

## The Environmental Cooperation Agreement between Mexico and the United States: A Response to the Pollution Problems of the Borderlands

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**THE ENVIRONMENTAL COOPERATION AGREEMENT  
BETWEEN MEXICO AND THE UNITED  
STATES: A RESPONSE TO THE  
POLLUTION PROBLEMS OF  
THE BORDERLANDS**

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## INTRODUCTION

On August 14, 1983, United States President Reagan and Mexican President de la Madrid signed the "Agreement Between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area."<sup>1</sup> The Agreement formally recognizes the problems of uncontrolled water and air pollution along the U.S.-Mexican border. While it provides a broad framework for eventual cooperation in resolving common transfrontier environmental conflicts, the Agreement fails to establish any specific implementing arrangements or binding environmental standards. Instead, the Agreement contains only general pledges to cooperate fully to "prevent, reduce and eliminate sources of pollution."<sup>2</sup>

This Note will assess the significance of the Agreement as a potential solution to U.S.-Mexican border pollution problems. The

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1. Agreement Between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area, 19 WEEKLY COMP. PRES. DOC. 1137 (Aug. 14, 1983) [hereinafter cited as Environmental Cooperation Agreement]. The full text of the Agreement appears in the Appendix, *infra*.

2. *Id.*, art. 2.

Note first discusses current environmental problems and the factors complicating their effective resolution. The Note then presents a brief history of water-use relations between the two countries to illustrate the shortcomings of an ad hoc approach to the resolution of environmental problems. Finally, the Note analyzes the text of the new Agreement and its probable efficacy. The Note concludes that the Agreement is largely symbolic in nature, offering neither established rules of conduct nor enforcement mechanisms to safeguard shared resources.

## I. THE MAJOR TRANSBOUNDARY POLLUTION PROBLEMS

### A. GENERAL BORDER CHARACTERISTICS

The U.S.-Mexican border extends approximately two thousand miles through the Sonoran Desert from the Pacific Ocean to the Gulf of Mexico.<sup>3</sup> The border region lies within the political jurisdiction of four U.S. states and six Mexican states.<sup>4</sup> The region's population is largely concentrated in a series of rapidly growing "twin" communities, located directly on the border.<sup>5</sup>

The border region is a single geographic area where the two countries share common air<sup>6</sup> and water resources.<sup>7</sup> The international political boundary, however, hinders the rational management of these shared resources.<sup>8</sup> The border artificially divides urban areas, water

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3. Busch, *Environmental Management: A Basis for Equitable Resource Allocation*, in VIEWS ACROSS THE BORDER 338, 344 (S. Ross ed. 1978).

4. *Id.* The U.S. states are Texas, New Mexico, Arizona, and California. The Mexican states are Tamaulipas, Nuevo León, Coahuila, Chihuahua, Sonora, and Baja California. *Id.*

5. *Id.* In the 1970's, it was estimated that 80% of the Mexican and over 70% of the U.S. border population lived in urban areas. Utton, *Overview*, 22 NAT. RES. J. 735, 736 (1982). The largest of the twin cities are San Diego-Tijuana, El Paso-Ciudad Juárez, Calexico-Mexicali, Brownsville-Matamoros, and Laredo-Nuevo Laredo. Busch, *supra* note 3, at 344. Smaller twin border communities with pollution problems include Yuma-San Luis Rio Colorado, Nogales-Nogales, Bisbee-Naco, and Douglas-Aqua Prieta. Jamail & Ullery, *International Water Use Relations Along the Sonoran Desert Borderlands*, in 14 UNIVERSITY OF ARIZONA OFFICE OF ARID LANDS, RESOURCE INFORMATION PAPER 5 (1979).

6. Both nations share a common airspace, or airshed. Temperature inversions and atmospheric conditions prevent air pollutants from dispersing quickly in many border locales. Pollutants criss-cross the border repeatedly without regard to the international boundary. Applegate, *Transfrontier Air Pollution Along the United States-Mexico Border*, 4 THE ENVIRONMENTALIST 219 (1984).

7. Mexico and the United States share the surface waters of the Colorado, Rio Grande, Tijuana, San Pedro, Santa Cruz, and New Rivers. The two nations are also beginning to compete for groundwater resources bisected by the border. See Utton, *An Assessment of the Management of U.S.-Mexican Water Resources: Anticipating the Year 2000*, 22 NAT. RES. J. 1093-1116 (1982).

8. Lyon, *Ecology of the Border Region*, in VIEWS ACROSS THE BORDER 333, 337 (S. Ross ed. 1978). Lyon names two factors that complicate solutions to transfrontier pollution problems. First, customary international law imposes no general obligation to protect

basins, and airsheds.<sup>9</sup> Responsibility for resource management falls within the political authority of two nations with differing legal systems, national objectives, and levels of economic development.<sup>10</sup>

Successful management of resource problems requires region-wide planning and transboundary cooperation.<sup>11</sup> Historically, Mexico and the United States have demonstrated limited success in managing mutual border resources. The countries have preferred to maintain their territorial sovereignty and freedom of action without imposing significant international constraints.<sup>12</sup>

The major environmental problems at the border are the shortage and poor quality of both underground and surface waters and increasing levels of air pollution in urban areas.<sup>13</sup> Explosive population growth, unplanned urbanization, and rapid industrial development intensify pressures on transfrontier resources.<sup>14</sup> This Section provides

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a neighboring nation's environment. Second, Mexico and the United States do not share common objectives in addressing ecological problems. *Id.* This Note will examine these and other factors in detail. See *infra* Section II.

9. Many of the twin cities are economically, culturally, and socially very similar, but are unable to manage common problems as an integrated unit because their respective national governments give them widely differing roles and responsibilities in solving local problems. The Mexican cities possess little local autonomy and depend upon the national government to make major decisions. In the United States, local and state governments play a much more active role in managing their own affairs. Busch, *supra* note 3, at 345. See *infra* notes 97, 104 and accompanying text.

10. Jamail & Ullery, *supra* note 5, at 1. See Lyon, *supra* note 8, at 333-37. See also *infra* notes 73-110 and accompanying text.

11. See Utton, *supra* note 5, at 735, 738 (1982); Ross, *Introduction (to Commentaries), in VIEWS ACROSS THE BORDER* 361, 380 (S. Ross ed. 1978). This binational approach to resource management is termed the "community theory." As applied to transfrontier water resources, common water basins are developed, managed, and shared as a unit, without regard to national boundaries. Utton, *International Water Quality Law, in INTERNATIONAL ENVIRONMENTAL LAW* 154, 155 (L. Teclaff & A. Utton eds. 1978) [hereinafter cited as Utton, *International Water Quality Law*].

12. See *infra* Section III(B)(2); *infra* note 153 and accompanying text. For the proposition that governments are reluctant to give up their sovereign control over natural resources and prefer loose cooperative arrangements over the creation of independent, supranational pollution control agencies, see Utton, *International Water Quality Law, supra* note 11, at 154, 174-75.

13. Busch, *supra* note 3, at 344. See *infra* notes 15-71 and accompanying text.

14. Utton, *supra* note 5, at 735-36. Rates of population growth along the border have been astronomical since the 1930's. See Alba, *Mexico's Northern Border: A Framework of Reference*, 22 NAT. RES. J. 749, 752 (1982). Current population figures are unavailable; in 1978, however, it was estimated that about 3.5 million people lived in the border region. Busch, *supra* note 3, at 344. Growth in the United States' southwest region, the "sun belt" area, is well documented and expected to continue. See Utton, *supra* note 5, at 735. Most of the population growth, however, is occurring on the Mexican side of the border. It is estimated that about 95% of the border's population growth from 1970 to 1979 occurred in Mexican communities. Jamail & Ullery, *supra* note 5, at 6. One authority projects a 3.6% growth rate per year for the Mexican states bordering on the United States. Utton, *supra* note 5, at 736. This could lead to a doubling of the region's population by the year 2000. *Id.* at 744.

Staggering population increases are due not only to population growth per se, but also to the heavy labor migration from Mexico's interior to the border region. The northern bor-

a description of the most serious pollution issues.

### B. INADEQUATE WATER SUPPLIES

An adequate water supply is critical to the future economic development of the border region. Both industrial development and agricultural productivity rely heavily on water consumption.<sup>15</sup> Continued urbanization and population growth is also dependent on locating new sources of potable water. Finally, the exploitation of newly discovered energy resources in the Colorado River Basin may place new stress on available water supplies.<sup>16</sup>

Water is a scarce commodity in the arid borderlands. Historically, competition between Mexico and the United States focused on the use of the Colorado and Rio Grande River systems for agricultural irrigation water.<sup>17</sup> Through the years, the two nations successfully

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der has long attracted Mexicans seeking employment opportunities in the industrialized United States or in the active tourist business generated in the border communities. See Alba, *supra*, at 749-63; Jamail & Ullery, *supra* note 5, at 7. Population increases are also the result of Mexico's national economic development policies for its northern frontier. In 1965, the Mexican government relaxed its laws against foreign ownership of factories and reduced import taxes on raw materials; these measures, intended to stimulate the depressed Mexican economy, were part of an effort to encourage U.S. industry to locate in Mexico. Since then, more than 600 U.S.-owned assembly plants have located on the border to take advantage of the large supply of cheap Mexican labor. While drastically cutting the production costs of U.S. firms and providing Mexico with its second largest source of foreign income, this border industrialization, or *maquiladora* program, has further increased the population pressure on border resources. See TIME, Sept. 10, 1984. See generally Hansen, *Economic Growth Patterns in the Texas Borderlands*, 22 NAT. RES. J. 805-21 (1982); Ross, *supra* note 11, at 10-11.

The tremendous influx of people into the border communities causes rapid and unplanned urbanization and exacerbates pollution problems. Population growth far outstrips the communities' capabilities to plan and fund municipal facilities. Furthermore, the lack of reliable, current population figures makes projecting future growth rates and planning for needed facilities difficult. For example, Mexicali, the largest of the Mexican border communities, has probably doubled in population since 1970, despite official Mexican estimates to the contrary. Inadequate water supply and treatment facilities, whose design was based on underestimated population growth projections, delay effective sanitation solutions. Today, residents must boil municipal water to ensure safety. Jamail & Ullery, *supra* note 5, at 4, 6.

15. Utton, *supra* note 7, at 1093, 1099; Armstrong, *Anticipating Transboundary Water Needs and Issues in the Mexico-United States Border Region in the Rio Grande Basin*, 22 NAT. RES. J. 877 (1982).

16. Utton, *Water Problems & Issues Affecting United States-Mexico Relations: Policy Options & Alternatives* (1978) (manuscript available from the University of New Mexico School of Law Library and on file at the offices of the *Cornell International Law Journal*). The four southwest states of New Mexico, Arizona, Colorado, and Utah contain huge reserves of coal, oil, shale, and uranium. The United States, in its efforts to become energy independent, is increasingly demanding the waters of the Colorado River Basin, which it shares with Mexico, to develop these energy resources. Energy-related water consumption is expected to create significant water shortages in the Colorado Basin states by the year 2000. *Id.* at 4.

17. Bath, *A Review of Mexico's Water Policy*, in Rocky Mountain Council for Latin American Studies, Proceedings of the 26th Annual Regional Conference (Missoula, Montana) 18 (1980).

allocated their respective shares of the surface waters of these major transboundary rivers through a series of formal treaties.<sup>18</sup> Today, the major surface flows are completely committed to existing uses. As municipal, industrial, and agricultural water demands increase, the border faces a severe and imminent water shortage.<sup>19</sup>

### C. GROUNDWATER EXPLOITATION

With full appropriation of the border's surface waters, the nations are turning to underground water reservoirs (aquifers) to satisfy their needs.<sup>20</sup> The uncontrolled mining of groundwater, however, creates further problems for the future. First, aquifers may become irreversibly depleted if pumping exceeds the very slow rate of natural replenishment by rainfall and percolation.<sup>21</sup> Already, in the twin city area of El Paso-Ciudad Juárez, uncoordinated drilling of groundwater on

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18. Two treaties apportioned the surface waters of the major transfrontier rivers: the Rio Grande Irrigation Convention with Mexico, May 21, 1906, United States-Mexico, 34 Stat. 2953, T.S. No. 455, and the Treaty Relating to the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Feb. 3, 1944, United States-Mexico, art. 2, 59 Stat. 1219, T.S. No. 994, 3 U.N.T.S. 313. For a detailed analysis of these treaties, see Utton, *supra* note 7, at 1095-98.

19. Bath, *supra* note 17, at 18; Utton, *supra* note 7, at 1093-98. Experts warn that the two nations must implement greater conservation measures at the border and replace water intensive agricultural uses with municipal and industrial uses to avoid surface water shortages by the year 2000. *Id.* Because of its long history of water scarcity, Mexico may be more aware of the need to conserve border water resources than is the United States. Bath, *supra*, at 18.

20. Improved drilling and mining technology allow both countries to pump underground water at an unprecedented rate in order to supplement surface water supplies. See generally Utton, *The Development of International Groundwater Law*, in INTERNATIONAL GROUNDWATER LAW 1-24 (L. Teclaff & A. Utton eds. 1981) [hereinafter cited as Utton, *The Development of International Groundwater Law*]. For example, California and Mexico share common groundwater basins in the Colorado and Tijuana River drainages which are being pumped from both sides of the border at an increasing rate. Weatherford, Malcolm & Andrews, *California Groundwater Management: The Sacred and the Profane*, 22 NAT. RES. J. 1031, 1041 (1982) [hereinafter cited as Weatherford]. For a discussion of a current conflict between Mexican and U.S. border communities over the groundwater of California's Yuha Valley, see Jamail & Ullery, *supra* note 5, at 28-36. See also Utton, *International Groundwater Management: The Case of the U.S.-Mexican Frontier*, in INTERNATIONAL GROUNDWATER LAW 158 n.8 (L. Teclaff & A. Utton eds. 1981) [hereinafter cited as Utton, *International Groundwater Management*] (describing three other examples of border conflicts over groundwater near San Luis, Sonora, in the Nogales region, and in the metropolitan area of El Paso-Ciudad Juárez).

21. Busch, *supra* note 3, at 350. The amount of water which can be pumped over time from an aquifer depends on how it is managed. A "sustained yield" is the amount of water which can be withdrawn annually without injury to the aquifer or to connected surface water supplies. If more than the annual yield is pumped, an "overdraft" occurs. Overdrafts can cause "1) progressive reduction of the water resource, 2) development of uneconomic pumping conditions, 3) degradation of groundwater quality, 4) interference with prior water rights, and 5) land subsidence caused by lowered groundwater levels." Charbeneau, *Groundwater Resources of the Texas Rio Grande Basin*, 22 NAT. RES. J. 957-58 (1982).

Aquifers are exhaustible resources. Continued overdrafting can cause complete exhaustion of the underground water accumulated over hundreds of years, especially if the annual

both sides of the border outstrips the aquifer's natural recharge rate.<sup>22</sup> The area is projected to run out of groundwater by the year 2000.<sup>23</sup>

Second, increased mining of groundwater creates the risk of aquifer contamination. Excessive overdrafting of an aquifer lowers the water table and allows highly saline surface wastewaters from agricultural and industrial activities to enter and infect the entire underground water supply.<sup>24</sup> The situation is made more critical because groundwater reservoirs are not self-cleansing, but instead store contaminants indefinitely.<sup>25</sup> Because monitoring of underground pollutants is difficult and expensive, aquifer contamination may go undetected for years.<sup>26</sup> Even when detected, cleanup is costly and often impracticable.<sup>27</sup>

In view of the often irreversible nature of these problems, it is crucial that Mexico and the United States prevent rather than react to groundwater depletion and contamination. The two nations, however, have been unable to produce a general agreement governing the management of shared groundwaters.<sup>28</sup>

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recharge is small. Utton, *International Groundwater: The Case of the U.S.-Mexican Frontier*, in *INTERNATIONAL GROUNDWATER LAW* 180-81 (L. Teclaff & A. Utton eds. 1981).

22. Utton, *supra* note 7, at 1107-08. Both cities use groundwater almost exclusively for their drinking water supplies. *Id.* at 1107.

23. H.G. APPLGATE, *ENVIRONMENTAL PROBLEMS OF THE BORDERLANDS* 40 (1979).

24. Jamail & Ullery, *supra* note 5, at 2. Mining of groundwater in the El Paso-Ciudad Juárez area already has caused contamination of border aquifers by allowing the intrusion of overlying saline waters. Charbneau, *supra* note 21, at 969.

25. Teclaff, *Principles for Transboundary Groundwater Pollution Control*, 22 *NAT. RES. J.* 1065, 1066-67 (1982).

26. *Id.* The management of groundwater is more difficult than that of surface water. The sources of groundwater contamination are often more numerous and more widely scattered than are the sources of surface water pollution. For example, aquifers can become polluted when pollutants are discharged onto a land surface comprising the aquifer's recharge area, into a well tapping the aquifer, or into streams which feed the aquifer. The underground hydrological pathways of aquifer contamination are neither observable nor fully understood. *Id.* Scientists agree, however, that any management of groundwater must recognize the interrelationship and interdependence between surface and groundwater systems. Mining of groundwater has a direct effect on surface water flow and quality. Utton, *supra* note 21, at 178-80.

27. Teclaff, *supra* note 25, at 1066. Professor Teclaff suggests a superfund arrangement for clean-up of transfrontier groundwater contamination. *Id.* at 1072-73.

28. Hayton, *Institutional Alternatives for Mexico-U.S. Groundwater Management*, in *INTERNATIONAL GROUNDWATER LAW* 135 (L. Teclaff & A. Utton eds. 1981). The problem of groundwater management has only recently received international attention. Despite the absence of a binational groundwater agreement, Mexico and the United States have successfully resolved past groundwater problems on an ad hoc basis. For example, the countries agreed to limit groundwater extractions in the border area near Yuma, Arizona, by means of the 1972 "Minute 242" agreement. Utton, *supra* note 21, at 157, 159-69. See *infra* notes 171-76 and accompanying text. The International Boundary and Water Commission is also compiling an inventory of transfrontier groundwater resources to be shared by both nations. Utton, *supra* note 7, at 1115. See generally Burman & Cornish, *Needed: A Groundwater Treaty Between the United States and Mexico*, 15 *NAT. RES. J.* 385 (1975).



On the domestic level, both nations fail to manage their groundwater resources effectively. Groundwater regulation in the United States is left to the states rather than to the federal government.<sup>29</sup> The four states bordering Mexico, while the heaviest users of groundwater in the United States, lack adequate laws or enforcement initiative to control groundwater exploitation.<sup>30</sup> Mexico's federal government, on the other hand, has legal authority to control groundwater withdrawals but rarely exercises it.<sup>31</sup>

This legal vacuum encourages economic waste. Each nation is developing its groundwater resources as rapidly as possible to outdo its neighbor.<sup>32</sup> The presence of five different jurisdictional systems of groundwater law (four state and one national) at the border hinders binational management of this vital resource. The likelihood of international conflict and permanent groundwater depletion is great unless the two nations recognize and formally address the groundwater issue.<sup>33</sup>

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29. Hayton, *supra* note 28, at 137-38.

30. Clark, *Overview of Groundwater Law and Institutions in the United States Border States*, 22 NAT. RES. J. 1007-14 (1982). Texas has virtually no controls on groundwater mining. *Id.* at 1010. See also Johnson, *Texas Groundwater Law: A Survey and Some Proposals*, 22 NAT. RES. J. 1017-29 (1982). Arizona passed groundwater legislation in 1980 which promises future progress towards management if the new law can survive constitutional challenges. Clark, *supra*, at 1010. California law is a confusing array of judicially created doctrines; the legal regime actually encourages excessive pumping by aggressive users. See Weatherford, *supra* note 20, at 1031-42. New Mexico has the only comprehensive regulations in effect, but these regulations completely ignore cooperative management of transborder aquifers with Mexico. Clark, *supra*, at 1010. See generally Du Mars, *New Mexico Water Law: An Overview and Discussion of Current Issues*, 22 NAT. RES. J. 1045-62 (1982).

31. Utton, *supra* note 7, at 1107. The Secretariat of Agriculture and Water Resources has authority to regulate groundwater extractions and to prohibit pumping completely if injury to aquifers occurs. *Id.* This Note does not attempt to describe the Mexican groundwater legal regime.

32. Utton, *supra* note 21, at 162-63.

33. See Mumme, *The U.S.-Mexican Conflict Over Transboundary Groundwaters: Some Institutional and Political Considerations*, 12 CASE W. RES. J. INT'L L. 505-24 (1980) (assessing potential solutions to the groundwater problem). Mumme believes that efficient development of groundwater is much more important to Mexico than to the United States. *Id.* at 519.

Many commentators suggest that conjunctive management of border surface and groundwater should be placed in a binational agency with authority to designate international groundwater areas, to apportion water resources, and to administer and enforce each nation's water rights. See Utton, *supra* note 7, at 1108-12. Several commentators also contend that the International Boundary and Water Commission (IBWC) is the proper agency to assume binational management of all border groundwater, because the IBWC "has proved successful in the past in dealing with related matters and because utilization of an existing organization may speed agreement." Burman & Cornish, *supra* note 28, at 403-04. See *infra* notes 125-34 and accompanying text (discussing the IBWC). On the other hand, one authority on international groundwater management believes an agreement establishing parallel legislation for each nation is preferable to a comprehensive treaty placing management in the hands of a supranational commission, because each nation then has

## D. SURFACE WATER CONTAMINATION

### 1. A General Description

The most critical and longstanding international pollution issue facing the borderlands is the discharge of municipal sewage and industrial wastes from Mexican communities to rivers flowing into the United States.<sup>34</sup> The Mexican communities of Mexicali, Tijuana, Nogales, Laredo, and Naco all lack adequate municipal wastewater collection and treatment systems.<sup>35</sup> Urban growth is occurring faster

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more discretion to decide how it will reach agreed upon goals. Teclaff, *supra* note 25, at 1074-75.

34. See Jamail & Ullery, *supra* note 5, at 2-3.

35. For a brief historical account of Mexicali's pollution problems, see *infra* Section I(D)(2).

Since 1970, the population of Tijuana, Mexico, has nearly tripled to approximately one million inhabitants. As a result, Mexico has been unable to maintain a reliable sewage collection system or a fully operational sewage treatment facility. Tijuana dumps partially treated and untreated sewage directly into the ocean which contaminates U.S. beaches south of San Diego. Because the natural drainage in the Tijuana area is from Mexico to the United States, frequent breakdowns in the Tijuana sewage disposal system cause overflows to drain into the San Diego area. G. Baumli, Principal Engineer, U.S. Section, International Boundary and Water Commission, *Statement to California Assembly Select Committee on International Water Treatment and Reclamation* (Mar. 13, 1984) (on file at the offices of the *Cornell International Law Journal*). See also *THE ATLANTIC*, July 1984, at 19; *Boston Globe*, Nov. 14, 1983, at 3, col. 4.

Experts predict the situation will become more critical in the future because the State of Tijuana plans to provide running water to every Tijuana home by 1986. Only about half of the city's residences presently have direct water access. The new water use will further burden the sewage system. *U.S.-Mexico: Transboundary Pollution Issues*, Environmental Protection Agency Briefing Paper (July 3, 1984) [hereinafter cited as EPA Briefing Paper] (on file at the offices of the *Cornell International Law Journal*).

Over the years, Mexico, at the request of the United States, has attempted to improve Tijuana's sewage disposal system. In 1962, Mexico built a sewage disposal system which discharged untreated sewage directly into the ocean. This system worked until the early 1970's, when frequent breakdowns and overloads demonstrated the system's inadequacy. In 1980, Mexico began construction of a new 60 million gallons per day pumping plant. This plant is now 50% complete, and Mexico has spent 10 million U.S. dollars on the improvements. Even when completed, however, this new plant will be inadequate to handle Tijuana's sewage loads. G. Baumli, *supra*, at 4.

San Diego actively assists its Mexican neighbors by treating approximately 65% of the sewage generated in Tijuana under a 1965 "temporary" emergency agreement. An emergency pipeline connection with the San Diego sewage system was built in 1965 to prevent sewage flows into the United States from chronic breakdowns in the Tijuana system. Under the agreement then reached, Mexico pays about \$200,000 per year, although the cost to San Diego of treating Mexico's sewage has risen to about \$2 million per year. Recently, the U.S. Congress began partially reimbursing San Diego with an \$800,000 per year subsidy. Despite this binational cooperation, south San Diego beaches have been quarantined hundreds of days over the past four years, with accompanying declines in tourism, property values, public health, and coastal recreation. G. Baumli, *supra*, at 5.

Mexico acknowledges its responsibility for the sewage problem and plans to construct new sewage disposal lines to the ocean, south of Tijuana. Mexico warns, however, that its financial problems will delay completion of the disposal lines for six to ten years. The City of San Diego is adamant that a solution be found immediately and proposes that a joint U.S.-Mexican sewage treatment plant be built in the United States under the auspices and funding of the IBWC. *THE ATLANTIC*, July 1984, at 20.

than these cities' capability to plan, finance, construct, or maintain wastewater treatment facilities.<sup>36</sup> The much smaller U.S. border cities, while not entirely free from fault, generally have more effective municipal waste disposal systems than their Mexican neighbors.<sup>37</sup>

Industrial effluents also contribute to surface water pollution. Many Mexican industries have no on-site treatment facilities, and industrial wastes, including toxic substances, are dumped directly into river systems.<sup>38</sup> Although Mexico has adequate legislation to control both municipal and industrial water pollution, the government is slow to enforce its regulations or to finance the technology necessary to cor-

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One such joint treatment plant was actually built under the guidance of the IBWC, but subsequent problems raise questions about its precedential value. In 1972, Mexico and the United States constructed an international waste treatment plant to serve the two communities of Nogales, Arizona, and Nogales, Sonora. The plant was built in the U.S. community, and Mexico shared in the original construction costs, despite its initial objections to the location of the plant in the United States and to the higher degree of treatment required by U.S. laws. See Jamail & Ullery, *supra* note 5, at 48-50. Mexico continues to pay a portion of the plant's annual operating costs, based on Mexico's share of sewage flows through the plant. This binational sanitation project is a unique example of international cooperation in transboundary pollution control. EPA Briefing Paper, *supra*.

New problems, however, now create a dangerous health situation in the Nogales twin communities. Due to a lack of adequate initial planning, the treatment plant already operates at full capacity and requires immediate enlargement. In addition, an inadequate sewage collection system in Nogales, Sonora, is causing the discharge of raw sewage on both sides of the border. *Id.* In early 1979, the U.S. Section of the IBWC complained "that Mexican authorities have not improved and extended the sewage collection facilities as needed to keep pace with the rapid increase in population in Nogales, Sonora. . . ." Jamail & Ullery, *supra* note 5, at 50 & n.332. The U.S. Section of the IBWC further states that it has continually asked Mexico "for immediate and long term corrective measures, but Mexico has provided only temporary corrective works." *Id.*

Another international sewage problem involves the Rio Grande River. Discharges of untreated sewage from the Mexican city of Nuevo Laredo into the Rio Grande seriously endanger the health of people on both sides of the border who rely on the river for their domestic water supply. Nuevo Laredo has no facilities to treat its industrial or domestic waste. As a result, 14 million gallons of raw sewage is discharged into the river daily. The U.S. city of Laredo is also not free from blame. Its existing treatment facilities cannot serve the needs of its present population. EPA Briefing Paper, *supra*.

Finally, a water sanitation problem is occurring along the Arizona-Mexico border. Sewage overflows from the wastewater treatment facilities in the Mexican border town of Naco, Sonora, frequently drain northward across the border, contaminating the drinking water supply of Bisbee, Arizona. Despite monetary assistance from local U.S. governments and tentative efforts by Mexico to temporarily repair Naco's facilities, spills of raw sewage still occur. EPA Briefing Paper, *supra*. Mexico has rejected a U.S. proposal for the construction of a joint international sewage treatment plant for the area. For a discussion of this conflict, see Jamail & Ullery, *supra* note 5, at 52-55.

36. See Jamail & Ullery, *supra* note 5, at 4-8. See *supra* note 14 and accompanying text.

37. See Comment, *Effluent Neighbors: The Mexico-United States Water Quality Dilemma*, 3 CAL. W. INT'L L.J. 152, 161 (1972) [hereinafter cited as *Effluent Neighbors*].

38. Jamail & Ullery, *supra* note 5, at 2-3. For example, a Mexican copper mine in Cananea, Sonora, is the source of heavy metal contamination of the San Pedro River which flows into Arizona. This toxic pollution injures U.S. ranchers and farmers and threatens to contaminate the drinking wells of Tucson and Sierra Vista, Arizona. *Id.* at 37. For an example of industrial water pollution at Mexicali, Mexico, see *infra* note 46 and accompanying text.

rect the situation.<sup>39</sup>

In addition to inadequately treated municipal and industrial wastes, a major water quality problem in the border's agricultural areas is the increase in river salinity resulting from extensive irrigation practices.<sup>40</sup> When water is applied to a field, salts are leached from the soil. The return of drainage water causes high concentrations of salt in downstream water supplies. Highly saline water is unsuitable for domestic and industrial uses and damages agricultural lands and crops.<sup>41</sup> Mexico and the United States battled over the salinity of the Colorado River for nearly thirty years before the United States, in a 1973 binational agreement, recognized an obligation to deliver salt-free water to Mexico.<sup>42</sup> The salinity of the Colorado River and of many other transboundary rivers is causing renewed conflict, however, because of the reduced availability of fresh water for dilution<sup>43</sup> and because of the high cost of energy-intensive desalinization processes.<sup>44</sup>

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39. See *infra* notes 93-96 and accompanying text.

40. Busch, *supra* note 3, at 350. Mexico places a high priority on immediate reduction of the salinity of its northern rivers due to the adverse effect of high salinity on food production. Therefore, Mexico may be willing to cooperate on other ecological problems if the United States is willing to respond to Mexico's concern with salinity. See Ross, *Introduction, in VIEWS ACROSS THE BORDER* 20 (S. Ross ed. 1978).

41. P. FRADKIN, *A RIVER NO MORE* 297-98 (1981). Farmers can respond to salinity problems by planting lower value, more salt tolerant crops; by adding more irrigation water to dilute salts; by applying expensive fertilizer to agricultural land; or by using other sophisticated technology. None of these methods, however, is generally available in a developing nation such as Mexico. *Id.*

42. See *infra* Section III(B)(2)(a) (discussing the historical background and provisions of this binational agreement called Minute 242). Despite this so-called "permanent solution" to the border salinity problem, agricultural lands in Mexico continue to suffer from prior and continued U.S. failures to deliver salt-free water; some lands are irretrievably damaged. See Jamail & Ullery, *supra* note 5, at 15-16.

43. See Utton, *supra* note 7, at 1099-1102. One expert states that "the most pervasive and important water quality problem facing the United States and Mexico is salinity. Since the two countries have agreed under Minute 242 on a salinity level for water delivered to Mexico, an important water quality concern is the effect of energy development on the future salinity levels in the [Colorado] river." Bishop, *Impact of Energy Development on Colorado River Water Quality*, 17 NAT. RES. J. 649, 661, 669 (1977).

It is generally agreed that increased energy development in the upper Colorado River Basin will increase salt and heavy metal concentrations downriver, violating U.S. water quality commitments to Mexico. Utton, *supra* note 7, at 1100-01. Although salinity problems in the Rio Grande River are not yet critical, increasing population and economic growth could harm the river's water quality in the immediate future. *Id.* at 1101. Many commentators recommend binational cooperation on the control of salinity through active IBWC monitoring and management, increased water conservation, and reduction of water intensive uses. *Id.* at 1102.

44. Ross, *supra* note 40, at 9. Desalinization, although very expensive, is preferable to other salinity countermeasures, because it minimizes water loss, limitations on agriculture, and environmental problems. *Id.* The United States and Mexico, however, have had little success with joint desalinization projects. Under Minute 242, the United States agreed to build and finance a desalinization plant near Yuma, Arizona. The plant took over 10 years to complete at the enormous cost of over 200 million dollars, while continual procrastination and threats to abandon the project by the United States injured binational relations. See Jamail & Ullery, *supra* note 5, at 15-16.

## 2. *An Illustration: The New River Pollution Controversy*

Mexico and the United States recently identified the New River as the most serious transboundary pollution problem facing the two nations.<sup>45</sup> The New River situation illustrates the recurring pattern of border sanitation conflicts.

The New River flows north from Mexico into the United States, eventually emptying into the Salton Sea of southern California. The New River drains a major agricultural valley in Mexico and already contains high concentrations of salts and pesticides before reaching the Mexican border town of Mexicali. At Mexicali, industrial chemicals, slaughterhouse wastes, and municipal sewage are dumped into the river.<sup>46</sup> Upon entering the United States, the highly polluted river poses a severe health hazard to U.S. communities located along its lower course and adversely impacts the recreational and commercial value of the Salton Sea area.<sup>47</sup>

The major factor in the New River's pollution is Mexicali's inadequate sewage collection and treatment system.<sup>48</sup> Mexicali's population has increased some 1300% in the last thirty-five years.<sup>49</sup> As a result, its sewage treatment facility, first completed in the mid-1970's, is overloaded and frequently inoperable.<sup>50</sup> Even when operating cor-

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45. International Boundary & Water Commission, United States & Mexico, Minute 264, Recommendations for Solution of the New River Border Sanitation Problem at Calexico, California-Mexicali, Baja California Norte, Ciudad Juárez, Chihuahua (Aug. 26, 1980) [hereinafter cited as Minute 264]. For an analysis of Minute 264, see *infra* Section III(B)(2)(c).

46. EPA Briefing Paper, *supra* note 35. See also Jamail & Ullery, *supra* note 5, at 21-27.

47. EPA Briefing Paper, *supra* note 35. The New River flows through the U.S. cities of Calexico, El Centro, Imperial, Brawley, and Calipatria, and into the Salton Sea, where the water is used for recreational and irrigational purposes. N.Y. Times, Nov. 20, 1978, at A19, cols. 1-4. One California water official wrote in a letter to President Carter, "At the point it crosses the border, the New River is probably the worst example of pollution from domestic sewage in the United States." Jamail & Ullery, *supra* note 5, at 26. The Executive Officer of the California Water Resources Control Board stated that "there is human waste, solids, evidence of industrial pollution and even dead dogs and old tires floating across the boundary at times." *Id.* at 25. U.S. officials have had to post signs warning of contaminated water along many stretches of the New River. Utton, *supra* note 7, at 1103. See also Washington Post, Dec. 11, 1978, at A3, cols. 1-4.

48. J. Friedkin, U.S. Comm'r, International Boundary and Water Commission, *Statement to California Assembly Select Committee on International Water Treatment and Reclamation at Informational Hearing on New River Sanitation Problem* (May 9, 1984) [hereinafter cited as IBWC *New River Statement*].

49. See Jamail & Ullery, *supra* note 5, at 21. In 1950, Mexicali's population was about 40,000. *Id.* In 1984, the population had grown to 780,000. IBWC *New River Statement*, *supra* note 48, at 1.

50. Earthquakes, hurricanes, sewage overloads, and lack of maintenance cause chronic breakdowns of the Mexicali treatment system, resulting in prolonged raw sewage discharges directly into the New River. IBWC *New River Statement*, *supra* note 48, at 3.

rectly, half of the city's population is not connected to the system.<sup>51</sup>

The New River problem is not new or unpublicized. Local, state, and federal officials of both countries have monitored, studied, and discussed the situation for over thirty years with little progress towards a permanent solution.<sup>52</sup> Recent efforts to control the river's pollution through binational cooperation are analyzed below.<sup>53</sup>

The United States has consistently demanded that Mexico unilaterally remedy the New River problem.<sup>54</sup> While the Mexican government has never denied its responsibility for the situation, Mexico and Mexicali insist that they are addressing the problem as effectively as possible given their limited financial resources. Mexico does not place a high priority on the New River's quality, arguing that the river is not used for any agricultural, municipal, or industrial purpose between the border and the Salton Sea. Mexico also downplays the aesthetic and recreational concerns of the United States, pointing out that there is no physical damage to U.S. property.<sup>55</sup>

#### E. AIR POLLUTION

In contrast to the high level of international concern surrounding water sanitation problems, air quality deterioration has received little attention. The two nations do not perceive border air pollution as a critical issue,<sup>56</sup> primarily because no significant problem exists along most of the border. Air pollution is largely concentrated in the few urban areas which have developed substantial industry. Most of the existing sources of industrial air pollution are older factories located on the U.S. side of the border.<sup>57</sup>

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51. *Id.* at 1. About 40% of the population uses septic tanks or privies, often located directly on the banks of the New River. *Id.* at 2.

52. For a detailed account of unsuccessful past efforts to resolve the controversy, see Jamail & Ullery, *supra* note 5, at 21-27. Despite continual political pressure from California residents and a successful media campaign launched by local officials in 1978, which brought the New River problem to the attention of both national governments, the IBWC is still negotiating a resolution of the problem. *Id.* at 27.

53. See *infra* notes 190-96 and accompanying text.

54. The United States Commissioner of the IBWC recently confirmed the U.S. position on the New River in a public statement, emphasizing, "It is the view of the United States Section that since Mexico is creating the New River sanitation problem, Mexico must solve that problem." IBWC *New River Statement*, *supra* note 48, at 8.

55. Jamail & Ullery, *supra* note 5, at 27.

56. See Bath, *Alternative Cooperative Arrangements for Managing Air Resources Along the Border*, 18 NAT. RES. J. 181 (1978). Professor Bath does not believe that major binational cooperative efforts to solve air pollution will occur in the near future. *Id.* at 197.

57. See Busch, *supra* note 3, at 344, 354. No major centers of heavy industry are located at the border. Existing industry is relatively clean, composed primarily of light manufacturing and assembly of consumer goods. See Berrueto, *Economic Factors and Considerations*, in VIEWS ACROSS THE BORDER 399, 402 (S. Ross ed. 1978); Bath, *U.S.-Mexican Experience in Managing Transboundary Air Resources: Problems, Prospects, and Recommendations for the Future*, 22 NAT. RES. J. 1147, 1148 (1982).

### 1. *The El Paso-Ciudad Juárez Pollution Problem*

Air pollution has reached critical proportions in one border location. The twin cities of El Paso, Texas, and Ciudad Juárez, Mexico, share a common airspace which is highly polluted.<sup>58</sup> Presently, El Paso exceeds U.S. federal clean air standards, and air quality continues to deteriorate unchecked. Juárez has an even worse pollution problem that is aggravated by its growing population and urban development.<sup>59</sup> Because each nation blames the other for the problem, the border serves as a "convenient excuse for inaction."<sup>60</sup>

The three major sources of air pollution are industrial discharges, automobile emissions, and open-air burning of garbage and farmlands.<sup>61</sup> While industrial emissions emanate from both sides of the border, it is estimated that the United States is responsible for 85% of the area's industrial-source contamination.<sup>62</sup> Both communities contribute to the high level of automobile fumes caused by transborder traffic, long delays at customs, lack of mass transportation systems, and Mexico's sale of low-priced leaded fuel.<sup>63</sup> Finally, while the Mexican community is primarily responsible for open-air burning, local officials have little control over this source of pollution because it is characteristic of the low standard of living and economic development in the region.<sup>64</sup>

Both nations place a low priority on protecting the border's air resources. Although Mexico has strong environmental regulations for

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Major Mexican industrial sources of air pollution within 100 miles of the border, however, include the iron and steel producers of Monterrey, Nuevo León, and the copper smelter in Cananea, Sonora. Busch, *supra* note 3, at 344. Mexico will soon complete another copper smelter in Nacozari, Sonora, while in the United States, a copper smelter located at Douglas, Arizona, is currently the major source of sulfur oxide emissions at the border. All three copper smelter plants refuse to install pollution control devices because of economic hardship in the copper industry. EPA Briefing Paper, *supra* note 35. Finally, Mexico's plans to build major petro-chemical complexes at the northern border will contribute to already high levels of carbon monoxide and hydrocarbons. See Applegate, *Transboundary Air Quality: Problems and Prospects from El Paso to Brownsville*, 22 NAT. RES. J. 1133, 1137 (1982).

58. See EPA Briefing Paper, *supra* note 35. In his survey of the El Paso-Ciudad Juárez air pollution crisis, Professor Bath points out that because the region is one of the few areas of the world where a developed and developing nation meet in an urban setting, the crisis represents "the global conflict between developed and developing countries." Bath, *supra* note 57, at 1147.

59. Bath, *supra* note 57, at 1152.

60. *Id.* at 1163. The U.S. Environmental Protection Agency has actually excused El Paso from compliance with federal standards because of the international setting, blaming emissions from Ciudad Juárez for El Paso's air quality failures. Bath, *supra* note 56, at 187.

61. EPA Briefing Paper, *supra* note 35.

62. *Id.*

63. *Id.*

64. *Id.*

air pollutants similar to those of the United States,<sup>65</sup> Mexico fails to enforce its air quality objectives, especially at the border.<sup>66</sup> Mexico believes regulation of air quality will hamper industrial development.<sup>67</sup>

The United States' air pollution control policy at the border is also inadequate. Lack of cooperation between federal, state, and local officials, budgetary constraints, and unrealistic attainment goals have weakened the effectiveness of strong federal air quality regulations.<sup>68</sup> The International Boundary and Water Commission, the only binational agency with experience in managing transboundary resources, is reluctant to involve itself in the politically controversial air pollution problem.<sup>69</sup> As a result, little has been accomplished to solve trans-frontier air pollution.<sup>70</sup>

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65. See Juergensmeyer & Blizzard, *Legal Aspects of Environmental Control in Mexico: An Analysis of Mexico's New Environmental Law*, 12 NAT. RES. J. 580-95 (1972). In 1972, Mexico passed a stringent and comprehensive environmental law which included federal emission standards for air pollutants modelled closely on U.S. standards. Bath, *supra* note 57, at 1157. For a brief sketch of Mexico's environmental laws and institutions, see *infra* Section II(B)(1).

66. Bath, *supra* note 57, at 1147, 1164. Ciudad Juárez's location on the border actually hinders solution of its air pollution problems because the strongly centralized Mexican government, located in Mexico City, often ignores or is unaware of border problems. Applegate, *supra* note 6, at 220. Professor Applegate advocates that both federal governments allow state and local leaders to cooperate informally and pragmatically to solve border issues. *Id.* at 219-27.

67. Bath, *supra* note 57, at 1164. Mexico's concern with full employment, economic development, and industrialization takes precedence over air pollution abatement because of the nation's limited financial resources. For example, Mexico cannot even afford the instruments required to measure air pollution. Bath, *supra* note 56, at 187-88. For a discussion of Mexico's national priorities, see *infra* notes 74-80 and accompanying text.

68. See Bath, *supra* note 57, at 1153-56. A major weakness of the U.S. Clean Air Act of 1977, 42 U.S.C. §§ 7401-7642 (1982), as applied at the border, is its federal structure. *Id.* at 1153. The Act places primary responsibility for implementation and enforcement of federal standards on state and local governments, some of which lack regulatory initiative. *Id.* at 1154. For example, in order to protect local industry, state officials in Texas consistently ignore EPA mandates by not enforcing federal standards. *Id.* On the federal level, the Reagan administration has severely limited the EPA's regulatory efforts through budget, personnel, and facility reductions. *Id.* at 1156. The current political climate in the United States is not supportive of effective pollution control. Binational efforts to abate air pollution are hindered by the lack of coordination and communication between state, EPA, and State Department officials. *Id.*

69. *Id.* at 1160. This reluctance stems from IBWC's traditional role as a technical agency with expertise in studying and solving surface water-related problems. *Id.* For a discussion of the International Boundary and Water Commission, see *infra* Section III(A)(2).

70. See generally Applegate, *supra* note 6, 219-27. Until now, binational efforts to resolve air pollution problems have been extremely limited. In 1972, the Pan American Health Council established a joint monitoring program in the El Paso-Ciudad Juárez area to identify sources and measure levels of air pollutants. Ross, *supra* note 11, at 370. In 1981, San Diego and the State of Baja, Mexico, formally agreed to cooperate in air quality monitoring and control while still retaining each nation's decision-making autonomy. See Nalven, *A Cooperation Paradox and an 'Airy Tale Along the U.S.-Mexico Border* (mimeograph, San Diego Community Research Assoc. 1981). This agreement represents "a major departure in Mexican federal policy." *Id.* at 20.



## 2. *A Prognosis*

As urbanization and industrialization increase, many other border communities will experience the air quality problems found at El Paso-Ciudad Juárez.<sup>71</sup> Because of the serious effects of air pollution on public health, the nations should strive to prevent further contamination of border air resources. Independent, unilateral pollution control efforts by only one nation are ineffective because air moves freely across the border. If real progress is to occur, the countries must take mutual steps to maintain equal standards on both sides of the border.<sup>72</sup>

## II. POLITICAL AND INSTITUTIONAL OBSTACLES TO EFFECTIVE BINATIONAL MANAGEMENT OF TRANSBOUNDARY POLLUTION

Several factors make binational solutions to these ecological problems extremely difficult. These factors include the differing environmental objectives and domestic legal regimes of the two nations, the lack of coordination between the many agencies dealing with the problems, and the long tradition of mistrust between the nations. These obstacles have led Mexico and the United States to resort to ad hoc resolution of resource issues.

### A. DIFFERING ENVIRONMENTAL PROTECTION PERSPECTIVES

Mexico and the United States do not share common environmental objectives because of their different levels of economic prosperity.<sup>73</sup> Mexico, a developing nation, has a very different perception of its national problems and priorities than does the highly developed and affluent United States. Mexico's environmental problems stem largely from poverty and the lack of economic development, while environmental harm in the United States has resulted from a high level of

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71. For example, the Texas cities of Brownsville, Eagle Pass, San Benito, McAllen, and Progreso all face severe air pollution problems in the near future. See Applegate, *supra* note 57, at 1133-38.

72. See Ross, *supra* note 11, at 370. Professor Bath believes that neither nation is willing to submit management of border air pollution problems to a binational superagency because they do not perceive the problem as critical. Despite doubts about the IBWC's capability to resolve air resource problems, Bath believes that, because of its apolitical nature and past experience with water resource management, the IBWC is the most logical binational body to address such issues. Bath hopes that by linking air and water pollution issues under the IBWC agenda, air resource problems will gain the formal recognition and attention they deserve. See Bath, *supra* note 56, at 187-92; Bath *supra* note 57, at 1165.

73. Applegate, *supra* note 6, at 221. Mexico views U.S. concern with environmental protection as "the most recent fad in a rich country. . . ." Lyon, *supra* note 8, at 333. See also Fano, *The Role of International Agencies*, in *WATER IN A DEVELOPING WORLD* 219, 220 (L. Teclaff & A. Utton eds. 1978).

industrialization and urbanization.<sup>74</sup>

Mexico's foremost concern is to provide its impoverished people with the basic necessities of life. Mexico believes that its problems of poor housing, nutrition, and water quality; unemployment; and poverty can be solved only through rapid economic development.<sup>75</sup> Environmental concern will merit attention only when a sufficient level of economic development is reached at the border.<sup>76</sup> As a result, the Mexican government channels most of its limited financial resources into industrial development.<sup>77</sup> Environmental programs rank at a low priority. Any residual funds available for pollution control are applied to the more severe environmental problems facing Mexico's interior cities.<sup>78</sup> Mexico perceives U.S. concern with providing zero levels of pollution at the border as a threat to the region's continued industrialization.<sup>79</sup>

The United States generally places a much greater emphasis on environmental protection than does Mexico. The objective of the U.S. ecological movement is to improve an already high quality of life and

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74. Ross, *supra* note 11, at 370. Many scholars agree with the 1972 United Nations Conference's assessment that environmental problems of developed countries are "very largely the outcome of a high level of economic development," while those of developing countries are "predominantly problems that reflect poverty and the very lack of development of their society." *Id.* See Report of a Panel of Experts of the United Nations Conference on the Human Environment, *Environment and Development* (the Founet Report) (International Coalition No. 586, 1972) [hereinafter cited as Founet Report]. See also Doud, *International Environmental Development: Perception of Developing and Developed Countries*, in POLLUTION AND INTERNATIONAL BOUNDARIES 41-50 (A. Utton ed. 1973).

75. See Founet Report, *supra* note 74, at 10-11.

76. Bath, *supra* note 57, at 1157-58. Mexico has endorsed the Third World position, adopted at the 1972 Conference on the Human Environment held in Stockholm, accepting pollution as the inevitable price for economic growth. *Id.* This position is based on the perception that there is an inevitable conflict between economic development and pollution control. Many Third World countries agree that "if pollution is part of the development process and higher levels of economic development can only be bought by increased levels of pollution, then so be it." *Id.* at n.35. But see Leonard & Morell, *Emergence of Environmental Concern in Developing Countries: A Political Perspective*, 17 STAN. J. INT'L L. 281-312 (1981), which presents the view that developing nations are giving increased attention to pollution problems, but must overcome significant political and institutional barriers before coherent environmental policies and regulations will be enforced. *Id.*

One striking example of Mexico's lack of concern for pollution is the relocation into Mexico of U.S. plants producing hazardous substances such as asbestos. Mexico is inviting such relocation despite potential health hazards to its workers because of its unemployment problems. Applegate & Bath, *Hazardous and Toxic Substances in United States-Mexico Relations* 19 (paper presented at 2nd Bi-National Conference on Regional Impacts on U.S.-Mexico Relations, Tucson, Ariz., May 25, 1983).

77. Bath, *supra* note 57, at 1157. See *supra* note 67 and accompanying text.

78. Mexico's emphasis is on improving the country's interior. Most of Mexico's pollution control efforts are directed to the severe air pollution problems of Guadalajara, Monterrey, and Mexico City. See Bath, *supra* note 57, at 1157-58. Mexico is reluctant to spend money on pollution abatement projects which benefit the United States or to accept foreign aid from its northern neighbor because of national pride. Jamail & Ullery, *supra* note 5, at 7.

79. See *supra* note 67 and accompanying text.

to increase the level of aesthetic amenities available to its citizens.<sup>80</sup> At the same time, the United States is better able to afford the expensive pollution control technology necessary to reverse the damage that progress has caused.<sup>81</sup>

This general assessment of U.S. environmental fervor, however, is not accurate for many portions of the border. With the exception of southern California, the border region is one of the most impoverished sections of the United States.<sup>82</sup> Because environmental protection is traditionally a concern of higher income groups, the border populations of both nations show relatively little concern for pollution problems. As a result, local officials and national agencies of neither country are under public pressure from border communities to remedy transfrontier pollution.<sup>83</sup>

## B. THE INSTITUTIONAL AND LEGAL STRUCTURE

Mexico and the United States have two of the most comprehensive and stringent municipal systems of anti-pollution law in the world. Mexico's environmental law incorporates many of the same regulatory schemes and concepts of pollution found in U.S. environmental law.<sup>84</sup> Neither nation, however, adequately applies its national environmental laws at the border.<sup>85</sup> Cooperative arrangements or substantial joint efforts are hindered by the multitude of agencies and levels of government responsible for border problems.<sup>86</sup>

### 1. Mexican Law and Institutions

In Mexico, concern for environmental protection first arose in the early 1970's with the passage of the comprehensive Federal Law for

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80. Lyon, *supra* note 8, at 334.

81. The Mexican Director of the Center for Border Studies of the North recently stated that Mexico lacks the resources to throw money at environmental problems the way the United States does: "Things in Mexico cannot be resolved á la Americana. They must be resolved within the resources of Mexico and the priorities of Mexico. The United States wants to resolve third-world problems in a first-world manner; they don't realize the third-world is on their border." N.Y. Times, Mar. 14, 1985, at A2, col. 4.

82. Bath, *supra* note 56, at 187. One study points out that binational relations are often strained by the ironic juxtaposition of economically stagnating U.S. communities and economically growing Mexican cities at the border. Jamail & Ullery, *supra* note 5, at 13.

83. Bath, *supra* note 56, at 187-88. In contrast to most border communities, the southern California public has put great pressure on local, state, and federal officials to resolve water sanitation problems at Tijuana and the New River. See THE ATLANTIC, July, 1984, at 19. See *supra* notes 35 & 52.

84. See Juergensmeyer & Blizzard, *supra* note 65, at 587 & n.17. See also *supra* note 65; *infra* notes 88 & 91.

85. See *infra* note 93; note 106 and accompanying text.

86. Applegate, *supra* note 6, at 219-20. See *infra* notes 107-10 and accompanying text.

the Prevention and Control of Environmental Contamination.<sup>87</sup> This law provides for the prevention and control of all forms of pollutants and polluting activities capable of degrading or altering the environment's natural state.<sup>88</sup> The federal executive is given exclusive power to promulgate pollution regulations and sanctions.<sup>89</sup>

On its face, the Mexican law sets a very high level of environmental protection.<sup>90</sup> The law aims at the virtual elimination of all pollution. Any discharge of wastewaters which "might cause contamination" requires a federal permit.<sup>91</sup> The law also establishes tough emission standards for air pollutants.<sup>92</sup>

Despite the stringency of Mexico's environmental laws, environmental protection is ineffective, especially at the border.<sup>93</sup> Mexico's desire for industrialization has foreclosed expenditure of its limited finances on expensive pollution control equipment and on the training

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87. Mexican Anti-Contamination Law, *Diario Oficial*, Mar. 23, 1971. For a general description and an English translation of the law, see Juergensmeyer & Blizzard, *supra* note 65, at 580-95. See also Acevedo, *Legal Protection of the Environment in Mexico*, 8 CAL. W. INT'L L.J. 22-42 (1978).

In 1982, Mexico passed a new Federal Law for Protection of the Environment. The new law provides stiff fines and criminal sanctions for polluters, and contains provisions covering hazardous substances. Applegate & Bath, *supra* note 76, at 11. It is too soon to assess the impact of the new law on environmental protection in Mexico.

88. Juergensmeyer & Blizzard, *supra* note 65, at 587-88. The Mexican law is comprehensive environmental legislation, covering all types of pollution—air, water, noise, pesticides, and heat. The law defines "pollution" as any alteration of the natural environment. This concept is consistent with U.S. environmental laws because it characterizes pollution as a change in quality rather than in the human use of a resource. The law also contains provisions strikingly similar to the U.S. National Environmental Policy Act, 42 U.S.C. §§ 4321-4370 (1982), requiring government agencies to consider and avoid environmental injury in taking any action. *Id.* at 587-88.

89. *Id.* at 587. This grant of power differs from U.S. environmental law which authorizes the federal government to set pollution standards but allows the states to implement and enforce the standards. Applegate, *supra* note 6, at 220. See *infra* notes 101, 104 and accompanying text. The centralized Mexican system of environmental regulation somewhat simplifies binational cooperation on pollution control because U.S. officials can disregard Mexican state and local governments in negotiations. See Mumme, *supra* note 33, at 520. Conversely, local Mexican officials are confused and often resist initiatives by U.S. state and local governments to negotiate directly with them because this decentralized approach is foreign to Mexican policy-making. See THE ATLANTIC, July 1984, at 19, col. 3.

90. Juergensmeyer & Blizzard, *supra* note 65, at 594. These authors conclude that "Mexico can now boast one of the world's most impressive legal regimes for environmental protection and control for virtually every aspect of the environmental crisis." *Id.*

91. *Effluent Neighbors*, *supra* note 37, at 168. The Mexican law's water quality provisions are similar to the U.S. Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. §§ 1251-1376 (1982), because both prohibit any water pollution discharges and are administered by federal permit. See *infra* note 102 and accompanying text.

92. See *supra* note 65 and accompanying text.

93. See Leonard & Morell, *supra* note 76, at 302-03; Applegate & Bath, *supra* note 76, at 11, 22-23. See also *supra* notes 34-39 and accompanying text (discussing Mexico's failure to protect border water quality); notes 58-67 and accompanying text (discussing Mexico's refusal to uphold clean air standards at the border).

of environmental specialists.<sup>94</sup> Critics blame the bureaucracy of the highly centralized federal government in Mexico City for inefficiency and corruption in administering the laws.<sup>95</sup> Furthermore, the federal government places little emphasis on the problems of a distant border region.<sup>96</sup>

In Mexico, state and local governments have no authority or responsibility for managing their pollution problems.<sup>97</sup> This prevents Mexican border communities from implementing cooperative efforts directly with their U.S. counterparts.

At the federal level, three executive agencies are involved in border environmental affairs. The Secretariat of Urban Development and Ecology (SDUE) has prime responsibility for administering Mexico's environmental law.<sup>98</sup> The Secretariat of Agriculture and Water Resources (SAHR), however, has exclusive power over the management of national water resources.<sup>99</sup> The Ministry of Foreign Relations further complicates the institutional framework because it guides all negotiations for binational cooperation through the proper political and diplomatic channels.<sup>100</sup>

## 2. *U.S. Law and Institutions*

In the decentralized political system of the United States, environmental policy is determined and enforced by institutions at federal, state, and local levels. Primary responsibility for setting air and surface water quality standards lies with the federal government.<sup>101</sup> The Federal Water Pollution Control Amendments of 1972 set an objective of eliminating all pollution discharges into navigable waters.<sup>102</sup> The Clean Air Act also establishes stringent national air emission standards and prohibits any deterioration of existing air quality.<sup>103</sup>

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94. See *supra* note 77 and accompanying text. See also Schramm, *Human-Institutional Factors*, in *WATER IN A DEVELOPING WORLD* 190-93 (L. Teclaff & A. Utton eds. 1978) (discussing the lack of skilled natural resource technicians and managers in Mexico).

95. See Applegate & Bath, *supra* note 76, at 10-12.

96. See *supra* notes 66 & 78 and accompanying text.

97. Juergensmeyer & Blizzard, *supra* note 65, at 587. The new 1982 environmental law appears to give some new but limited responsibility to the Mexican states to initiate pollution control arrangements directly with U.S. state and local governments. See Applegate, *supra* note 6, at 220.

98. Applegate & Bath, *supra* note 76, at 10-11.

99. Mumme, *supra* note 33, at 505, 518. For a description of the administration of water resources in Mexico, see Bath, *supra* note 17, at 18-23.

100. Jamail & Ullery, *supra* note 5, at 10-11.

101. See Clean Air Act, 42 U.S.C. § 7409 (Supp. IV 1980); Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1311 (1976).

102. Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1251(a) (1976).

103. Clean Air Act, 42 U.S.C. § 7409 (Supp. IV 1980). The Act directs the Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS). *Id.* There are two types of NAAQS's. A primary NAAQS is one that the EPA

The individual states administer and enforce the federal pollution standards through permit systems and state implementation plans. The federal Environmental Protection Agency (EPA), however, has the power to preempt state control if a state fails to implement its programs satisfactorily.<sup>104</sup> The EPA, therefore, has ultimate authority for control of air and surface water pollution.

The regulatory framework is further complicated by the federal government's decision to leave responsibility for groundwater management completely in state hands. The border states do not yet have effective groundwater protection laws.<sup>105</sup>

Like Mexico's environmental policy, U.S. environmental policy has failed at the border. First, the federal pollution control laws set impracticable attainment goals and unrealistic timetables for achieving those goals. Second, state and local environmental control agencies have resisted compliance with high federal standards. Finally, the EPA has not effectively implemented or enforced the laws, especially at the border.<sup>106</sup>

Cooperation between the United States and Mexico is hindered further by the many levels of U.S. government responsible for environmental policy at the border. Each state government has its own distinct environmental laws and further delegates local control over

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decides is necessary to protect human health and safety. *Id.* § 7409(b)(1). A secondary NAAQS is one that the EPA deems necessary to protect public welfare. *Id.* § 7602(h).

The Act also contains a section entitled Prevention of Significant Deterioration of Air Quality (PSD). *Id.* § 7471. This section is designed to control emissions in regions that have air quality better than that required by the national ambient air quality standards. *Id.*

104. Under the Clean Air Act, each state must adopt an implementation plan designed to attain the national air quality standards. 42 U.S.C. § 7410 (a)(1) (Supp. IV 1980). The state plans must be approved by the EPA. *Id.* § 7410 (a)(2). If a state fails to enforce its plan, the EPA may enforce it. *Id.* § 7413. If a state fails to submit a plan that meets EPA standards, the Administrator must intercede and prepare a plan for that state. *Id.* § 7410 (c)(1).

The Clean Water Act created a permit system under which discharge permits can be granted by the EPA, 33 U.S.C. § 1342(a)(1) (1976), or by a state with EPA-approved permit programs. *Id.* § 1342(b). The EPA may veto a state permit, *id.* § 1342(d)(2), or withdraw approval of a state permit program, if a state fails to comply with the requirements of the Act. *Id.* § 1342(c). The Act authorizes the states to bring enforcement actions against permit violators and against dischargers without permits. If the state fails to act, however, the EPA must enforce the water quality standards. *Id.* § 1319.

105. *See supra* notes 29-30 and accompanying text.

106. *See supra* note 68 and accompanying text. *See generally* Note, *Federal Water Pollution Laws: A Critical Lack of Enforcement by the EPA*, 20 SAN DIEGO L. REV. 945 (1983). The states, primarily responsible for enforcement of environmental protection laws under the federal system, face budgetary constraints, lack of personnel, and an unfavorable regulatory climate. Applegate & Bath, *supra* note 76, at 23. Furthermore, the border serves as an excuse for not meeting federal standards. Officials allege that they have no control over pollutants discharged from Mexico and entering the United States. *See supra* notes 59-60 and accompanying text.

pollution to county and city governments.<sup>107</sup> State and local entities, however, have no authority to act in international matters, and neither the U.S. State Department nor the International Boundary and Water Commission actively solicit state or local input in binational negotiations.<sup>108</sup>

On the national level, several independent agencies with widely differing objectives affect U.S. policy. The State Department, the Environmental Protection Agency, the Geological Survey, the Bureau of Reclamation, the Bureau of Indian Affairs, the National Forest Service, the Water Resource Council, the Immigration and Naturalization Service, Customs, and the Army Corps of Engineers all play a role in border problems.<sup>109</sup> Many of these agencies have no expertise in or sensitivity to environmental problem-solving at the international level. Because there is no effort to coordinate the actions of these various agencies as they affect the border, environmental policy changes are incremental and often inconsistent.<sup>110</sup>

### 3. *The International Arrangement*

At the international level, the International Boundary and Water Commission is the only institution formally designated to manage U.S.-Mexican border resources.<sup>111</sup> It is "the only institution on the border with a truly regional orientation," and its jurisdiction overlaps with that of the above-mentioned national, regional, and local bodies.<sup>112</sup> The International Boundary and Water Commission, however, has a poor history of incorporating the input of other interested groups in its "tightly closed policy-making system."<sup>113</sup> This traditional weakness delays rational resource protection at the border.

#### C. A TRADITION OF MISTRUST

The third factor hindering binational cooperation of shared border resources is the long tradition of mistrust and ad hoc resolution of

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107. See Utton, *supra* note 7, at 1093-95 (describing the institutional context for water resource management at the border); Bath, *supra* note 57, at 1153-56 (describing the U.S. policy framework for air pollution management at the border); Mumme, *supra* note 33, at 517-21 (describing the institutional context for groundwater management at the border).

108. Jamail & Ullery, *supra* note 5, at 11.

109. *Id.*

110. Applegate, *supra* note 6, at 221-22.

111. *Effluent Neighbors*, *supra* note 37, at 164; Jamail & Ullery, *supra* note 5, at 10. The IBWC enjoys permanent status under the Treaty. *Id.* For a discussion of the Commission's past history and present role in resource management, see *infra* notes 125-52 and accompanying text.

112. Mumme, *supra* note 33, at 516.

113. Jamail & Ullery, *supra* note 5, at 12. In fact, the IBWC has allowed local and state governments and private organizations virtually no input into water management decisions. *Id.* at 17.

resource issues between the nations.<sup>114</sup> The United States has dominated Mexico politically and economically since the mid-19th century.<sup>115</sup> This dominance extended to the control of scarce water resources along the border.<sup>116</sup>

Other contemporary issues which complicate and disrupt U.S.-Mexican relations include illegal immigration, the devaluation of the peso, Mexico's unfavorable trade balance with the United States, drug trafficking, investment of U.S. capital in Mexican industry, and U.S. interest in Mexican energy resources. These urgent and complex controversies often take priority over border pollution problems and interfere with efforts at environmental cooperation.<sup>117</sup>

### III. THE NATURE OF PRIOR BINATIONAL ATTEMPTS TO MANAGE TRANSBOUNDARY POLLUTION PROBLEMS

#### A. THE BASIC FRAMEWORK

##### 1. *The Water Treaty of 1944*

Mexico and the United States long argued over their respective rights to the waters of the major transboundary rivers before reaching agreement in the 1944 Water Utilization Treaty.<sup>118</sup> This major treaty quantified each nation's share of the Tijuana, Rio Grande, and Colorado Rivers.<sup>119</sup> It represented a compromise between each country's

114. *Id.* at 12-17.

115. The loss of one-half of its territory to the United States as a result of the Mexican-American War (1846-48) has engendered a deep hatred in Mexico for its militarily stronger northern neighbor. Past territorial disputes over the international boundary, fishing rights in territorial waters, and Mexico's nationalization of foreign oil companies further injured relations between the countries. See Ross, *supra* note 40, at 1-21.

The tremendous economic disparity between the United States and Mexico further increases the tension between the two countries. Mexico has long been economically dependent upon the United States. *Id.* at 10-12. For example, Mexico sells about two-thirds of its exports and buys about two-thirds of its imports from the United States. In addition, U.S. citizens account for about 85% of the foreign visitation to Mexico, helping to make tourism Mexico's second largest industry and accounting for \$2 billion annually in U.S. dollars. Joyner, *U.S.-Mexican Energy Relations in the 1980's: New Resources Versus Old Dilemmas*, 12 CASE W. RES. J. INT'L L. 485, 499 (1980).

116. See *infra* note 120. See generally POLLUTION AND INTERNATIONAL BOUNDARIES: UNITED STATES-MEXICAN ENVIRONMENTAL PROBLEMS (A. Utton ed. 1973).

117. See Joyner, *supra* note 115, at 499-501; Mumme, *supra* note 33, at 521-22. Mexico's energy resources also give it new negotiating strength in its relations with the United States. This should allow Mexico to obtain more favorable results in pollution conflicts. *Id.*

118. Treaty Relating to the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Feb. 3, 1944, 59 Stat. 1219, T.S. No. 994, 3 U.N.T.S. 313 [hereinafter cited as 1944 Water Treaty]. For an analysis of the history and terms of the Treaty, see Note, *A History and Interpretation of the Water Treaty of 1944*, 12 NAT. RES. J. 600-14 (1972).

119. Utton, *supra* note 15, at 1095. The 1944 Treaty quantified Mexico's share of the Colorado River at 1,500,000 acre feet per year, and allocated the annual waters of the lower



claims of territorial dominance and prior appropriation of these waters.<sup>120</sup> Because Mexico was in an unequal bargaining position, however, the United States was able to dictate the actual terms of the Treaty.<sup>121</sup> Mexico's water allocation was less than it was entitled to under equitable utilization principles, and it received no guarantee of

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Rio Grande about equally between the two countries. *Id.* An earlier 1906 Treaty guaranteed Mexico 50,000 acre feet per year from the upper Rio Grande. Treaty with Mexico Relating to the Rio Grande and Distribution of the Waters Thereof, May 21, 1906, 34 Stat. 2935, T.I.A.S. No. 455 [hereinafter cited as 1906 Water Treaty].

120. *Effluent Neighbors*, *supra* note 37, at 160-65. For years, the United States unilaterally allocated the waters of the Rio Grande and Colorado Rivers to its southwest states, primarily for use in irrigation. In the early 1900's, Mexico objected to large water diversions from the Rio Grande River by U.S. farmers and ranchers in New Mexico and Colorado. Mexico, due to its long territorial settlement in the border area and prior use of the water for irrigation, based its claim to this water on the doctrine of prior appropriation. See McCaffrey, *Trans-boundary Pollution Injuries: Jurisdictional Considerations in Private Litigation Between Canada and the United States*, 3 CAL. W. INT'L L.J. 205-09 (1973).

The United States responded to Mexican demands with the so-called Harmon Doctrine, denying the existence of any rule of international law that prohibited an upstream state (the United States) from diverting water from a downstream state (Mexico), despite harm to the downstream state. 21 OP. ATT'Y GEN. 274, 282 (1895). *Id.* at 206. The United States, according to what it considered accepted principles of international law, denied any liability for damage to Mexican agriculture due to its southwestern states' Rio Grande water diversions. The United States did, however, eventually negotiate an equitable apportionment of the waters of the Rio Grande based on existing uses in the 1906 Water Treaty. *Id.* at 207-08.

The United States nevertheless continued to embrace the Harmon Doctrine and deny Mexico a legitimate share of water in the Colorado River Basin. In the 1920's and 1930's, the southwestern states controlled development of the Colorado Basin and attempted to fix allocations of the Colorado River before Mexico could develop uses in the aftermath of the Mexican Revolution. Finally, in the 1944 Water Treaty, the United States was forced to recognize Mexico's legitimate water demands under the equitable utilization principle. *Effluent Neighbors*, *supra* note 37, at 161. The equitable utilization principle provides that each state within an international drainage basin is entitled to share in the beneficial uses of the waters. Note, *Restoring the Water Quality of the Great Lakes: The Joint Commitment of Canada and the United States*, 4 CAN.-U.S. J. INT'L L. 212 (1981).

121. One historical analyst explains:

The terms of the treaty . . . by their very nature give rise to the suspicion that they are not a close approximation of what Mexico might have been expected to agree to had a genuine compromise taken place. The terms relating to quantity . . . might have been subject to further modification, if Mexico had not been forced to capitulate altogether.

In the matter of water quality . . . it is doubtful Mexico had any say whatever in the final terms of the Treaty . . . [I]nsistence on dealing with that topic would have created such firm resistance on the part of the United States that there would have been no treaty at all, and this was not a possibility Mexico could afford to consider . . . There was quite definitely an inequality in the bargaining positions of the parties, above and beyond the situation of the extreme pressure of the drought which ultimately compelled Mexico to come to agreement on a basis not chosen by it. This inequality was manifested in several ways, not least of which was the location of the United States as the upstream riparian. . . .

Note, *supra* note 118, at 608, 610, 611.

The United States' willingness to negotiate with Mexico probably reflected concern with maintaining harmony in the American hemisphere due to wartime conditions in Europe. The United States also feared that if the controversy was decided by arbitration, Mexico would be awarded larger water allocations under equitable utilization principles. *Effluent Neighbors*, *supra* note 37, at 161-62. See also Jamail & Ullery, *supra* note 5, at 14.

the quality of the water to be delivered by the United States.<sup>122</sup> As a result, the Treaty "created as many problems as it temporarily solved."<sup>123</sup>

The Treaty, however, was the first tentative recognition by the two governments of the importance of border sanitation problems. The Treaty states that the two nations "hereby agree to give preferential attention to the solution of all border sanitation problems."<sup>124</sup>

## 2. *The International Boundary and Water Commission*

The 1944 Water Treaty replaced the old International Boundary Commission, created in 1889 to examine and settle boundary demarcation disputes, with the International Boundary and Water Commission (IBWC).<sup>125</sup> The nations gave the revised IBWC new responsibilities for "the application of the present Treaty, the regulation and exercise of the rights and obligations which the two governments assume thereunder, and the settlement of all disputes to which its observance and execution may give rise. . . ."<sup>126</sup> Specifically, the Treaty authorizes the Commission to plan, build, and manage water works; to enter into further agreements relating to international waters; and to settle disputes between the nations involving Treaty interpretation.<sup>127</sup>

The IBWC is the only international agency with specific authority to address water pollution problems along the border.<sup>128</sup> The Commission's jurisdiction is limited to the boundary sections of the

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122. Note, *supra* 118, at 607-13.

123. A. SPRINGER, *THE INTERNATIONAL LAW OF POLLUTION: PROTECTING THE GLOBAL ENVIRONMENT IN A WORLD OF SOVEREIGN STATES* 154 (1983).

124. 1944 Water Treaty, *supra* note 118, art. 3. The Treaty also established an order of preference for the joint utilization of waters. Domestic and municipal uses were given highest priority. Agriculture and stock-raising were next on the list, followed by electric power, other industrial uses, navigation, and fishing and hunting. *Id.* This priority of uses still governs implicitly all agreements made pursuant to the Treaty.

125. See Mummé, *The Background and Significance of Minute 261 of the International Boundary and Water Commission*, 11 CAL. W. INT'L L.J. 223, 224 (1981). The original Commission was created by the Convention of March 1, 1889, to ascertain the fluvial boundary between the United States and Mexico where the Rio Grande and Colorado Rivers form the international border. Disputes along this frontier were frequent because the two rivers often change their courses, occasionally creating mid-stream tracts of land called "bancos" with contested sovereignty. Note, *The International Joint Commission (United States-Canada) and the International Boundary and Water Commission (United States-Mexico): Potential for Environmental Control Along the Boundaries*, 6 NYU J. INT'L L. & POL. 499, 500-01 (1973) [hereinafter cited as *Potential for Environmental Control*].

126. 1944 Water Treaty, *supra* note 118, art. 2.

127. *Id.*, art. 24. The IBWC's judicial role is extremely limited. The Commission is authorized to act as an arbitral tribunal to settle disputes involving Treaty interpretation only with the permission of both nations. *Id.* The nations have seldom used the IBWC in arbitration, choosing to emphasize the Commission's administrative functions. See *Potential for Environmental Control, supra* note 125, at 511.

128. See *supra* note 111 and accompanying text.

Rio Grande and Colorado Rivers and to works located upon the common boundary. The IBWC also has jurisdiction over works entirely within the territory of one of the nations if the project requires cooperation between the countries for its construction or management.<sup>129</sup>

The IBWC is not a politically independent supranational agency.<sup>130</sup> Rather, it is composed of two national Sections (one from each country), each Section composed of technical engineers and legal advisors. Each Section reports directly to its nation's foreign office for policy guidance.<sup>131</sup>

Since 1944, the IBWC has largely limited its role to the planning and construction of flood control and municipal sewage treatment works.<sup>132</sup> With its staff of engineers, the IBWC has achieved greatest success in the production and supervision of a series of joint waterway management projects.<sup>133</sup> The IBWC has also been effective in the collection and distribution of technical information on the border's hydrologic problems. Because each Section maintains a field office on the border, the IBWC is able to monitor and detect boundary problems on a continual basis. Communication and information exchange between the two Sections is excellent.<sup>134</sup>

### 3. *Limitations of the Treaty and the IBWC*

While the Water Treaty and the IBWC are often acclaimed as major accomplishments in international cooperation, both the Treaty and the agency have severe limitations which reduce their effectiveness.<sup>135</sup> First, the Treaty's language does not adequately provide for binational regulation and control of border pollution problems. The language contains no substantive obligations or principles for water quality protection.<sup>136</sup> The Treaty was written at a time when salinity

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129. Mumme, *supra* note 33, at 510-11.

130. *Id.* at 513. The IBWC's policy-making responsibilities are subject to its member governments' guidance and approval. *Id.* See *infra* notes 149-52 and accompanying text.

131. *Potential for Environmental Control*, *supra* note 125, at 501-02. The U.S. Section is under the authority of the State Department, while the Mexican Section reports to the Ministry of Foreign Relations. Jamail & Ullery, *supra* note 5, at 10.

132. See Mumme, *supra* note 125, at 225-26. Because the IBWC has purposely limited its responsibilities to technical water management projects, one analyst describes the IBWC as nothing more than an "international Army Corps of Engineers." *Effluent Neighbors*, *supra* note 37, at 164.

133. *Potential for Environmental Control*, *supra* note 125, at 504-05. The Commission has completed two major international storage dams, several smaller diversion dams, two international sanitation systems, and several river rectification and flood control programs. *Id.*

134. *Id.* at 506. The IBWC's liaison activity is probably its most important and successful function to date. Mumme, *supra* note 33, at 512.

135. Mumme, *supra* note 125, at 225.

136. Sepulveda, *Mexican-American International Water Quality Problems: Prospects and Perspectives*, 12 NAT. RES. J. 487 (1972). In the 1960's, this shortcoming led to an

was the major water quality problem. Pollution was not a major concern of the two nations in 1944. The Treaty's nebulous provision "giving preferential attention to . . . sanitation problems" is inadequate for the resolution of today's more complex pollution problems.<sup>137</sup>

Second, the IBWC has attributed minor significance to the Treaty's concern with border sanitation. The IBWC has construed narrowly the Treaty's mandate for "solution of all border sanitation problems." The IBWC has limited its sanitation responsibilities to the development of sewage disposal projects,<sup>138</sup> refusing to address the more complex and hazardous problems of industrial discharges, toxic wastes, groundwater mining and contamination, and air pollution. Apparently, the IBWC wishes to avoid political controversy over its jurisdictional authority.<sup>139</sup>

The IBWC also refuses to use its clearly defined Treaty powers to their fullest extent. The Commission has authority to initiate investigations<sup>140</sup> and to make decisions involving the utilization of the international waters. These decisions, referred to as "Minutes," are binding on the nations unless one of the governments objects within thirty days.<sup>141</sup> These informal decision-making powers give the IBWC tremendous discretion to focus both nations' attention on environmen-

international dispute over the quality of the waters of the Colorado River delivered to Mexico by the United States. *Id.* See *infra* notes 166-76 and accompanying text.

137. Mumme, *supra* note 125, at 225.

138. See *supra* notes 132-33 and accompanying text. Except for the agreements on control of salinity in the Colorado and Rio Grande Rivers, the IBWC has never negotiated an agreement on a non-sewage related pollution problem. Mumme, *supra* note 125, at 225 n.12.

139. See Mumme, *supra* note 125, at 226. See also Jamail & Ullery, *supra* note 5, at 17-18. The IBWC is faulted for a "myopic focus on the integrity of the international border" and for a decision-making style based on principles of national sovereignty which makes comprehensive, binational solutions to new transfrontier environmental problems difficult without radical reform of the agency. *Id.* at 18. The same study states, "[I]n fact, a reluctance to innovate is a matter of pride among officials in both sections of the Commission." *Id.* at 17.

140. 1944 Water Treaty, *supra* note 118, art. 24. Section A of article 24 requires the Commission to "initiate and carry on investigations and develop plans for the works which are to be constructed or established in accordance with the provisions of this and other treaties . . ." *Id.*

141. *Id.*, art. 25. Article 25 provides:

Decisions of the Commission shall be recorded in the form of Minutes . . . with copies forwarded to each Government within three days after being signed . . . . If one of the Governments fails to communicate to the Commission within thirty days . . . the Minute . . . shall be considered to be approved by that Government.

The legal significance of a Minute is not clear. In the United States, Minutes have the legal status of an executive agreement, but are not equivalent to a formal treaty. An IBWC Minute, therefore, is always subject to legal challenge as not binding under U.S. or international law. Mumme, *supra* note 33, at 515. For discussion of executive agreements, see *infra* notes 202-05 and accompanying text. An IBWC Minute often is nothing more than a general reactive response to a crisis situation. See *infra* Section III(B)(2).

tal problems and to make recommendations for their solution.<sup>142</sup> The apolitical Commission, however, has denied itself any role in the fashioning of environmental policy, relying on the uncertain initiative of executive levels of government to bring an issue before the Commission. The IBWC consistently avoids political controversy, preferring to concern itself only with data-gathering, acting as a liaison between the two foreign offices, and completing assigned water projects.<sup>143</sup>

Finally, the nations have not granted the IBWC the power or the status of an independent supranational agency. The IBWC's jurisdiction is extremely limited. The IBWC is authorized to protect only *surface waters*<sup>144</sup> at the boundary.<sup>145</sup> It has no jurisdiction over groundwater or air pollution. It cannot regulate sources of pollution distant from the common border. Thus, the IBWC as presently constituted is unable to manage the border region as a single integrated ecosystem.<sup>146</sup>

Although the IBWC has enumerated power to enjoin violations, settle disputes, and make recommendations involving Treaty matters, the Commission lacks enforcement power.<sup>147</sup> The U.S. Section is further restrained by its dependence upon Congressional enabling legislation for funding and implementation of the Section's international Minutes. Congress has maintained a tight reign on the autonomy of the IBWC by allocating funds only to specific technical projects.<sup>148</sup>

Both the United States and Mexico have placed their respective Sections under the direct control of their foreign offices. The IBWC must solicit the political support of both countries' foreign offices before initiating resolution of a border problem.<sup>149</sup> As a result, the IBWC is subject to a slow and cumbersome diplomatic decision-making process.<sup>150</sup> When political conflicts of interest arise, both Mexico and the United States often bypass the Commission, limiting the IBWC's legislative and judicial roles.<sup>151</sup> Neither nation is prepared to give the IBWC independent authority to act in controversial environ-

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142. Mumme, *supra* note 33, at 513. The IBWC's recommendations are seldom rejected by the national governments. *Id.*

143. *Id.* at 513-14.

144. *Id.* at 514.

145. *See supra* note 129 and accompanying text.

146. *See supra* note 139 and accompanying text.

147. Mumme, *supra* note 125, at 225 & n.11.

148. *Id.* at 226-27.

149. Jamail & Ullery, *supra* note 5, at 10. *See supra* notes 130-31 and accompanying text.

150. Jamail & Ullery, *supra* note 5, at 10. *See infra* text accompanying note 177.

151. *See Potential for Environmental Control, supra* note 125, at 514-16. The protracted dispute in the 1960's over the salinity of the waters of the Colorado River delivered to Mexico by the United States is an example of both nations' unwillingness to submit border resource issues to the IBWC for impartial settlement. *See infra* note 170 and accompanying text.

mental matters, traditionally considered to be part of a sovereign's domestic jurisdiction.<sup>152</sup>

## B. THE BASIC PROBLEM: AD HOC DECISION-MAKING

Ad hoc decision-making characterizes environmental relations between Mexico and the United States. The nations manage common environmental problems by reaching temporary accommodations. Because the nations tend to ignore problems as long as possible, their decisions are ad hoc responses to environmental crises. This ad hoc approach is the underlying cause of the increasingly serious pollution conflicts at the border, because it fails to establish binding rules of behavior to guide future management of border pollution problems.<sup>153</sup>

### 1. Consequences of the Ad Hoc Approach

Ad hoc, episodic resolution of pollution problems has several negative consequences. First, ad hoc resolutions are reactions to environmental damage after the fact. Early and ongoing prevention of harm, however, is the key to protection of the environment.<sup>154</sup> Damage to some resources, such as groundwater, may be irreversible.<sup>155</sup> Monetary compensation cannot restore scarce resources. Subsequent restoration of the environment, even if possible, is more expensive than preventative management.<sup>156</sup>

Second, the ad hoc approach precludes predictability in international relations.<sup>157</sup> Nations cannot rely on customary international law to protect their resources from transnational pollution. No specific, generally accepted obligation in international law forbids environmentally harmful activities.<sup>158</sup> Increasingly, however, international organizations, tribunals, and commentators recognize

152. See Mumme, *supra* note 33, at 516, 524. See *supra* text accompanying note 12.

153. Jamail & Ullery, *supra* note 5, at 10, 12-20. See *infra* Section III(B)(2).

154. See Utton, *International Water Quality Law*, *supra* note 11, at 171-72.

155. See *supra* notes 21, 25-27 and accompanying text.

156. See A. KISS, *SURVEY OF CURRENT DEVELOPMENTS IN INTERNATIONAL ENVIRONMENTAL LAW* 14 (1976).

157. See Carroll & Mack, *On Living Together in North America: Canada, the United States and International Environmental Relations*, 12 DEN. J. INT'L L. & POL. 35, 41 (1982).

158. A. KISS, *supra* note 156, at 41. "Under general international law, a state has sovereign control of the land, air, and water resources within its boundaries." A. LEVIN, *PROTECTING THE HUMAN ENVIRONMENT: PROCEDURES AND PRINCIPLES FOR PREVENTING AND RESOLVING INTERNATIONAL CONTROVERSIES* 41 (1977).

If transnational environmental injury causes private damages, a pollution victim may request his own government to intervene by invoking general principles of international liability to obtain compensation from the injury-causing nation. A. KISS, *supra* note 156, at 41. However, nations seldom intervene in such transboundary environmental cases. *Id.* at 40.

state responsibility to control transboundary pollution.<sup>159</sup> Under this general obligation, the injured nation must prove material damage by clear and convincing evidence to establish a polluting nation's liability in an international claim.<sup>160</sup> This is a heavy burden, however, because proving causation, identifying polluting sources, and quantifying damages is difficult.<sup>161</sup> Even if liability is established, no mechanism exists to enforce a judgment against a recalcitrant state.<sup>162</sup> Under present law, the threat of international liability does not deter polluting activities.<sup>163</sup>

Binational agreements must establish the obligations and standards of conduct which international law fails to provide. Because transborder pollution problems are recurrent, the resolution of

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159. A. LEVIN, *supra* note 158, at 40. International tribunals first acknowledged the principle of international liability for environmental injury in three relatively early decisions: Corfu Channel Case (U.K. v. Alb.), 1949 I.C.J. 4 (International Court of Justice found Albania liable to Great Britain for failure to notify British ships about mines placed in Albanian waters), Trail Smelter Case (U.S. v. Can.), III U.N. R. Int'l Arb. Awards 1905 (1949) (Canada liable to United States for damage caused in the state of Washington by Canadian smelter's fumes; Canada required to prevent future damage), and Lake Lanoux Case (Fr. v. Sp.), 62 *Revue Générale de Droit International Public* 79 (1958), *discussed in Judicial Decisions*, 53 AM. J. INT'L L. 156 (1959) (argument by Spain that France's proposed water diversion project definitely would cause pollution of water flowing into Spain states a claim for violation of a treaty between the parties). *See also* A. LEVIN, *supra* note 158, at 40 & nn.164-66.

Principles 21 and 22 of the Stockholm Declaration on the Human Environment later incorporated this general rule of international liability for environmental injury:

Principle 21

States have in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction.

Principle 22

States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.

U.N. Doc. A/Conf.48/14 & Corr.1 (1972), *reprinted in* 11 I.L.M. 1420 (1972).

The Helsinki Rules of 1966, promulgated by the International Law Association, also endorse these principles of transboundary liability as the international law for rivers. Helsinki Rules on the Uses of the Waters of International Rivers, International Law Association (London, Aug. 20, 1966), *reprinted in part in* J. BARROS & D. JOHNSON, *THE INTERNATIONAL LAW OF POLLUTION* 77-80 (1974). The rules hold that a state does not have the right to pollute so as to cause "substantial injury" to another state. *Id.*

160. Handl, *Territorial Sovereignty and the Problem of Transnational Pollution*, 69 AM. J. INT'L L. 50, 75 (1975).

161. A. KISS, *supra* note 156, at 54. Current monitoring technology is often unable to identify individual polluters or their relative contribution to total damage, especially if the pollution is long-distance. It is also difficult, for example, to value the actual damage incurred by pollution of a river. *Id.*

162. Fischer, *Acid Rain, Deploying Private Damage Actions Against Transboundary Polluters*, 19 TRIAL 56, 62 (Apr. 1983).

163. A. KISS, *supra* note 156, at 54-55.

existing disputes is not enough. National interests often change over time, preventing diplomatic resolution of future grievances. Prospective cooperative arrangements providing specific rules and administrative machinery for enforcement of these rules are necessary to prevent chronic environmental disputes.<sup>164</sup>

The third negative consequence of the ad hoc approach is that the lack of agreed upon rules for resolving environmental disputes harms foreign relations. Pollution conflicts worsen diplomatic relations to the point that other political and economic matters are adversely affected.<sup>165</sup>

## 2. *Ad Hoc Responses to Border Pollution Problems*

Three past examples of the ad hoc approach to Mexican-U.S. pollution conflicts illustrate the inadequacy of the ad hoc approach. These disputes were all minor in comparison to the array of environmental issues now facing Mexico and the United States. If the disputes discussed below could not be satisfactorily resolved by ad hoc decision-making, the nations should not expect to use this method to resolve existing and future problems.

### a. Minute 242: ad hoc resolution of the Colorado River salinity crisis

A major shortcoming of the 1944 Water Treaty was its deliberate failure to define the quality of water to be supplied to Mexico by the United States.<sup>166</sup> The United States insisted that its obligation to deliver specific quantities of Colorado River water to Mexico did not imply a good faith obligation not to pollute the waters.<sup>167</sup> An international crisis developed in the early 1960's as the United States' water deliveries began to include highly saline irrigation drainage waters. These contaminated waters caused severe damage to Mexico's agricul-

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164. See A. LEVIN, *supra* note 158, at 15.

165. Carroll & Mack, *supra* note 157, at 41.

166. See Jamail & Ullery, *supra* note 5, at 14-15. At the time of the 1944 Water Treaty negotiations, both Mexico and the United States were aware of the potential for later dispute over the high salinity of Colorado River water delivered to Mexico as agricultural and energy development increased in the United States. Both countries chose to ignore this water quality concern to reach a settlement on the more immediate problem of water quantity. *Id.* at 14. See *supra* note 122 and accompanying text.

167. J.G. LAMMERS, POLLUTION OF INTERNATIONAL WATERCOURSES 95 (1984). Although the 1944 Treaty contained no substantive obligations on pollution, it did state that Mexico was to accept water "from any and all sources." 1944 Water Treaty, *supra* note 118, art. 10. The United States argued that the plain language of the Treaty imposed no affirmative water quality obligations. Mexico responded that a treaty obligation to provide a specific quantity of water necessarily implies a good faith obligation to maintain water quality. J.G. LAMMERS, *supra*, at 95.



tural lands.<sup>168</sup> In retaliation, Mexico began to extract large quantities of groundwater from the border near Yuma, Arizona.<sup>169</sup> The IBWC clearly had jurisdiction and competence to solve this dispute under the Water Treaty. Both nations, however, deemed the situation too politically explosive for impartial mediation by the IBWC.<sup>170</sup>

Finally in 1973, the nations reached agreement, in Minute 242, on a "Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River."<sup>171</sup> In this Minute, the United States recognized its obligation to deliver good quality water to Mexico. In return, Mexico agreed to control its groundwater mining in the Yuma area so that U.S. water supplies would not be damaged.<sup>172</sup>

Minute 242 resolved nearly thirty years of conflict over the interpretation of the 1944 Water Treaty. The nations' decision not to commit themselves to any substantive obligation to control pollution in the original Treaty caused permanent damage to Mexican agricultural lands and still affects diplomatic relations at the border.<sup>173</sup> Mexican officials indicate that their lack of sympathy for current U.S. protests of border pollution is in retaliation for past U.S. refusal to remedy Mexico's salinity crisis.<sup>174</sup>

Minute 242 itself illustrates the ad hoc approach to border conflicts. The Minute responds to only one river's water quality problem. The Minute fails to address the prevention of salinity in the many other transboundary rivers now facing the same problem.<sup>175</sup> And while the Minute is unique in restricting groundwater mining, the nations were content to limit their cooperation to only one border aquifer, already damaged by depletions. Thus, groundwater conflicts along other portions of the border remain unresolved and will cause future international tension and economic waste.<sup>176</sup>

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168. Jamail & Ullery, *supra* note 5, at 14.

169. Mumme, *supra* note 33, at 505-06.

170. *Potential for Environmental Control*, *supra* note 125, at 514-16. Eventual agreement required the intervention and initiative of both nations' Presidents. *Id.* at 517.

171. IBWC Minute No. 242, Aug. 30, 1973, Mexico-United States, 24 U.S.T. 1971, T.I.A.S. No. 7708.

172. Brownell & Eaton, *The Colorado River Salinity Problem with Mexico*, 69 AM. J. INT'L L. 259, 270-71 (1975). This article provides a thorough discussion of the salinity controversy and its resolution.

173. *See supra* notes 42-44.

174. *See* Jamail & Ullery, *supra* note 5, at 15; Boston Globe, Nov. 14, 1983, at 3, col. 4 (Statement of Mexican Consul General).

175. *See supra* notes 40, 43 and accompanying text.

176. *See supra* note 20 and accompanying text. Minute 242 was only intended as a temporary, interim response to groundwater conflicts, "pending the conclusion of a comprehensive agreement on groundwater in the border area." Mumme, *supra* note 33, at 506. Fourteen years later, however, the nations have yet to reach a comprehensive groundwater agreement. *See supra* text accompanying note 28.

b. Minute 261: recognition of the inadequacy of ad hoc solutions

The 1970's brought growing public concern over water and air pollution along the border.<sup>177</sup> Both nations were dissatisfied with the IBWC's slow and piecemeal progress in resolving problems under its limited treaty mandate.<sup>178</sup> As one commentator wrote, "[T]he Commission's recent record for solving water quality and groundwater problems . . . shows it to be hesitant, slow moving, and primarily capable of effecting only ad hoc and temporary solutions that are often too little and too late . . . ."<sup>179</sup>

While both nations recognized that existing institutional mechanisms were inadequate, they also realized that continued cooperative efforts were necessary to solve border problems.<sup>180</sup> Minute 261<sup>181</sup> was the response. Approved in 1979, this Minute corrects several shortcomings of the 1944 Water Treaty. The Minute strengthens the Treaty's mandate to protect boundary water quality; it also gives the IBWC greater powers, responsibilities, and jurisdiction to meet this mandate. The Minute broadens the IBWC's traditional role from merely constructing sewage disposal works to solving any water quality problems "that present a hazard to the health and well-being of the inhabitants of either side of the border or impair the beneficial uses of the waters."<sup>182</sup> The Minute authorizes the IBWC to give "permanent . . . and . . . immediate and priority attention" to existing and future border sanitation problems.<sup>183</sup> The Minute also stresses the preventive role of the IBWC.<sup>184</sup>

With Minute 261, Mexico and the United States acknowledged the IBWC as the predominant agency addressing their international water problems.<sup>185</sup> The Minute gives the IBWC ultimate authority to

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177. Mumme, *supra* note 125, at 223 & n.1 (1981). The problems documented in Section I of this Note first gained public attention in the 1970's.

178. Mumme, *supra* note 125, at 129.

179. Jamail & Ullery, *supra* note 5, at 10.

180. In 1979, President Carter and President Lopez-Portillo signed a Joint Communique directing the IBWC "to make immediate recommendations for faster progress toward a permanent solution to sanitation of waters along the border." White House Joint Communique of Mexican President José Lopez-Portillo and President of the United States, Jimmy Carter, On the Occasion of President Carter's Visit to Mexico 1-6 (Feb. 14-16, 1979).

181. International Boundary & Water Commission, United States & Mexico, Minute No. 261, Recommendations for the Solution of Border Sanitation Problems, El Paso, Texas (Sept. 24, 1979) [hereinafter cited as Minute 261]. The text of Minute 261 is reprinted in Mumme, *supra* note 125, at 233-35.

182. Minute 261, *supra* note 181, § 1. This language empowered the IBWC to respond to the full spectrum of surface water pollution issues: salinity, toxic industrial wastes, agricultural runoff, and municipal sewage. Utton, *supra* note 7, at 1105.

183. Minute 261, *supra* note 181, § 2.

184. *Id.* § 3.

185. Mumme, *supra* note 125, at 230.

determine when a border sanitation problem exists, rather than conditioning IBWC jurisdiction on approval of both governments. The nations appear to grant the IBWC authority to perform its functions with a minimum of domestic interference.<sup>186</sup>

While Minute 261 increases the potential role of the IBWC, it does not establish rules designed to prevent future water quality problems. The IBWC still must react to problems on a case-by-case basis.<sup>187</sup> Minute 261 does not establish any substantive or binding obligations. While instructing the IBWC to negotiate joint agreements on each recognized border conflict, the Minute fails to commit the nations to any specific standards, preferred control strategies, priority of action, or specific timetables. It does not extend the IBWC's authority to address air or groundwater pollution problems at the border.<sup>188</sup> While Minute 261 re-emphasized the need for greater bilateral cooperation, the IBWC is still committed to the ad hoc, incremental solutions of the past. The costs of this pragmatism are continued volatile diplomatic relations and environmental degradation.

c. Minute 264: adoption of specific environmental standards for the New River

The IBWC recently demonstrated some success in establishing specific objectives and standards for the protection of a transboundary river. The pollution of the New River has plagued border relations for over thirty years. Despite protracted IBWC negotiations and public outcry, there has been little progress in abating the severe health hazard existing at the New River.<sup>189</sup> In 1980, however, the IBWC concluded a binational agreement, Minute 264, for a permanent solution to the New River problem.<sup>190</sup>

As a long term goal, Minute 264 provides for the complete elimination of all domestic and industrial wastewaters in the New River at the boundary "through necessary action by Mexico."<sup>191</sup> This provi-

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186. *Id.* at 229; Minute 261, *supra* note 181, § 1.

187. Utton, *supra* note 7, at 1106. The Commission is to involve itself on a case-by-case basis in the "identification of the problem, definition of conditions that require solution, specific quality standards which should be applied, the course of action that should be followed for its solution, and the specific time schedule for the implementation." Minute 261, *supra* note 181, § 4.

188. Mumme, *supra* note 125, at 231.

189. *See supra* Section I(D)(2).

190. *See supra* note 45.

191. Minute 264, *supra* note 45, at 2. In the Minute, Mexico acknowledges its responsibility for causing the New River problem and thus its obligation to fund and operate improvements to the Mexicali sewage treatment system necessary to dispose of all effluent from the New River. Mexico's technical advisors projected that the problems could be solved by 1983 if the Mexican government provided the necessary funding. *Id.* The problem is still unresolved today. *See infra* note 196.

sion represents an important, definitive legal obligation established between the nations. In the short term, Mexico also agreed to undertake certain improvements in the Mexicali sewage treatment system to achieve specified interim water quality standards within definite time frames.<sup>192</sup> The water quality standards are modeled on U.S. water quality<sup>193</sup> standards and represent a harmonization of both nations' environmental protection laws. The standards are also a major step towards the formulation of common international "ecostandards" for the border as a region.<sup>194</sup> Because reliance on the unilateral enforcement of each nation's environmental policies has proved ineffective in the past, joint monitoring and control of pollution through international ecostandards holds greater promise for the solution of border problems.

While Minute 264 is the most progressive water quality management program yet developed by the IBWC, it demonstrates once again the shortcomings of the ad hoc approach to border problems. First, the water quality standards of Minute 264 apply only to the New River. The nations failed to extend these standards prospectively and comprehensively to all border communities, preferring to react to the border's extensive pollution problems on a case-by-case basis. Allowing sanitation problems to reach the critical stage found at the New River is both economically inefficient and harmful to foreign relations.<sup>195</sup>

Second, although the IBWC is responsible for monitoring Mexico's progress under Minute 264, this binational agency lacks authority to enforce the Agreement's standards and goals. The Minute's success depends on the good faith efforts of Mexico to finance its paper commitments. So far, Mexico has failed to uphold its obligations with complete impunity. The New River remains highly polluted.<sup>196</sup>

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192. Minute 264, *supra* note 45, at 3.

193. IBWC *New River Statement*, *supra* note 48, at 4. These water quality standards were developed in cooperation with the California Water Quality Control Board and the EPA. *Id.* This cooperation is in sharp contrast to the IBWC's typical reluctance to accept input from other agencies. See *supra* note 114 and accompanying text.

194. Ecostandards are national standards for environmental protection (for example, air or water quality standards) established and enforced on an international scale. Contini & Sands, *Methods to Expedite Environment Protection: International Ecostandards*, 66 AM. J. INT'L L. 37, 39-40 (1972) (discussing the role of international ecostandards and the machinery for establishing them). See also A. SPRINGER, *supra* note 123, at 89-114.

195. See *supra* notes 156-65 and accompanying text.

196. From early 1982 until April of 1984, Mexico, in violation of its Minute 264 commitments, stopped all work on improvements to the Mexicali sewage system. Although Mexico has recently resumed work, construction is proceeding at a slow pace with no estimate as to when improvements necessary to meet the interim water quality standards will be completed. Mexico has not yet submitted plans for the permanent solution to the Mexicali problem nor secured funding for the project. While Mexico has made significant progress in complying with most of the interim water quality standards, it is unable to meet

#### IV. THE ENVIRONMENTAL COOPERATION AGREEMENT

The Environmental Cooperation Agreement<sup>197</sup> is the latest agreement in the long history of U.S.-Mexican attempts to cooperate on border sanitation and water quality issues. With the Agreement, the nations again acknowledged that the IBWC's ad hoc approach is ineffective in reaching permanent solutions to border environmental problems.<sup>198</sup> The governments formally agreed to strengthen and expand both unilateral and cooperative efforts to address pollution at the border.<sup>199</sup> The Agreement contains both general principles and certain limited substantive obligations. While the Agreement represents the nations' most definitive commitment to control border pollution, it is still too early to determine if the Agreement will lead to action and results.

This Section will analyze the structure and language of the Agreement to reveal its strengths, weaknesses, and potential for success in preventing and resolving transfrontier environmental conflicts. A careful assessment of the Agreement indicates that the nations have not adopted sufficiently defined obligations or institutional mechanisms to escape the ad hoc decision-making process of the past.

##### A. GENERAL OBJECTIVES

Article 1 of the Agreement sets forth three general objectives. First, the Agreement is "to establish the basis for cooperation between the Parties for the protection, improvement and conservation of the environment. . . ." Second, the nations are "to agree on necessary measures to prevent and control pollution. . . ." Finally, the Agreement is "to provide the framework for development of a system of

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safe fecal coliform levels which indicate the presence of untreated human waste in the New River. IBWC *New River Statement*, *supra* note 48, at 3-5.

197. Environmental Cooperation Agreement, Appendix, *infra*. The Agreement went into effect on February 16, 1984, after each nation certified that it had completed domestic approval procedures. Hajost, *U.S.-Mexico Environmental Cooperation: Agreement Between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area*, A.B.A. Quarterly Newsletter of the Standing Committee on Environmental Law 3 (Spring, 1984). The Agreement will remain in force indefinitely unless one of the parties notifies the other, in writing, of its desire to terminate the Agreement. The Agreement terminates six months after such written notification. Environmental Cooperation Agreement, Appendix, *infra*, art. 20.

198. EPA Briefing Paper, *supra* note 35, at 1. See *supra* Section III(B)(2).

199. United States Department of State, *United States and Mexico Agree to Cooperate in the Solution of Environmental Problems in the Border Area*, Press Release No. 313 (Aug. 19, 1983). While the Agreement limits itself to pollution problems at the border, the nations intend to expand its scope at a later time to the improved management of all natural resources (wildlife habitats, agricultural and forest lands), as well as to cooperation on problems outside the border region. *Id.*

notification for emergency situations."<sup>200</sup>

These objectives are not very concrete. They express nothing more than the intent of the two nations to cooperate in the future. While the objectives do indicate both nations' awareness of the need to prevent future injuries to the environment, the objectives impose no substantive obligations on the nations.

## B. THE LEGAL FORM OF THE AGREEMENT

The Environmental Cooperation Agreement is an executive agreement, not a formal treaty.<sup>201</sup> An executive agreement is effected through the action of the President alone; it does not require the approval and support of Congress as does a formal treaty.<sup>202</sup>

The value of an executive agreement is often overrated. An executive agreement lacks the enforceability of a treaty; its success depends on continued political goodwill between national governments.<sup>203</sup> The violation of an executive agreement is much less internationally embarrassing than the violation of a treaty because of the greater publicity generated during lengthy treaty negotiations. A treaty more fully involves and ensures the support of all levels of government.<sup>204</sup> The success of an executive agreement, however, is dependent upon later Congressional support to fulfill executive commitments through funding and implementing legislation. Finally, an executive agreement is often ignored as changes in political leadership and policy occur within the contracting nations.<sup>205</sup>

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200. Environmental Cooperation Agreement, Appendix, *infra*, art. 1.

201. Hajost, *supra* note 197, at 2.

202. See Leary, *International Executive Agreements: A Guide to the Legal Issues and Research Sources*, 72 L. LIBR. J. 1 (1979). Considerable controversy exists over the President's constitutional power to use executive agreements in resolving international disputes. The U.S. Constitution does not specifically provide for the use of executive agreements to direct foreign policy. Nor does federal law stipulate when an executive agreement may be used instead of a treaty. Nevertheless, the use of executive agreements to resolve international disputes is becoming more common, and such agreements surpass treaties in number. *Id.* at 3.

The State Department has established criteria for determining which form an international instrument should take. The Foreign Affairs Manual of the State Department provides that an executive agreement can be used pursuant to existing treaties, or subject to Congressional approval and implementation, or under the President's constitutional power. See 14 M. WHITEMAN, DIGEST OF INTERNATIONAL LAW 195 (1970). The present Agreement was not made pursuant to the 1944 Water Treaty and did not receive formal Congressional approval; rather, it represents an exercise of the President's constitutional powers to conduct foreign relations.

In Mexico, the Agreement has the status of a convention; it was submitted to and ratified by the Mexican Senate on December 29, 1983. Hajost, *supra* note 197, at 2-3.

203. See Carroll & Mack, *supra* note 157, at 45 & n.34.

204. *Id.* at 45-46.

205. *Id.* at 45 & n.35. The Great Lakes Water Quality Agreements of 1972 and 1978, executive agreements between Canada and the United States for the control of trans-boundary water pollution, demonstrate the failure of executive agreements to guarantee the

The Agreement does have more symbolic value than an IBWC Minute. As discussed, IBWC Minutes have failed to provide comprehensive and future-oriented environmental protection at the border.<sup>206</sup> The high level of executive attention given this Agreement reflects the sense of urgency and priority that both nations place on resolution of border pollution problems.<sup>207</sup> The Agreement grants national-level recognition and commitment to pollution issues and may mobilize other levels of government to address these issues substantively.<sup>208</sup> But while the symbolic value of the Agreement is real, concrete action will not necessarily follow.

### C. SCOPE OF THE AGREEMENT

An important aspect of the Agreement is its implicit recognition that the border region is a single ecological unit requiring integrated and coordinated management of all its natural resources. It is the first U.S.-Mexican agreement to address all forms of pollution—air, land, and water.<sup>209</sup> The Agreement provides a broad mandate for action on such new and emerging pollution issues as transport and disposal of hazardous wastes, groundwater contamination, and industrial air pollution.<sup>210</sup>

Overall environmental protection at the border should improve because the agenda for binational cooperation is no longer limited to traditional surface water sanitation issues as under the 1944 Water Treaty and its Minutes. In the past, progress on water sanitation conflicts was slow because Mexico, primarily at fault, was expected to

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commitment and support of later political administrations. The Nixon Administration's impoundment of congressionally appropriated funds and the Reagan Administration's reduction of the EPA's budget have severely reduced the Agreements' effectiveness. *Id.*

206. See *supra* Section III(B)(2).

207. See Hajost, *supra* note 197, at 2-3. A State Department official believes it is significant that President Reagan and President de la Madrid signed the Agreement during a meeting in Mexico. According to customary diplomatic practice, only foreign ministers sign a general agreement of this kind. In the United States, the President usually signs only treaties requiring Senate ratification. *Id.*

208. The history of U.S.-Mexican relations indicates that solutions to the major water problems have occurred only after the direct involvement of both nations' Presidents in the policy-making process. Jamail & Ullery, *supra* note 5, at 10. The Agreement also provides for renewed input from state and local governments in addressing the border's environmental problems. See *infra* notes 270-72 and accompanying text.

209. Environmental Cooperation Agreement, Appendix, *infra*, art. 5. The Agreement is also a notable exception to the majority of international environmental agreements which address only single resources. See, e.g., Agreement on Great Lakes Water Quality, Nov. 22, 1978, United States-Canada, 30 U.S.T. 1383, T.I.A.S. No. 9257; International Convention for the Prevention of Pollution of the Sea by Oil, May 12, 1954, 12 U.S.T. 2989, T.I.A.S. No. 4900; Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, reprinted in 18 I.L.M. 1442 (1979).

210. Hajost, *supra* note 197, at 2.

remedy its problems unilaterally.<sup>211</sup> The Agreement's expansion of cooperation to other environmental issues should promote greater linkage<sup>212</sup> between pollution problems, and more reciprocity between claims and in the allocation of costs and benefits of resource protection.<sup>213</sup> For example, Mexico can demand concessions from the United States on issues Mexico considers important—control of hazardous wastes and river salinity—in return for promises to manage its groundwater pumping and sewage releases. The Agreement's comprehensive scope also allows the nations to undertake conjunctive management of surface and groundwaters, long advocated by border specialists.<sup>214</sup>

The Agreement also expands the geographic scope of future transboundary cooperation. Previously, IBWC Minutes were limited to the boundary sections of the transfrontier rivers.<sup>215</sup> The Agreement, however, defines the border region more broadly as the "area situated 100 kilometers on either side of the inland and maritime boundaries."<sup>216</sup> The Agreement further authorizes the nations to focus on pollution sources outside the border area of one country if the source affects the border area of the other.<sup>217</sup>

#### D. SPECIFIC PROVISIONS

##### 1. *The Fundamental Obligation*

Article 2 contains the Agreement's most significant obligation: "The Parties undertake, to the fullest extent practical, to adopt the appropriate measures to prevent, reduce and eliminate sources of pollution in their respective territory which affect the border area of the other."<sup>218</sup> This is the first explicit acknowledgement by Mexico and the United States of their mutual responsibility to prevent all sources of border pollution. The provision is a binational affirmation of the general principle, now evolving in international law, of state responsibility for environmentally harmful activities.<sup>219</sup> The provision establishes a general legal duty between the two nations to actively pursue unilateral and cooperative efforts to protect the border environment.

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211. See *supra* notes 34-39, 54 and accompanying text.

212. "[L]inkage is the deliberate conditioning, by diplomats, of progress on one issue in return for progress on another (perhaps unrelated) issue." Carroll & Mack, *supra* note 157, at 41 n.26.

213. A. LEVIN, *supra* note 158, at 69.

214. See *supra* note 26.

215. See *supra* note 129 and accompanying text.

216. Environmental Cooperation Agreement, Appendix, *infra*, art. 4.

217. *Id.*, art. 2.

218. *Id.*

219. See *supra* notes 158-59, 164 and accompanying text.



The enforceability and practical effects of this obligation, however, are uncertain. The provision merely provides that the nations shall take some measures to prevent pollution.<sup>220</sup> The article's qualification, "to the fullest extent practical," substantially weakens the stringency of the mutual commitment. The qualification acknowledges that financial, technical, and political considerations will limit the nations' capability to control pollution.<sup>221</sup> As in the past, these factors could delay or preclude resolution of transfrontier pollution problems unless new binational institutions are established with compliance controls and sanctions.

## 2. Implementation Strategies

Article 2 gives each nation complete freedom to choose the methods it will employ to meet their binational responsibility for pollution control.<sup>222</sup> The provision does not commit the nations to any preferred environmental standards, priority of action, dispute settlement procedure, or timetable for action. Thus, article 2 offers no formula for attacking specific problems. This lack of specificity creates a great risk that the Agreement's mandate will be ignored.<sup>223</sup>

Article 6 does suggest some possible forms of cooperation. These include "coordination of national programs; scientific and educational exchanges; environmental monitoring; environmental impact assessment; and periodic exchanges of information and data. . . ."<sup>224</sup> Article 6, however, is entirely permissive; the nations can elect not to implement any of these measures.<sup>225</sup> Notably, no reference is made to the adoption of uniform environmental quality standards for the border. The Agreement seems to regress from the progress made in Minute 264 toward establishing binational ecostandards.<sup>226</sup>

Instead, the Agreement emphasizes the coordination of national policies and unilateral responses to border pollution. Article 5 stipulates that the nations will "coordinate their efforts, in conformity with their own national legislation and existing bilateral agreements. . . ."<sup>227</sup>

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220. See generally J.G. LAMMERS, *supra* note 167, at 100.

221. Hajost, *supra* note 197, at 2.

222. See J.G. LAMMERS, *supra* note 167, at 100. Under this type of provision, "each party is free to decide whether it will enact legislation prohibiting the discharge of pollutants, prescribe technological measures . . . , build installations for the treatment of waste water, provide for economic incentives to limit pollution . . . , eliminate certain specific sources of pollution, or use a combination of these measures." *Id.*

223. See *id.* at 100-01.

224. Environmental Cooperation Agreement, Appendix, *infra*, art. 6.

225. The non-binding nature of article 6 is clear from its wording: the nations are obliged only to "consider and, as appropriate, pursue" the suggested environmental protection measures. *Id.*

226. See *supra* notes 191-94 and accompanying text.

227. Environmental Cooperation Agreement, Appendix, *infra*, art. 5.

In addition, article 18 states that “[a]ctivities under this Agreement shall be subject . . . to the applicable laws and regulations in each country.”<sup>228</sup>

The Agreement’s requirement that pollution control efforts conform to national laws apparently limits binational cooperation to mere coordination of each nation’s unilateral environmental programs.<sup>229</sup> The language of the Agreement does not require the United States and Mexico to harmonize or even consistently apply their own regulations to domestic activities causing extraterritorial pollution. Moreover, because the Agreement does not supersede national legislation, it stifles creative solutions to border pollution problems.<sup>230</sup> The Agreement’s failure to emphasize binational control strategies is a serious shortcoming in light of both nations’ poor history of enforcing their domestic environmental laws at the border.<sup>231</sup>

### 3. *The Annex Procedure*

The Agreement does not provide specific remedies for the control of border pollution. Rather, article 3 requires the nations to adopt specific implementing arrangements through ongoing negotiation of technical annexes to the Agreement.<sup>232</sup> Working groups of experts are to meet as often as the nations consider necessary to prepare these annexes.<sup>233</sup>

The technical annex provision is now a common feature of international environmental agreements.<sup>234</sup> It allows nations to establish a framework for joint action when they are unable to formulate specific transnational rules for environmental protection through diplomatic channels. Experts from both nations fashion environmental standards

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228. *Id.*, art. 18.

229. A minority of commentators argue that environmental cooperation should be limited to setting general inspirational goals and to mere coordination of national standards. These commentators believe that it is impossible to form a consensus on international regulations through diplomatic negotiation and that any international standards which are established will represent the lowest common denominator of protection. It has also been argued that national authorities respond more quickly to new pollution problems than do international bodies. See A. SPRINGER, *supra* note 123, at 102. This Note rejects these arguments.

230. Note, *International Agreements*, 25 HARV. INT’L L.J. 239, 244 & n.38 (1984). For example, the Agreement apparently prevents such innovative approaches to pollution control as pollution charge systems, since such alternatives to traditional regulation are not recognized by either nations’ laws. See generally F. ANDERSON, A. KNEESE, P. REED, R. STEVENSON & S. TAYLOR, ENVIRONMENTAL IMPROVEMENT THROUGH ECONOMIC INCENTIVES 10 (1977).

231. See *supra* notes 93, 106 and accompanying text.

232. Environmental Cooperation Agreement, Appendix, *infra*, art. 3.

233. *Id.*, art. 11.

234. Contini & Sands, *supra* note 194, at 40. See also Sands, *The Creation of Transnational Rules for Environmental Protection*, in TRENDS IN ENVIRONMENTAL POLICY AND LAW 313-17 (M. Bothe ed. 1980).

and institutional arrangements to protect resources on a continual basis in an apolitical atmosphere.<sup>235</sup> Technical annexes also avoid the slow and cumbersome treaty-making process by providing a flexible mechanism for solving rapidly changing environmental issues.<sup>236</sup> With the annex procedure in place, continued cooperation becomes less dependent upon the unreliable initiative of national governments.

The Agreement's annex provision, however, lacks many of the procedural requirements necessary to ensure successful implementation of environmental control measures. For example, the provision does not define the actual form the annexes will take.<sup>237</sup> It does not prescribe what environmental issues will be considered and when. It establishes no procedure for governmental ratification of annexes. The provision also fails to address the legal status of the annexes.<sup>238</sup> Finally, it provides no machinery to ensure compliance with the annexes.<sup>239</sup> These deficiencies significantly weaken the potential effectiveness of the annex arrangement.

While the annex mechanism provides the nations an opportunity to avoid case-by-case resolution of problems, it does not guarantee a more comprehensive and preventive approach. In fact, the Agreement's annex process is very similar to the 1944 Water Treaty's mandate of authority to the IBWC to initiate investigations and make decisions in the form of Minutes as a border sanitation problem arises. As discussed, the Minutes have failed to prevent border conflicts because of their reactive nature, lack of specific obligations, and unenforceability.<sup>240</sup> The Agreement's annex mandate is subject to a similar fate unless the nations are prepared to surrender some of their national sovereignty to a binational environmental regulatory system.

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235. Contini & Sands, *supra* note 194, at 40-41.

236. *Id.* at 38. Standards arrived at through diplomatic negotiation "may well be outdated by the time the agreement enters into force." *Id.*

237. The annexes could establish stringent ecostandards or innovative pollutant discharge licensing procedures, or they could merely authorize scientific studies and monitoring programs.

238. See Contini & Sands, *supra* note 194, at 53-55. The annexes could bind the governments automatically or could be voluntary recommendations without legal consequence.

In most situations, some form of governmental ratification is required to make an annex obligatory, because nations are reluctant to give control of binational environmental relations to technical specialists. The ratification requirement, however, merely "shift[s] the problem of effective regulation from the standard-setting to the standard-acceptance arena." A. SPRINGER, *supra* note 123, at 105.

239. See Contini & Sands, *supra* note 194, at 54. Compliance controls could include inspection by an international organization, mutual supervision by participating nations, or monetary sanctions. *Id.*

240. See *supra* Section III(B)(2).

#### 4. *Prior Notification and Consultation*

The duty to inform and consult a neighboring state when a proposed activity is expected to cause transboundary pollution is slowly gaining acceptance in the international community.<sup>241</sup> This obligation is important because it gives nations an opportunity to assess extraterritorial dangers which threaten them, to explore alternatives to environmentally harmful activities, and to prevent significant transboundary pollution before it occurs.<sup>242</sup> The Agreement adopts this obligation in principle and stresses the importance of resource monitoring, data exchange, notification, and consultation in several of its provisions.<sup>243</sup>

The Agreement requires each party to allow the entry of equipment and personnel into its border region "to undertake the monitoring of polluting activities . . ."; the parties also must consult on the measurement and analysis of pollution sources.<sup>244</sup> In addition, the nations are to share all information obtained from this monitoring.<sup>245</sup>

Article 7 contains a significant binational commitment for protection of the border environment: it requires the nations to "assess, as appropriate, in accordance with their respective national laws, regulations and policies, projects that may have significant impacts on the environment of the border area, so that appropriate measures may be considered to avoid or mitigate adverse environmental effects."<sup>246</sup> This provision is consistent with the environmental policy of the United States, as expressed in the National Environmental Policy Act.<sup>247</sup> Environmental impact assessment is more effective than mere early notification in preventing environmental injury, because it provides an opportunity for quantitative evaluation of a major action and its alternatives before the action is undertaken.<sup>248</sup>

Once again, however, the Agreement fails to define the content of an obligation. The Agreement contains no guidelines on what information, if any, must be given to the affected nation. No indication is given of when, to whom, or in what forum the information must be

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241. See A. SPRINGER, *supra* note 123, at 146-49. Customary international law does not formally recognize a general duty to inform and consult. *Id.*

242. A. LEVIN, *supra* note 158, at 1.

243. Environmental Cooperation Agreement, Appendix, *infra*, arts. 1, 6, 7, 10, 11, 12, 15 & 16.

244. *Id.*, art. 15.

245. *Id.*, art. 16.

246. *Id.*, art. 7.

247. Hajost, *supra* note 197, at 3. The National Environmental Policy Act requires a federal agency to prepare a detailed explanation of the environmental consequences of major federal actions significantly affecting the environment, and to make that report available to other agencies and the public. See 42 U.S.C. §§ 4321-4370a.

248. A. LEVIN, *supra* note 158, at 9-10.

made available.<sup>249</sup> The Agreement also lacks an express obligation to secure the prior consent of the affected nation before undertaking a harmful project.<sup>250</sup> This greatly reduces the value of the duty to inform. Finally, the Agreement is extremely vague regarding what circumstances trigger the duty to provide an environmental assessment. Indefinite terms such as "assess as appropriate" and "projects that may have significant impacts" are subject to each nation's self-serving interpretation and permit breach of the Agreement's obligation without legal consequence. Success depends on both nations' good faith compliance.<sup>251</sup> Past water quality conflicts between the United States and Mexico under the nebulous sanitation provision of the 1944 Water Treaty, however, demonstrate the danger of imprecise transboundary obligations.<sup>252</sup>

### 5. Institutional Implementation

Both nations designated national coordinators to develop and implement programs under the Agreement. The Environmental Protection Agency (EPA) is national coordinator for the United States, while the Secretariat of Urban Development and Ecology (SDUE) is Mexico's federal coordinator.<sup>253</sup> These national environmental agencies are to organize meetings between the nations, make recommendations, and generally coordinate and monitor the Agreement's implementation. The Agreement also provides that these agencies may be given additional responsibilities in later annexes.<sup>254</sup>

The nations must hold at least one annual "high level" meeting, alternatively in the border area of each country, to review progress under the Agreement.<sup>255</sup> According to U.S. State Department officials, these meetings will be held under the direction of each nation's foreign affairs office and are intended to provide overall political guidance to future activities.<sup>256</sup> In addition, the Agreement authorizes meetings of technical experts as often as necessary to implement spe-

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249. See *id.* at 9-10. The nations cannot look to customary international law to define the obligation, because the obligation is an ambiguous principle and not well developed in the few international agreements which adopt it. See A. SPRINGER, *supra* note 123, at 147-48.

250. For discussion of the duty to secure prior consent, see A. SPRINGER, *supra* note 123, at 150-52. This duty is also not generally recognized in international law. *Id.* at 150.

251. See A. LEVIN, *supra* note 158, at 12-13. Levin advocates the establishment of "agreed rules, prior to the emergence of potential sources of friction, that address in relatively precise fashion the procedural and substantive issues that may arise in the implementation of a system of advance information and consultation." *Id.*

252. See *supra* notes 137, 166-74 and accompanying text.

253. Environmental Cooperation Agreement, Appendix, *infra*, art. 8.

254. *Id.*

255. *Id.*, art. 10.

256. Hajost, *supra* note 197, at 3.

cific annexes.<sup>257</sup> This emphasis on frequent contact between lower-level officials with expertise in environmental affairs should promote cooperation between the nations and avoid diplomatic inertia and national bureaucracies.<sup>258</sup> Significantly, the Agreement does not require the approval of the nations' foreign affairs offices before arranging annexes or meetings.

The IBWC's role in the implementation of the Agreement is unclear. Article 12 states that "[n]othing in this Agreement shall prejudice or otherwise affect the functions entrusted to the International Boundary and Water Commission, in accordance with the Water Treaty of 1944."<sup>259</sup> At the same time, the Agreement does not provide any specific role for the IBWC in its meetings or annexes. Apparently, the United States and Mexico have decided to place primary responsibility for border pollution control in the hands of their national environmental agencies.<sup>260</sup> The nations are obviously dissatisfied with the IBWC's lack of progress in solving border problems and its unwillingness to expand its mandate beyond the construction of sewage treatment facilities.<sup>261</sup> The countries also may be conceding implicitly that a major reason for the IBWC's hesitant treatment of water pollution stems from its dependence on the highly political foreign offices.<sup>262</sup>

The impact of the institutional shift toward the environmental agencies is difficult to evaluate. The EPA and SDUE, as independent federal agencies, are not required to solicit approval from foreign offices before acting in environmental matters.<sup>263</sup> Because EPA and SDUE officials are experts in environmental law, they are better equipped to resolve the technical and interrelated resource issues of the border than are IBWC diplomats and waterworks engineers.<sup>264</sup>

The EPA and the SDUE, however, may face the same institutional obstacles as the IBWC. The EPA currently is unable to enforce U.S. domestic laws effectively because of a lack of personnel and fund-

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257. Environmental Cooperation Agreement, Appendix, *infra*, art. 11.

258. See *supra* notes 235-36 and accompanying text.

259. Environmental Cooperation Agreement, Appendix, *infra*, art. 12.

260. The decision to give a greater role to the EPA-SDUE in transborder affairs is first noted in a Memorandum of Understanding between the two agencies, entitled "Agreement for Cooperation on Environmental Programs and Transboundary Problems." The Memorandum, negotiated in 1978, was superseded by this Agreement. Jurisdictional competition between the EPA and the IBWC has been a longstanding problem, focused primarily on the IBWC's refusal to lobby Mexico to adopt water quality standards similar to those employed in the United States. Jamail & Ullery, *supra* note 5, at 11.

261. See *supra* note 198 and accompanying text.

262. See *supra* notes 149-52 and accompanying text.

263. See *supra* notes 98, 109 and accompanying text.

264. See generally A. LEVIN, *supra* note 158, at 14-15. The input and guidance of technical experts is crucial to resolving the wide-ranging scientific and technological issues which environmental conflicts inevitably raise. *Id.* at 15.

ing and an unfavorable regulatory climate.<sup>265</sup> The SDUE, a relatively new agency with no track record, represents a government notorious for its inability to control pollution.<sup>266</sup>

It is also too soon to predict whether the IBWC will be given added responsibilities through annexes. So far, however, meetings convened pursuant to the Agreement have reaffirmed the traditionally narrow role of the IBWC in the collection of data and identification of water pollution sources.<sup>267</sup> Officials of the IBWC also deny any expanded role for the Commission. The U.S. Section states only that the IBWC will continue as technical advisor to the State Department and will assist the EPA in reaching solutions to border problems by providing technical information and advice as requested.<sup>268</sup> Thus, it appears that the IBWC will remain a parochial organization with its primary focus on surface water sanitation problems.

The Agreement has neither strengthened the IBWC's authority to resolve and prevent environmental disputes nor created a more effective transnational agency with authority to enforce environmental policies at the border. Instead, the Agreement designates two domestic agencies, constrained by national politics and priorities, to guide and develop binational cooperation. Once again, the nations have refused to create a supranational regulatory body that might impinge upon their sovereignty.<sup>269</sup>

## 6. *Local Participation*

The Agreement provides for increased participation by local private and public entities in solving border conflicts.<sup>270</sup> Article 9 recommends, but does not require, the involvement of state and local governments in meetings held pursuant to the Agreement. International organizations and private groups may also participate in negotiations if both nations agree to such participation.<sup>271</sup> Article 13 requires each party to inform and consult with its border states in matters covered by the Agreement.<sup>272</sup> The inclusion of borderlanders in the decision-making process should spur negotiations and guarantee the support of local levels of government because the border communities are directly interested in and responsible for environmental

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265. See *supra* note 106 and accompanying text.

266. See *supra* notes 93-96 and accompanying text. See *infra* note 286.

267. Joint Communique, National Coordinators Meeting, San Diego, California and Tijuana, Baja (Mar. 8-9, 1984) [hereinafter cited as Joint Communique].

268. IBWC *New River Statement*, *supra* note 48, at 5.

269. See *supra* note 130 and accompanying text; see also *supra* Section III(B)(2).

270. Hajost, *supra* note 197, at 3.

271. Environmental Cooperation Agreement, Appendix, *infra*, art. 9.

272. *Id.*, art. 13.

problems.<sup>273</sup> Participation by borderlanders could also increase informal cooperation between local entities of both nations, eliminating the need for continual national-level involvement in border problems.<sup>274</sup>

#### E. LIMITATIONS OF THE AGREEMENT

It is important to recognize the serious limitations of the Agreement. First, the nations have committed no funds to implement the Agreement.<sup>275</sup> Each nation must bear the cost of its participation,<sup>276</sup> and activities under the Agreement are "subject to the availability of funds and other resources to each Party."<sup>277</sup> Successful implementation of the Agreement's programs, however, depends on appropriation of necessary funds by each nation's federal government. Inadequate funding has long been the primary obstacle to pollution control at the border. Funds for effective monitoring and control of surface water pollution alone are unavailable in Mexico's current economic crisis.<sup>278</sup> No amount of rhetoric will change this financial reality.

A second deficiency of the Agreement is its failure to define what "pollution" actually means for each border resource. The Agreement does not commit the nations to uphold any specific environmental standards. This omission could become a major source of controversy because of the nations' differing social and economic views of pollution.<sup>279</sup> The nations first must use the annex procedure to define for each resource a particular level of environmental change that, because of the potential harm to human interests, is legally significant.<sup>280</sup> Only after establishing this threshold of binational concern can the nations decide on specific strategies to make the threshold legally enforceable.<sup>281</sup>

273. See A. LEVIN, *supra* note 158, at 14; Hajost, *supra* note 197, at 3.

274. See Applegate, *supra* note 6, at 221-22, who advocates an increased role for local entities in the solution of border problems. Applegate argues that "informal policy-making" is important at the border, because national goals are not necessarily those of borderlanders. Cooperative efforts must be "based on a pragmatic assessment of what is best for the local people." *Id.* at 221.

275. N.Y. Times, Sept. 14, 1983, at A16, col. 1.

276. Environmental Cooperation Agreement, Appendix, *infra*, art. 19.

277. *Id.*, art. 18.

278. See *supra* notes 77, 94, 106 and accompanying text.

279. See *supra* Section II(A).

280. A. SPRINGER, *supra* note 123, at 46. Pollution has no precise meaning in international law arrangements; it is defined in various ways depending upon what is considered unacceptable environmental change. Pollution can be characterized as an alteration of the physical environment; as a certain level of damage to man, his property, or to the environment; as an interference with other uses of the environment; or as waste exceeding the assimilative capacity of the environment. Regardless of which criteria are used, a threshold of significant degradation must be set as an enforceable pollution limit with legal consequences triggered by its violation. *Id.* at 63-84.

281. *Id.* at 78. Various tactics are available to make a pollution threshold enforceable. Nations can completely prohibit the discharge of some substances or regulate discharges to



The Agreement also lacks a specific list of environmental issues to be addressed through annexes as well as a timetable for the resolution of specific problems. Although this omission may allow the nations greater flexibility in negotiating an agenda for treating the various issues, it more likely will lead to political delay, because the nations are not formally committed to any plan or priority of action.

Finally, the Agreement contains no mechanism for the enforcement of its provisions<sup>282</sup> or for the formal settlement of border disputes.<sup>283</sup> It contains only broad recommendations and general pledges to cooperate in the future. The nations are not bound to any substantive obligations or to any rules of behavior. The history of environmental relations between the two countries, however, demonstrates that general principles of fairness and vague treaty obligations are not sufficient to prevent injury to natural resources.<sup>284</sup> Many commentators believe that detailed and binding international regulations are necessary for the rational solution of transfrontier environmental problems.<sup>285</sup> Mexico and the United States must use the Agreement's annex procedure to define transboundary obligations if they are to avoid an ad hoc approach to pollution problems.

#### F. PROGRESS UNDER THE AGREEMENT

Progress under the Environmental Cooperation Agreement has been slow.<sup>286</sup> In March of 1984, high level delegations from both countries met for the first time under the Agreement's annual meeting provision to identify major border problems and to discuss areas of future cooperation. The delegations, headed by EPA and SDUE officials, agreed to establish three technical workgroups on air quality, water quality, and hazardous materials management. These technical workgroups are to review problem areas along the border, develop technical and cost information, and recommend possible corrective measures to be implemented through annexes to the Agreement.<sup>287</sup>

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keep their effects within acceptable limits. Nations can charge polluters for discharges above the threshold or place legal liabilities on polluters to deter excessive discharges. *Id.*

282. Note, *supra* note 230, at 242.

283. See generally A. LEVIN, *supra* note 158, at 21-31. Levin advocates the advance formulation of methods of mediation and arbitration by international organizations for the settlement of environmental disputes when binational negotiations fail. *Id.* at 21.

284. See *supra* notes 137, 166-74 and accompanying text.

285. See Brownlie, *A Survey of International Customary Rules of Environmental Protection*, in INTERNATIONAL ENVIRONMENTAL LAW 1 (L. Teclaff & A. Utton eds. 1974); Contini & Sands, *supra* note 194, at 39; A. KISS, *supra* note 156, at 55. See *supra* note 164 and accompanying text.

286. N.Y. Times, Mar. 14, 1985, at A2, col. 5. Negotiations have been delayed in part because of changes in the political leadership of the SDUE. [Current Report] INT'L ENV'T REP. (BNA) 119 (Apr. 10, 1985).

287. Joint Communique, *supra* note 267.

The three workgroups, composed of technical experts from the EPA and SDUE, also held their first meetings in 1984. The discussions produced no technical annexes or concrete solutions to existing pollution issues. Instead, the meetings allowed each nation's environmental agency to outline its nation's proposals and priorities for the border.<sup>288</sup> The Water Quality Working Group, which includes officials of the IBWC, evaluated data and alternatives for the resolution of sanitation problems at Tijuana-San Diego and at the New River. It also examined Mexico's concern with the alleged dumping by Californian industries of heavy metals which contaminates marine shellfish off the Pacific coast. Notably, the management of groundwater received no publicized attention.<sup>289</sup> The Air Quality Working Group discussed approaches to controlling border pollution caused by both countries' copper smelting industry and by automobile emissions. This Group also agreed to develop emissions inventories for the twin cities' airsheds.<sup>290</sup> Finally, the Hazardous Materials and Waste Management Working Group began to evaluate methods for disposing of toxic wastes and for controlling the illegal transboundary movement and dumping of hazardous materials.<sup>291</sup>

The wide range of issues initially addressed by the workgroups is encouraging because it confirms the comprehensive scope of the Agreement's mandate. It also increases the possibilities for *quid pro quo* bargaining between the nations to solve diverse pollution issues. Although the United States is the main beneficiary of progress on water sanitation, Mexico may gain more from the control of toxic substances, allowing compromise between conflicting national priorities.<sup>292</sup>

Additional progress under the Agreement was made in 1985. First, Mexico agreed to unilaterally complete a domestic sewage collection and treatment system for Tijuana.<sup>293</sup> Second, both nations agreed to place pollution controls on their respective border copper smelters. The Air Quality Working Group will develop and implement the controls and monitoring arrangement, while the EPA and SDUE will ensure compliance with this binational commitment.<sup>294</sup>

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288. See EPA Briefing Paper, *supra* note 35.

289. See *id.*

290. *Id.*

291. *Id.*

292. See *supra* notes 212-14 and accompanying text.

293. [Current Report] INT'L ENV'T REP. (BNA) 261 (Aug. 14, 1985). Mexico is financing this construction through a loan from the Inter-American Development Bank, negotiated under the guidance of the Water Quality Working Group. [Current Report] INT'L ENV'T REP. (BNA) 46 (Feb. 13, 1985).

294. [Current Report] INT'L ENV'T REP. (BNA) 261 (Aug. 14, 1985). The EPA also gave a "firm commitment" to Mexico that it would bring its copper smelter at Douglas,

Finally, the EPA and SDUE signed the Joint Inland Contingency Plan, which provides for future development of a mutual response program for spills of hazardous materials.<sup>295</sup>

These recent developments are neither comprehensive nor particularly innovative solutions to border pollution. The United States and Mexico continue to apply a case-by-case, reactive approach to common problems. The nations rely on exchanges of information, research, consultation, and monitoring to achieve success rather than on specific supranational control measures and enforcement provisions. The developments in the past two years, however, demonstrate the nations' continued commitment to the principles and goals embodied in the 1983 Agreement. The Agreement may still lead to substantial environmental cooperation and improvement at the border as the nations learn to trust each other through preliminary and incremental efforts.

### CONCLUSION

The 1983 Environmental Cooperation Agreement between Mexico and the United States is a response to both nations' growing concern over water and air pollution along their common border. The Agreement represents their general consensus that a concerted bilateral effort is necessary to resolve successfully the border's environmental problems. It also recognizes that existing institutional arrangements for cooperation along the border are inadequate. What impact the Agreement will have on improving the border environment remains to be seen. The Agreement fails to establish any detailed standards or specific remedies for environmental protection. Instead, it establishes a regular consultation procedure between officials of both nations' environmental agencies. Actual implementation of the Agreement's general obligations is to occur through later negotiation of specialized sub-agreements. The success of the Agreement will depend upon these specific implementing arrangements. At present, the Agreement stands merely as a symbol of the nations' renewed commitment to cooperation along the border.

*Mark A. Sinclair*

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Arizona, into compliance with the Clean Air Act "as soon as possible but no later than Jan. 2, 1988." *Id.*

295. *Id.*

## APPENDIX

AGREEMENT BETWEEN THE UNITED STATES OF  
AMERICA AND THE UNITED MEXICAN STATES  
ON COOPERATION FOR THE  
PROTECTION AND  
IMPROVEMENT OF THE ENVIRONMENT IN THE BORDER  
AREA

The United States of America and the United Mexican States,  
RECOGNIZING the importance of a healthful environment to the  
long-term economic and social well-being of present and future gener-  
ations of each country as well as of the global community;

RECALLING that the Declaration of the United Nations Confer-  
ence on the Human Environment, proclaimed in Stockholm in 1972,  
called upon nations to collaborate to resolve environmental problems  
of common concern;

NOTING previous agreements and programs providing for envi-  
ronmental cooperation between the two countries;

BELIEVING that such cooperation is of mutual benefit in coping  
with similar environmental problems in each country;

ACKNOWLEDGING the important work of the International  
Boundary and Water Commission and the contribution of the agree-  
ments concluded between the two countries relating to environmental  
affairs;

REAFFIRMING their political will to further strengthen and  
demonstrate the importance attached by both governments to cooper-  
ation on environmental protection and in furtherance of the principle  
of good neighborliness;

Have agreed as follows:

## ARTICLE 1

The United States of America and the United Mexican States,  
hereinafter referred to as the Parties, agree to cooperate in the field of  
environmental protection in the border area on the basis of equality,  
reciprocity and mutual benefit. The objectives of the present Agree-  
ment are to establish the basis for cooperation between the Parties for  
the protection, improvement and conservation of the environment and  
the problems which affect it, as well as to agree on necessary measures  
to prevent and control pollution in the border area, and to provide the  
framework for development of a system of notification for emergency  
situations. Such objectives shall be pursued without prejudice to the  
cooperation which the Parties may agree to undertake outside the bor-  
der area.

## ARTICLE 2

The Parties undertake, to the fullest extent practical, to adopt the appropriate measures to prevent, reduce and eliminate sources of pollution in their respective territory which affect the border area of the other.

Additionally, the Parties shall cooperate in the solution of the environmental problems of mutual concern in the border area, in accordance with the provisions of this Agreement.

## ARTICLE 3

Pursuant to this Agreement, the Parties may conclude specific arrangements for the solution of common problems in the border area, which may be annexed thereto. Similarly, the Parties may also agree upon annexes to this Agreement on technical matters.

## ARTICLE 4

For the purposes of this Agreement, it shall be understood that the "border area" refers to the area situated 100 kilometers on either side of the inland and maritime boundaries between the Parties.

## ARTICLE 5

The Parties agree to coordinate their efforts, in conformity with their own national legislation and existing bilateral agreements, to address problems of air, land and water pollution in the border area.

## ARTICLE 6

To implement this Agreement, the Parties shall consider and, as appropriate, pursue in a coordinated manner practical, legal, institutional and technical measures for protecting the quality of the environment in the border area. Forms of cooperation may include: coordination of national programs; scientific and educational exchanges; environmental monitoring; environmental impact assessment; and periodic exchanges of information and data on likely sources of pollution in their respective territory which may produce environmentally polluting incidents, as defined in an annex to this Agreement.

## ARTICLE 7

The Parties shall assess, as appropriate, in accordance with their respective national laws, regulations and policies, projects that may have significant impacts on the environment of the border area, so that

appropriate measures may be considered to avoid or mitigate adverse environmental effects.

#### ARTICLE 8

Each Party designates a national coordinator whose principal functions will be to coordinate and monitor implementation of this Agreement, make recommendations to the Parties, and organize the annual meetings referred to in Article 10, and the meetings of the experts referred to in Article 11. Additional responsibilities of the national coordinators may be agreed to in an annex to this Agreement.

In the case of the United States of America the national coordinator shall be the Environmental Protection Agency, and in the case of Mexico it shall be the Secretaria Desarrollo Urbano y Ecologia, through the Subsecretaria de Ecologia.

#### ARTICLE 9

Taking into account the subjects to be examined jointly, the national coordinators may invite, as appropriate, representatives of federal, state and municipal governments to participate in the meetings provided for in this Agreement. By mutual agreement they may also invite representatives of international governmental or non-governmental organizations who may be able to contribute some element of expertise on problems to be solved.

The national coordinators will determine by mutual agreement the form and manner of participation of non-governmental entities.

#### ARTICLE 10

The Parties shall hold at a minimum an annual high level meeting to review the manner in which this Agreement is being implemented. These meetings shall take place alternatively in the border area of Mexico and the United States of America.

The composition of the delegations which represent each Party, both in these annual meetings as well as in the meetings of experts referred to in Article 11, will be communicated to the other Party through diplomatic channels.

#### ARTICLE 11

The Parties may, as they deem necessary, convoke meetings of experts for the purposes of coordinating their national programs referred to in Article 6, and of preparing the drafts of the specific arrangements and technical annexes referred to in Article 3.

These meetings of experts may review technical subjects. The opinions of the experts in such meetings shall be communicated by them to the national coordinators, and will serve to advise the Parties on technical matters.

#### ARTICLE 12

Each Party shall ensure that its national coordinator is informed of activities of its cooperating agencies carried out under this Agreement. Each Party shall also ensure that its national coordinator is informed of the implementation of other agreements concluded between the two governments concerning matters related to this Agreement. The national coordinators of both Parties shall present to the annual meeting a report on the environmental aspects of all joint work conducted under this Agreement and on implementation of other relevant agreements between the Parties, both bilateral and multilateral.

Nothing in this Agreement shall prejudice or otherwise affect the functions entrusted to the International Boundary and Water Commission, in accordance with the Water Treaty of 1944.

#### ARTICLE 13

Each Party shall be responsible for informing its border states and for consulting them in accordance with their respective constitutional systems, in relation to matters covered by this Agreement.

#### ARTICLE 14

Unless otherwise agreed, each Party shall bear the cost of its participation in the implementation of this Agreement, including the expenses of personnel who participate in any activity undertaken on the basis of it.

For the training of personnel, the transfer of equipment and the construction of installations related to the implementation of this Agreement, the Parties may agree on a special modality of financing, taking into account the objectives defined in this Agreement.

#### ARTICLE 15

The Parties shall facilitate the entry of equipment and personnel related to this Agreement, subject to the laws and regulations of the receiving country.

In order to undertake the monitoring of polluting activities in the border area, the Parties shall undertake consultations relating to the measurement and analysis of polluting elements in the border area.

## ARTICLE 16

All technical information obtained through the implementation of this Agreement will be available to both Parties. Such information may be made available to third parties by the mutual agreement of the Parties to this Agreement.

## ARTICLE 17

Nothing in this Agreement shall be construed to prejudice other existing or future agreements concluded between the two Parties, or affect the rights and obligations of the Parties under international agreements to which they are a party.

## ARTICLE 18

Activities under this Agreement shall be subject to the availability of funds and other resources to each Party and to the applicable laws and regulations in each country.

## ARTICLE 19

The present Agreement shall enter into force upon an exchange of Notes stating that each Party has completed its necessary internal procedures.

## ARTICLE 20

The present Agreement shall remain in force indefinitely unless one of the Parties notifies the other, through diplomatic channels, of its desire to denounce it, in which case the Agreement will terminate six months after the date of such written notification. Unless otherwise agreed, such termination shall not affect the validity of any arrangements made under this Agreement.

## ARTICLE 21

This Agreement may be amended by the agreement of the Parties.

## ARTICLE 22

The adoption of the annexes and of the specific arrangements provided for in Article 3, and the amendments thereto, will be effected by an exchange of Notes.

## ARTICLE 23

This Agreement supersedes the exchange of Notes, concluded on June 19, 1978 with the attached Memorandum of Understanding



between the Environmental Protection Agency of the United States and the Subsecretariat for Environmental Improvement of Mexico for Cooperation on Environmental Programs and Transboundary Problems.

DONE, in duplicate, in the city of La Paz, Baja California, Mexico, on the 14th of August of 1983, in the English and Spanish languages, both texts being equally authentic.

FOR THE UNITED STATES  
OF AMERICA:

FOR THE UNITED MEXICAN  
STATES: