on process rather than on substantive standards).

194. *Id.*

195. *See* NAFTA, *supra* note 7, ch. 1, art. 104 & 105, 32 I.L.M. at 297–98 (allowing for incorporation of other agreements and amendments that modify those agreements, so long as they are not inconsistent with objectives of NAFTA); *cf.* Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT’L L. 24, 47 (1994) (suggesting that Transnational Process Regime could be enacted through legally binding instrument similar to amendment to Basel Convention).

196. *Cf.* Nordic Convention on the Protection of the Environment, Feb. 19, 1994, art. 1 & 2, Den.-Fin.-Nor.-Swed., 1092 U.N.T.S. 279, 13 I.L.M. 591 (entered into force Oct. 5, 1976) [hereinafter Nordic Convention] (allowing environmental nuisance in one country to

ant should be permitted to sue and appeal adverse decisions on the same terms as an American citizen.¹⁹⁷ Further, arrangements should be made for exchange of information, on-site inspections of damage, and government consultations necessary to facilitate the judicial process. Such an approach is currently utilized by the Nordic countries of Denmark, Finland, Norway, and Sweden.¹⁹⁸

A regional liability and compensation scheme would provide resources to remedy environmental damage caused by improperly managed waste.¹⁹⁹ It would do so by forcing those engaged in the transborder trade of hazardous waste to internalize the external costs of improper hazardous waste management.²⁰⁰ In other words, the proposed liability regime would be based upon the “polluter-pays” principle. This principle seeks internalization of the cost of pollution by those who are actually polluting, as opposed to

constitute nuisance in any other signatory country, and permitting any person affected by environmental nuisance in another signatory country to bring suit in that country’s administrative or court system).

197. See Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Waste*, 88 AM. J. INT’L L. 24, 47 (1994) (presenting hypothetical situation in which one party could sue another party for compensation for damage related to transboundary movement of hazardous waste in second party’s state court system).

198. See Nordic Convention, *supra* note 196, arts. 10–11, 13 I.L.M. at 591 (providing for on-site inspections and government consultations by and between signatory countries’ supervisory authorities).

199. See Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT’L L. 24, 36–37 (1994) (calling for liability regime which would “obtain resources for remedying damage to people, property, and the environment from improperly handled wastes”); see also Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 13 (criticizing current unharmonized environmental liability scheme between United States and Mexico saying that resulting “gaps and loopholes in the law and regulatory framework . . . promote non-compliance”) (on file with the *St. Mary’s Law Journal*).

200. See Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 AM. J. INT’L L. 24, 36 (1994) (positing that imposition of financial responsibility upon those who generate waste encourages responsible waste management); see also *Statement of the United States Council for International Business on the Role of Environment in the North American Free Trade Agreement* (Apr. 25, 1991) (calling for harmonization of environmental liability regimes to internalize environmental costs), in *NAFTA & THE ENVIRONMENT: SUBSTANCE AND PROCESS* 168 (Daniel Magraw ed. 1995); cf. Hila J. Alderman, Comment, *The Ghost of Progress Past: A Comparison of Approaches to Hazardous Waste Liability in the European Community and the United States*, 16 Hous. J. INT’L L. 311, 319–20 (1993) (discussing European Community’s proposed civil liability directive which incorporates policy whereby polluters are forced to internalize environmental costs caused by their polluting activities).

allowing society as a whole to absorb the costs of environmental cleanup.²⁰¹ By forcing the internalization of external costs, the polluter-pays principle will increase exposure to liability which, in turn, will act as an incentive for industry to responsibly manage hazardous waste.²⁰²

Applying the polluter-pays principle in Mexico would lead to more responsible waste-management practices because waste generators and handlers would fear exposure not only to administrative sanctions from governmental regulators, but also to large civil suits.²⁰³ Currently in Mexico, the social and redemption costs of illegally dumped waste are absorbed by the entire society rather than by the companies who generate and handle the waste.²⁰⁴ If

201. See, e.g., *Statement of the United States Council for International Business on the Role of Environment in the North American Free Trade Agreement* (Apr. 25, 1991) (defining polluter-pays principle as one in which polluting party bears cost of remediation), in *NAFTA & THE ENVIRONMENT: SUBSTANCE AND PROCESS* 168 (Daniel Magraw ed. 1995); Colin Crawford, *Some Thoughts on the North American Free Trade Agreement, Political Stability and Environmental Equity*, 20 *BROOK. J. INT'L L.* 585, 616 (1995) (explaining that polluter-pays principle eliminates "what might be viewed as hidden subsidies in the form of clean up costs that would otherwise be borne directly by the government or subsequent property owners"); Hila J. Alderman, Comment, *The Ghost of Progress Past: A Comparison of Approaches to Hazardous Waste Liability in the European Community and the United States*, 16 *HOUS. J. INT'L L.* 311, 320 (1993) (describing philosophy of polluter-pays principle as one in which party who benefits from polluting activity bears costs associated with such activity).

202. See Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 *AM. J. INT'L L.* 24, 36 (1994) (positing that forced internalization of external costs of environmental pollution will lead waste generators to manage their waste properly); Hila J. Alderman, Comment, *The Ghost of Progress Past: A Comparison of Approaches to Hazardous Waste Liability in the European Community and the United States*, 16 *HOUS. J. INT'L L.* 311, 320 (1993) (opining that polluter-pays principle gives incentives to waste generators to take preventative action).

203. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 7 (criticizing Mexico's current liability regime because it affords private citizens no remedy for damages suffered by illegally dumped hazardous wastes; rather, citizens must rely on government to enforce environmental regulations) (on file with the *St. Mary's Law Journal*). See generally Edward M. Ranger, *Environment's New Power Arrangement: How This Prez Plans to Revamp Ministry with History of Change*, *BUS. MEX.*, Jan.-Feb. 1995 (discussing environmental regulatory proposals of Mexico's President Zedillo and explaining that polluter-pays concept is one of administration's specific policies), available in LEXIS, News Library, BUSMEX File.

204. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 7 (remarking that in Mexico "those who pollute are often not forced to pay for the damage they cause") (on file with the *St. Mary's Law Journal*).

the proposed liability regime were implemented, those who generate and handle waste would make the appropriate investments to ensure proper disposal and treatment of waste. In addition, companies would be encouraged to quickly and efficiently clean up existing hazardous waste dumpsites that would represent potential liability.²⁰⁵

To implement this type of regional liability and compensation regime, the United States and Mexico must first identify the parties responsible for hazardous waste mismanagement. Unfortunately, while hazardous waste is being produced in increasing amounts in North America,²⁰⁶ assessing the damage caused by the movement of hazardous waste across the United States-Mexico border is difficult, and the information gathered to date is sparse and anecdotal.²⁰⁷ The lack of reliable data makes it difficult to determine the cost of clean up and the identity of responsible hazardous waste generators, exporters, carriers, or importers.²⁰⁸ To formulate an effective North American Hazardous Waste Management Plan, and to properly attach liability, policy makers must have access to accurate information.²⁰⁹

To this end, a computerized data base, or electronic data interchange,²¹⁰ linking the United States EPA and the Mexican

205. See ROGENE A. BUCHHOLZ, *PRINCIPLES OF ENVIRONMENTAL MANAGEMENT: THE GREENING OF BUSINESS* 375 (1993) (asserting that when companies are liable for waste they produce, there is incentive to clean up existing dumpsites).

206. See Malissa H. McKeith, *The Environment and Free Trade: Meeting Halfway at the Mexican Border*, 10 *UCLA PAC. BASIN L.J.* 183, 185-88 (1991) (discussing economic growth along United States-Mexico border associated with growth of maquiladora industry, which has led to significant increase in "hazardous substance use and generation").

207. *Id.* at 191 (explaining that EPA and SEDUE hazardous waste records are incomplete); see also Sean D. Murphy, *Prospective Liability Regimes for the Transboundary Movement of Hazardous Wastes*, 88 *AM. J. INT'L L.* 24, 29-30 (1994) (noting worldwide difficulty in obtaining reliable data on hazardous waste generation and disposal).

208. See Committee for Responsible Hazardous Waste Management in North America (HAZNA), *Problem Statement: First Session*, Nov. 13-15, 1995, at 18 (lamenting regulators' lack of "real time" information) (on file with the *St. Mary's Law Journal*).

209. See *id.* (stating that "without reliable up-to-date information, it is difficult to make viable policies," let alone enforce them).

210. See Interview with Joe Schultes, EDI Pilot Project Administrator, Environmental Protection Agency, in Monterrey, Mexico (Nov. 11, 1995) (defining electronic data interchange (EDI) as common data formatting language used to get business and other strategic information from one computer system to another, or between computers of two or more independent organizations). In an EDI system, business information is exchanged in the form of transaction sets, which replace paper business documents. *Id.* To participate in an EDI, two parties enter into a grading partners agreement and select a transmission

SMARNP should be established.²¹¹ Such a data base should reveal: (1) the types, frequency, and severity of environmental damage; (2) the companies or individuals involved; and (3) the presence of appropriate insurance mechanisms. Those regularly transporting waste across the border should be given a uniform EPA/SMARNP identification number, called the North American Hazardous Waste Identification Number, to assist data collection. This number would be the basis of all information contained in the data base. This number would work like the current EPA identification number²¹² except that it would be valid in both the United States and Mexico.

Additionally, the joint data base should be used to alleviate border congestion and reward waste-management companies with responsible records. For example, to pass through customs, companies would have to show their North American Hazardous Waste Identification Number. Companies that have no violations registered in the data base for the previous three years should be given a AAA rating in the data base. Those with a AAA rating would enjoy streamlined vehicle and cargo inspections.²¹³ These

method, which usually involves direct computer based dial-up, either to each other or through a third party EDI network service called a Value Added Network (VAN). *Id.* The EDI messages are equivalent to legal paper documents, so participants need to ensure that sufficient audit and back-up procedures are in place to guard against loss of information and to provide accountability should the need arise. *Id.*

211. *See id.* (stating that EPA believes some of obvious benefits of electronic reporting include: reducing data acquisition costs for state and federal governments; establishment of national standards, which facilitate exchange of information; improved data accuracy through elimination of data entry from paper forms; and reduced long-term storage costs through volume reduction of paper manifests); *see also* Committee for Responsible Hazardous Waste Management in North America (HAZNA), Problem Statement: First Session, Nov. 13–15, 1995, at 18 (condemning United States and Mexico for failing to use EDI in their reporting and manifesting systems) (on file with the *St. Mary's Law Journal*).

212. *See* 40 C.F.R. § 263.11 (1995) (mandating that all hazardous waste transporters acquire EPA identification number from EPA Administrator).

213. *See generally* Paul B. Carroll, 'NAFTA Superhighway' Sought for Trade, WALL ST. J., Sept. 19, 1995, at A19 (describing plan supported by United States-Mexican Coalition which would utilize advanced technologies to track trucks travelling between United States and Mexico along I-35 corridor). The plan is aimed at alleviating traffic bottlenecks at border crossings. *Id.* To relieve traffic, trucks would display a computerized "smart card" in their windshields. *Id.* The smart card would contain a bar code identifying the vehicle and its cargo. *Id.* Those trucks would pass quickly through the border and would stop for their cargo inspections at a customs station "hundreds of miles away from the congestion at the border." *Id.*

facilitated procedures will provide incentives for honest and responsible waste management, speed-up traffic flow at ports of entry, and allow customs agents to focus their inspection efforts on companies with irresponsible track records.

In an effort to gather the kind of data that would be used under such a liability and compensation regime, the United States and Mexico are currently conducting a pilot project to electronically track the transborder movement of hazardous waste.²¹⁴ The objective of the project is to replace the complicated paper-based system used to track waste shipments with an electronic system.²¹⁵ The project is expected to reduce time and transaction costs for maquiladoras while providing regulators with real-time data.²¹⁶ For example, under the current system, maquiladoras must comply with reporting requirements in both countries, filling out as many as thirty paper forms, reports, and notifications for each shipment of waste.²¹⁷ In contrast, the new pilot program reduces those thirty documents into a single electronic format,²¹⁸ thus saving time and resources while providing regulators with up-to-the-minute information.

VI. CONCLUSION

NAFTA, its incorporated predecessors, and its progeny have had a positive impact on environmental protection in the United States and Mexico. Indeed, the importance of environmental issues during the NAFTA debate helped reawaken the environmental ethic in both countries. Unfortunately, while NAFTA led to many posi-

214. *Pilot Project Aims to Use Computers to Track Hazardous Waste Crossing Borders*, Int'l Env't Daily (BNA) (Mar. 3, 1995), available in LEXIS, Envirn Library, BNA-IED File; see Interview with Joe Schultes, EDI Pilot Project Administrator, Environmental Protection Agency, in Monterrey, Mexico (Nov. 11, 1995) (discussing plans and objectives of EPA's EDI pilot project).

215. Interview with Joe Schultes, EDI Pilot Project Administrator, Environmental Protection Agency, in Monterrey, Mexico (Nov. 11, 1995); see *Pilot Project Aims to Use Computers to Track Hazardous Waste Crossing Borders*, Int'l Env't Daily (BNA) (Mar. 3, 1995) (explaining that project's goal "is to determine the viability of replacing the cumbersome paper system of tracking hazardous waste shipments with an electronic system"), available in LEXIS, Envirn Library, BNA-IED File.

216. *Pilot Project Aims to Use Computers to Trace Hazardous Waste Crossing Borders*, Int'l Env't Daily (BNA) (Mar. 3, 1995), available in LEXIS, Envirn Library, BNA-IED File.

217. *Id.*

218. *Id.*

tive developments, it may also create problems for the management of hazardous waste in North America. NAFTA will increase industrial expansion in Mexico, and as the Mexican industrial base expands, so will the generation of hazardous waste. This is extremely problematic because as the generation of hazardous waste increases, so too will Mexico's problems managing and disposing of the hazardous waste dumped within its borders. As Mexico's problems become exacerbated, related health and environmental problems will likely arise in the United States because pollution knows no boundaries.

As this Article has demonstrated, strict environmental regulation of hazardous waste in the United States increases the cost of properly disposing of hazardous waste and, in turn, creates incentives to export and illegally dump hazardous waste along the path of least resistance to Mexico. This exporting and dumping is most vividly illustrated by evidence that United States-owned maquiladoras do not repatriate much of the waste they generate; rather, they nationalize or dispose of it illegally. However, it appears that the amount of maquiladora waste returned to the United States is increasing daily and this positive trend is likely to continue. Nonetheless, because of Mexico's lack of an adequate TSD infrastructure, overburdened ports of entry, lack of waste-minimization technology, and scarcity of financial resources to improve the aforementioned, the United States-Mexico border region is at the cusp of an environmental disaster.

In an attempt to alleviate some of the problems associated with the transboundary movement of hazardous waste, the international community created the Basel Convention. While Mexico is a signatory, the United States has failed to ratify the treaty and it remains doubtful that the United States will do so because of recent amendments to the Convention banning all exports to non-OECD countries. Consequently, because hazardous waste issues are increasingly important, and because it does not appear that the United States will ratify the Basel Convention anytime soon, it is crucial for the United States and Mexico to jointly readdress the current waste relationship established in annex III of the La Paz Agreement to reflect changes spurred by NAFTA.

To this end, the United States and Mexico should negotiate a North American Hazardous Waste Management Plan that would encompass provisions benefitting both the United States and Mex-

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ico in the long run. The plan would be implemented in a ten-year, three-stage process and could be added as an amendment to annex III of the La Paz Agreement. By implementing the plan, both Mexico and the United States will profit financially and environmentally: Mexico will have time and resources to develop a strong TSD infrastructure; United States TSD facilities will fill their excess capacity; waste-minimization technologies will be utilized to reduce the amount of hazardous waste generated; harmonized waste-manifesting systems will streamline procedures and paperwork, thus achieving the cradle-to-grave tracking goal while reducing traffic congestion and costs; data link-ups will provide more real-time data; and a new liability and compensation regime will help internalize the external costs of pollution, which will give polluters incentives to properly dispose of their waste.