Chapter 6

The Border:
A Boundary, Not A Barrier

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Chapter 6

The Border: A Boundary, Not A Barrier

SUMMARY

This chapter deals with immigration from Mexico to the United States and environmental problems along the border. The boundary between the United States and Mexico stretches for 2,000 miles; at most points, people can cross almost as easily as polluted air. It will be easier to improve the environment than to slow immigration; short of establishing a police state along the border, there is no way the United States can stop the flow of migrants. Only socioeconomic development in Mexico that reaches into the lowest classes will slow that flow appreciably.

For many years, large numbers of Mexican workers have been coming to the United States, legally or illegally, in search of higher wages and a better life. If economic growth in Mexico leads to meaningful gains in wages and living standards, some of the pressure to emigrate will abate. But Mexico's income distribution is heavily skewed toward the wealthier classes. Should the benefits of a North American Free Trade Agreement (NAFTA) go to those who are already well off, there might be little if any slowing of emigration. Moreover, a NAFTA could lead to increased emigration in the short-term by creating rising expectations in Mexico that could not be quickly satisfied-or simply by creating new jobs near the border to serve as jumping-off points for migrants.

Improvements in wages and living standards promise to take decades rather than years, given Mexico's rapidly growing population and already high levels of unemployment and underemployment. The Mexican economy would have to grow at rates in the vicinity of 10 percent annually to create enough well-paying jobs to keep people content at home. This is substantially faster than the country was able to achieve even in the relatively prosperous 1950s and 1960s. The United States has little choice but to prepare to absorb and put to work continuing inflows of Mexican immigrants. When people have moved to the United States and want to work, it makes sense to maximize their productive contributions to the U.S. economy.

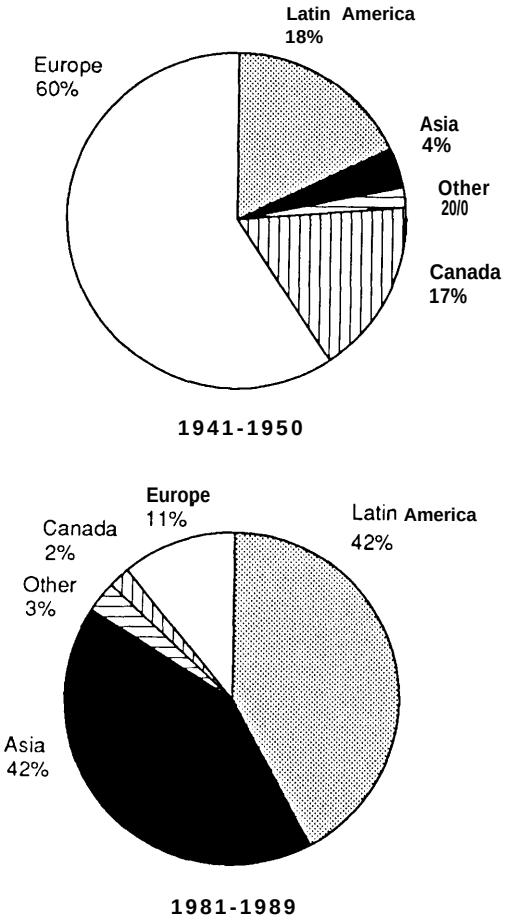
Serious environmental problems exist on both sides of the U.S.-Mexican border. Although the United States is far from blameless, most pollution sources lie in Mexico. Mexican cities, for example, dump some 20 million gallons of raw sewage each day into the Rio Grande--a river the two countries share. Similarly, much of El Paso's polluted air comes from Ciudad Juarez. Because Mexico is poor and the United States is rich, because pollution sources in the 250,000 square mile Border Area affect residents in both countries, and because Mexico's pollution problems are worse in other parts of the country, it seems likely that over the next several decades the United States will have to bear a majority of the border clean-up costs.

Mexico has announced an ambitious program to deal with environmental degradation, both along the border and in its large interior cities. Generally speaking, the country has relatively strict standards on the books (although officials are still writing regulations to implement a comprehensive environmental protection law passed in 1988). As in so many cases in Mexico, the salient questions concern enforcement and financing, rather than the letter of laws and regulations. Today, the country lacks capabilities for enforcement: the government employs fewer than 200 environmental inspectors, and budgets less than 1 percent as much for its environmental agency as does the United States. Public pressure for environmental protection and improvement is just beginning to build.

Stricter controls and enforcement will almost certainly accompany industrial development in Mexico. Countries that can afford to protect their environments and their populations generally do so; there is no reason to expect Mexico to be an exception. If the country was something of a haven for polluters in the past, that will change. But even the United States, which spends a great deal of money on environmental protection, and which has many years experience, has failed to do a very good job of setting priorities and managing cleanup. Still, there is much the United States could do to help Mexico with technical assistance and money, particularly where pollution spills across the border.

Because Mexico is only beginning to attack its environmental problems, and lacks technical expertise, in many cases there is not even baseline

Figure 6-l-Country Sources of U.S. Immigrants



NOTE: Totals may not sum to 100 percent due to rounding.

SOURCE: *Statistical Yearbook of the Immigration and Naturalization* Service (Washington, DC: U.S. Immigration and Naturalization Service, 1990), pp. *3-4.*

information on the severity of existing pollution problems and pollution sources. By providing technical and financial assistance, the United States can help ensure that a NAFTA will serve to raise, not inadvertently lower, Mexico's levels of environmental protection. The greatest need is for a steady, predictable stream of funds for control and cleanup in the border region, so that planners will not be hostage to the vagaries of the budgetary processes in the two countries. The greatest danger is **that** government bodies in both countries might turn away from their commitments to improving the border environment once a NAFTA were implemented.

Table 6-l—Foreign-Born U.S. Residents by Major Sending Country

	Number of U.S. residents (thousands of people and percentage of all foreign-born residents)			
	1980		1990	
Mexico.	2,199	15.6 %	4,447	20.67.
Germany.	849	6.0 %	1,163	5.4 %
Philippines.	501	3.6 %	998	4.6 'lo
Canada.	843	6.0 %	870	4.0 %
United Kingdom...	669	4.87.	765	3.570
Cuba.	608	4.3 %	751	3.570
Korea.	290	2.170	663	3.1 %
Italy.	832	5.9 %	640	3.070
Vietnam.	231	1.6 %	556	2.67.
China.	286	2.0 %	543	2.5 %
Total[b].	14,080	100 %	21,632	10070

[a]The 10 countries listed comprised the 10 largest senders as determined by both the 1980 and 1990 censuses. The census does not ask whether immigrants have legal status, but appears to count one-half to two-thirds of undocumented resident aliens (see Jeffrey S. Passel, "Undocumented Migration," *Annals of the American Academy of Political and Social Science*, vol. 487, 1986, p. 187).

[b]Total represents all foreign-born U.S. residents.

SOURCE: 1980 and 1990 U.S. Census Special Tabulations.

IMMIGRATION

The United States, a nation of immigrants, continues to admit more migrants than any other country. In earlier years, most came from Europe (figure 6-l). Today, they come predominately from Latin America and Asia, most of all from Mexico (table 6-l). Many enter illegally (table 6-2).

Immigrants may fill jobs that would otherwise go to native-born citizens; on the other hand, they may accept work that natives refuse, such as some kinds of agricultural labor, or provision of household services. Whether or not Mexican immigrants compete for jobs with native-born citizens, immigrants

Table 6-2—Legal and Illegal Immigrants

Decade	New immigrants (from all countries) (millions)		Immigrants as percentage of labor force at beginning of decade
	Legal	Illegal[a]	
1970s.	4.5	1.3	6.7%
1980s.	5.9	2.5	7.3%

[a]Estimated.

SOURCE: John M. Abowd and Richard B. Freeman, "Introduction and Summary," *immigration, Trade, and the Labor Market,* John M. Abowd and Richard B. Freeman, eds. (Chicago and London: University of Chicago Press, 1991), table 1, p. 5.

[1]This section draws heavily on 'Trends in Mexican Migration and Economic Development,'' report prepared for OTA under contract No. H3-7 140 by Susan Christopherson and Marie R. Jones, December 1991. Information not otherwise cited comes from this report.

who work contribute directly to the U.S. economy through their labor. They also pay taxes, while absorbing social services-health care, welfare payments, public schools, and so on.[2] Although immigrants with high levels of education, skill, and experience tend to raise overall U.S. human capital levels, most of those entering from Mexico have low levels of education.

Immigrants From Mexico: Legal and Illegal

U.S. laws limit entry by people wishing to live and work here through a complicated system of numerical quotas based on national origin, family relationships, and occupational skills. The Immigration and Naturalization Service registered about 600,000 new residents during each of the first 8 years of the 1980s.[3] The level rose to about 1 million in 1989 and 1.5 million in 1990 as a result of the amnesty provisions of the Immigration Reform and Control Act (IRCA) of 1986, which permitted many undocumented immigrants to qualify for permanent residency (box 6-A). With the amnesty in effect, Mexican immigrants grew from around 10 percent of newly registered immigrants to 37 percent in 1989 and 44 percent in 1990 (table 6-3).

Estimates of undocumented immigration are by nature far less reliable, but the total number of illegal residents is thought to be in the range of 2 to 3 million, increasing at about 200,000 annually. Mexicans make up an estimated two-thirds to three-fourths of the undocumented population, with many of the others from elsewhere in Latin America.[4] As discussed below, there is little evidence that IRCA has reduced illegal entries.

While the stereotypic undocumented Mexican is male, the proportion of single women has increased in recent years, and U.S. Government estimates indicate that women comprise about half the undocumented population. Moreover, IRCA has made it easier for men who entered in earlier years to bring their families here.

Photo credit: Roberto Cordoba for the New York Times

In the Tijuana River levee preparing to climb the metal barricade under the lights; hundreds cross this barrier into the United States every night.

As indicated by table 6-4, most legal entrants from Mexico settle in California, with Texas a distant second. Moreover, most reside in a few large metropolitan areas, especially Los Angeles. Undocumented workers tend to stay closer to the border; indeed, some commute to work in the United States daily from homes in Mexico. More than half a million undocumented aliens may be sojourners who live and work in the United States for a time, save money, then return to Mexico.[5]

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2 Most estimates suggest the net of payments to and claims on government by immigrants is small. Undocumented aliens in Texas, for example, were found to contribute a net surplus to the State treasury, while six city governments, which bore the burdens of health care and educational costs, showed net drains on revenues. Since the State surplus exceeded the deficits incurred by local governments, the overall impact was positive, Sidney Weintraub, "Illegal Immigrants in Texas: Impact on Social Services and Related Considerations," *International Migration Review, vol. 18, 1984,* pp. 733-747. Other studies have found a net loss. See R. W. Gardner and L. F. Bouvier, "The United States, ' *Handbook on International Migration,* W. J. Serow et af., eds. (New York, NY: Greenwood Press, 1990), p. 356.

3 *Statistical Yearbook of th, Immigration and Naturalization Service, 1990* (Washington, DC: U.S. Immigration and Naturalization Service, 1991), p. 52.

4 K.A. Woodrow and J.S. Passel, "Post IRCA Undocumented Immigration to the United States: An Assessment Based on the June 1988 CPS," *Undocumented Migration to the United States. IRCA and the Experience of the 1980s,* F.D. Bean, B. Edmonston, and J.S. Passel, eds. (Washington, DC: Urban Institute Press, 1990), pp. 33-76. Also D.G. Papedemetriou, "South-North Migration in the Western Hemisphere and U.S. Responses, " paper prepared for the Ninth Seminar on Migration of the International Organization for Migration (IOM), Geneva, Dec. 4-6, 1990, p. 11.

5 See Jeffrey S. Passel, " 'Undocumented Migration," *Annals of the American Academy of Political and Social Science,* vol. 487, 1986, pp. 181-200.

Box 6-A—Evolution Of U.S. Immigration Law[1]

1882

High unemployment on the west coast in the late 1870s leads to passage of the Chinese Exclusion Act, barring entry by Chinese laborers. Little prior law or policy had dealt explicitly with immigration.

1906-1907

A "Gentlemen's Agreement" signed with Japan limits entry to family members of Japanese residing in the United States.

1920s

1921 brings the Quota Act, followed by the National Origins Act of 1924. New entrants permitted in proportion to distribution of residents by birth or national origin as determined in the 1920 census, subject to an annual ceiling of 154,000 total immigrants. Northern and Western European nations get 82 percent of the quota Southern and Eastern Europe 16 percent.

1952

The Immigration and Nationality Act (INA) reaffirms quotas based on national origin, with very restrictive annual limits for some countries (e.g., 185 Japanese, 105 Chinese, and 100 persons each from Egypt and New Zealand). INA also establishes a preference system based on skill levels and family ties.

Mid-1960s

Amendments to INA passed at the height of the civil rights movement replace the previous quota system, based on the existing racial, ethnic, and national origin composition of the U.S. population, with three major preference groups:

- Immediate relatives of U.S. citizens, exempt from numerical limits.
- Refugees, subject to numerical limits determined annually through consultation between Congress and the administration.
- Up to 270,000 entrants based on a 6-category preference system emphasizing family reunification, with a ceiling of 20,000 from any one country.[2]

1986

With a great deal of public attention focused on illegal immigration, Congress passes the Immigration Reform and Control Act. IRCA penalizes employers who knowingly hire undocumented workers, while allowing qualifying undocumented aliens already in the country to apply for amnesty and eventual citizenship. To qualify, undocumented aliens must have lived in the United States since January 1, 1982, or have worked harvesting perishable crops at least 90 days during specified periods from 1983 to 1986. About 3.1 million people, three-quarters of them Mexicans, applied for legalization.[3]

1990

In another major revision of the law, the Immigration Act of 1990 (P.L. 101-649) raises the immigration ceiling to 700,000 for fiscal years 1992-94, then sets a cap of 675,000 beginning in fiscal 1995 (480,000 family-sponsored, 140,000 based on employment needs, and 55,000 to increase "diversity").[4]

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1 See R. W. @&xx and L. F. Bouvier, ''The United States,' *Handbook on International Migration,* W. J. Serow et al., eds. (New York, NY: Greenwood Press, 1990), pp. 341-362,

2 The preference system put more weight on family reunification than on labor market qualifications. Professionals and their immediate family (spouses and children) were limited to 10 percent of the total (27,000 visas). Skilled or unskilled workers in short supply in the United States (and their immediate family) fell in another category, also subject to the 10 percent limitation. The remaining four categories included people claiming various kinds of family relationships; for example, unmarried adult children of U.S. citizens and their children, a category allocated 20 percent or 54,000 visas.

3 Sergio Díaz-Briquets and Sidney Weintraub, *Regional and Sectoral Development* in *Mexico as Alternatives to Migration* (Boulder, CO: Westview, 1991), p. xi.

4 *Statistical* yearbook *of* the *Immigration and Naturalization Service, 1990* (Washington, DC: U.S. Immigration and Naturalization Service, 1991), p. A.1-20.

As a percentage of the total, the employment-based preference under the 1990 revisions remains about the same as established in the mid-1960s—close to 20 percent-but the qualifications in terms of education and skill have been raised.

Table 6-3—Legal Immigrants From Top Five Countries

1985		1989		1990	
	Number (thousands) / Percent of total		Number (thousands) / Percent of total		Number (thousands) / Percent of total
Mexico. 61	11%	Mexico. 405	370/0	Mexico 679	44%
Philippines 48	8%	El Salvador. 58	5%	El Salvador 80	5%
South Korea 35	6%	Philippines 57	5%	Philippines 64	4%
Vietnam 32	6%	Vietnam 38	3%	Vietnam 49	3%
India 26	5%	South Korea.... 34	3%	Dominican Republic. . . 42	3%
Total[a]. 570	100%	Total 1,090	100%	Total 1,536	100%

[a]Totals represent a//legal immigrants.

SOURCE: *Statistical Yearbook of the Immigration and Naturalization* **Service,** *7990* **(Washington, DC: U.S. Immigration and Naturalization Service,** *1991),* pp. *52-53.*

Competition for Jobs

Mexicans with schooling and skills have little incentive to emigrate because wage structures in Mexico reward skilled and professional workers disproportionately.[6] It is mostly the less skilled who tend to migrate. Three-quarters of Mexican immigrants have less than a high school education, compared to one-quarter of native-born U.S. citizens; only 2 percent of Mexican immigrants have completed college. Although the differences are slight, undocumented aliens tend to be younger than legal immigrants, less literate in Spanish, and less likely to speak or read English.

Direct competition for jobs with native-born workers takes place primarily in the local labor markets of cities with large immigrant populations. Within these areas, competition centers on low-skilled jobs, as suggested by table 6-5.[7] Native-born men appear to be competing with Mexican immi-

Table 6-4-intended Residence of Legal Immigrants From Mexico Entering in 1990

	Number (thousands)	Percent of all legal Mexican immigrants
Total.	679	1 00%
Top five States.	626	92
California.	420	62
Texas.	131	19
Illinois. ., ...	47	7
Arizona.	18	3
New Mexico.	8	1
Top five metropolitan areas. . .	426	63
Greater Los Angeles[a].	303	45
Chicago.	42	6
Houston, ...	35	5
San Diego.	26	4
Dallas.	19	3

[a]Including Los Angeles/Long Beach, Anaheim/Santa Aria, and Riverside/San Bernadine.

SOURCE: *Statistic/ Yearbook of the /remigration and* **Naturalization** *Service,* **1990 (Washington, DC: U.S. Immigration and Naturalization Service, 1991), pp. 79, 83.**

6 George J. Borjas, "The Economic Consequences of Migration,'' paper presented at Annual Meeting of the American Association for the Advancement of Science, Chicago, Feb. 7, 1992. In countries like Sweden, with relatively flat income distributions, it is skilled workers that have the greatest motivation to migrate

Incentives to migrate from **Mexico to the** United States depend not only on income but on income relative to others in a local area. See Oded Stark and J. Edward Taylor, *Demography*, vol. 26, 1989, pp. 1-14. While immigrants are responding to the wage differential between the two countries, most migrants do not come from the poorest regions in Mexico, and most have jobs in Mexico before they emigrate.

7 Indirect effects can also be significant. For instance, fewer native-born citizens may migrate to Los Angeles if they conclude that immigrants have depressed the job market there. Migration within Mexico can also affect U.S. jobs. For example, migration from *Mexico's* interior to *maquila* plants on the border can cut into U S. jobs and job opportunities directly, as well as provide a stepping stone on a journey whose final destination is Los Angeles or Houston.

Labor force participation rates arc higher for undocumented aliens than for either legal immigrants or natives, They are especially high for illegal immigrant women, 64 percent of whom work outside the home. Leo Chavez, "Settlers and Sojourners: The Case of Mexicans in the United States, " *Human Organization*, vol. *47, 1988,* pp. 5-108.

Occupational distributions appear to be similar for legal and illegal immigrants. More than a third of undocumented Mexican males and some 40 percent of undocumented Mexican females work in manufacturing (but only 10 percent of native-born women), while agriculture and mining together employ only about 15 percent of male and 10 percent of female undocumented immigrants, Increasing numbers of undocumented Mexican workers, both men and women, have also found work in personal services and in restaurants. Sce Passel, ''Undocumented Immigration, ' op. cit., footnote 5.

Many U.S. farmers, especially those growing fruits and vegetables, claim they depend heavily on undocumented workers to fill jobs no onc else will take, ' 'Agricultural Issues in U,S.-Mcxico Economic Integration, ' report prepared for OTA under contract No. 13-0310 by B. Kris Schulthies and Gary W. Williams, April 1992.

Table 6-5-Occupational Profiles for Mexican-Born and Native Workers

	Mexican-born workers					Native workers		
		1988				1988		
	1980, All	Men	Women	All	Percent change, 1980-88 (All)	Men	Women	All
Operators, fabricators, and laborers	44%	35.1 %	37.3%	35.8%	-1 9%	21 .7%	8.7%	15.8%
Service workers	18	15.6	25.0	18.5	5	9.5	18.3	13.5
Precision production, craft, and repair	15	22.5	6.4	17.5	19	20.0	2.3	11.9
Farming, forestry, fisheries,	13	17.6	8.2	14.7	11	5.1	1.3	3.4
Technicians, sales, and administrative support	7	4.7	17.3	8.6	17	19.1	44.8	30.8
Managers and professionals	3	4.5	5.9	4.9	63	24,5	24.6	24.6

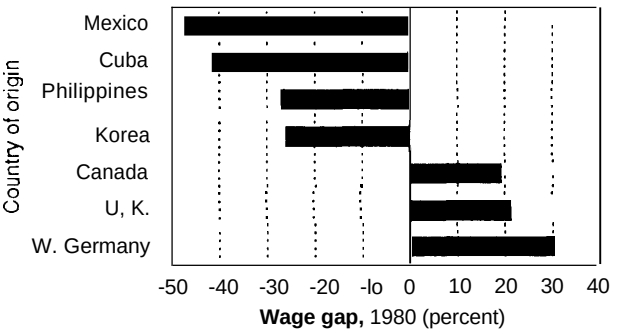
SOURCES: Mexican-Born Workers, 1980- Census *of the Population, 1980* (Washington, DC: Bureau of the Census, 1980, table 255(b); 1988 -*Special Studies Series,* P-23, No. 17 [Washington, DC: Bureau of the Census, 1988). Native Workers, "Current Population Survey," unpublished tables, Bureau of the Census, Washington, DC, June 1988.

grants for manufacturing jobs. The picture is somewhat different for women. Mexican-born women tend to find work in sectors where overall employment is declining, including personal services and nondurable goods industries such as apparel. Because many native-born women have moved into sales and administrative or ''super-clerical' positions in service industries, competition between Mexican-born and native-born women for jobs may be diminishing.

On average, wages for recent immigrants are more than 20 percent below those for native workers, and Mexicans earn lower wages than immigrants from other countries (figure 6-2).[8] It makes little difference whether or not the new immigrants have legal status. In local labor markets, Mexican immigrants depress wages to some degree. (New immigrants are most likely to depress wages for older immigrants, since both old and new are likely to seek similar work.) But competition for jobs in local labor markets is not the only source of impacts on U.S. jobs and job opportunities.

Immigration increases the overall supply of low-skilled workers in the United States directly. Trade (with Mexico and with other countries) has the same effect indirectly if the United States imports goods produced by low-skilled foreign workers while exporting goods produced by higher skilled labor, Under these circumstances, trade will displace low-skilled jobs in the United States, creating an

Figure 6-2-Wage Differentials Between Immigrants and Native-Born U.S. Workers



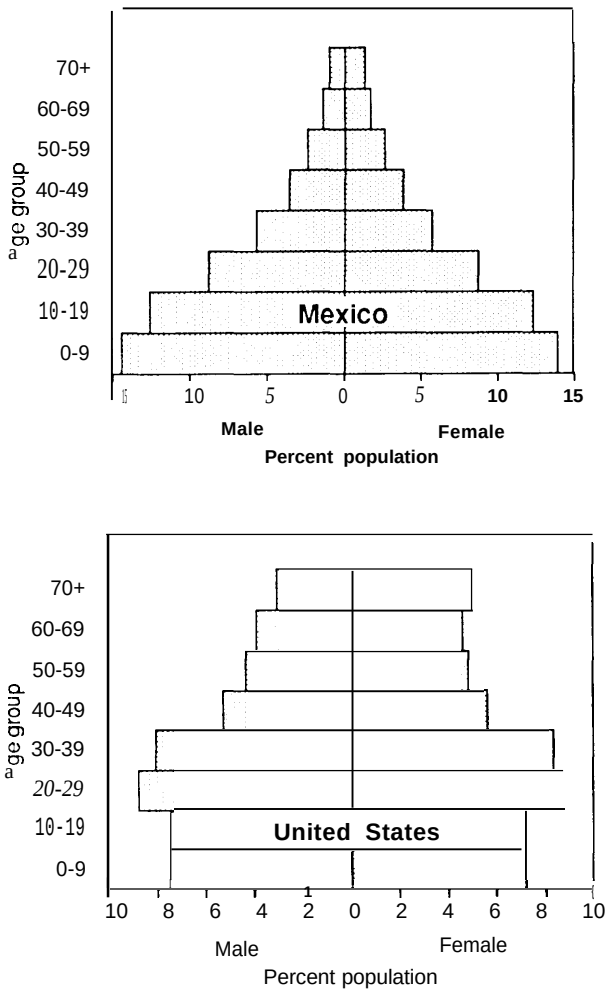
SOURCE: George J. Borjas, *Friends or Strangers: The Impact of Immigrants on* the U.S. *Economy (New* York, NY: Basic Books, 1990), p. 232.

"excess' of low-skilled labor. Both immigration and trade can thus drive down wages for low-skilled U.S. workers. Estimates based on input-output tables suggest that, in 1988, immigration (from all countries) and trade (with all countries) had, together, increased the effective supply of high school dropouts in the United States by 28 percent for men and 31 percent for women.[9] Combining these estimates with reasonable assumptions about the substitutability of dropouts and graduates indicates that trade and immigration flows may explain 30 to 50 percent of the approximately 10-percent decline in the relative weekly wage of high school dropouts between 1980 and 1988 (see ch. 4, figure 4-l). Because Mexico is the largest source of U.S.

[8] The wage gap between immigrants and native workers similar in age and educational attainment was 22 percent in 1980: it has been increasing; immigrants earned 2.6 percent less in 1940, 11 percent less in 1960, and 15 percent less in 1970. One reason is that earlier waves of immigrants from developed countries in Europe were more likely to have skills in high demand in the U.S. labor market. George J. Borjas, ''Immigrants in the U.S. Labor Market: 19080," *American Economic Review, vol. 81,* 1991, pp. 287-291,

[9] George J. Borjas, Richard B. Freeman, and Lawrence F. Katz, "On the Labor Market Effects of Immigration and Trade, Working Paper No. 3761, National Bureau of Economic Research, Cambridge, MA, June 1991. In 1988, immigrant workers increased the supply of high school dropouts by approximately 25 percent, the supply of high school graduates by 6-7 percent, and the supply of college graduates by 10-11 percent,

Figure 6-3-Age Distributions in Mexico and the United States



SOURCE: United Nations.

immigrants, and because Mexican immigrants have lower skills on average than immigrants from elsewhere, immigration from Mexico would probably account for something over half of the effect of all immigration on the relative wages of U.S. high school dropouts.[10] Immigration thus appears to have had significant impacts on employment and wages for U.S. workers, even if those impacts can be estimated only roughly.

Factors Influencing Immigration From Mexico

Migration from Mexico to the United States responds to three major influences:

. income inequalities within Mexico, plus demographic and socioeconomic differences between the two countries;
- migration networks that have matured and become entrenched over the past several decades; and
- U s . immigration policy.

Given the cumulative impacts of these factors, there seems little likelihood that migration will slow appreciably over the next two decades. The United States could not unilaterally stop entry by illegals short of militarizing a 2,000-mile border. There is little the Mexican Government can do to stop migration without dramatically improving living standards for the many millions of poorer Mexicans at the bottom of a highly unequal social pyramid.

Demographic and Socioeconomic Factors

Mexico will have great difficulty creating new jobs for the many people who will enter the labor force in the years ahead. More than half of all Mexicans are under the age of 20, reflecting high birth rates in past years. The population is currently increasing at about 2.3 percent per year, doubling every 30 years or so.[11] The pyramidal age distribution shown in figure 6-3 creates a high degree of momentum for further growth: even if fertility dropped to replacement levels, Mexico's population would continue to increase for several decades as young people entered their reproductive years.

Unless unemployment and underemployment come down, and wages rise, pressures to emigrate could grow rather than diminish.[12] After World War II and

10 Except for 1987, the United States has exported more manufactured goods to Mexico than it has imported in every year since 1983 (ch. 3). The $22.9 billion in U.S. imports from Mexico during 1991 would probably have required more less-skilled labor to produce than the $31.1 billion in exports in that year. Thus trade with Mexico, despite being in substantial surplus, could also have had negative effect on the relative earnings of less skilled U.S. workers.

1 1 *1992 WP Data Sheet* (Washington, DC: Population Reference Bureau, 1992). In contrast, the U.S. population is growing at only 0.8 percent per year (including growth due to immigrants), for a doubling time of 90 years.

12 While relative wages in Mexico and the United States will be a major force in determining future rates of immigration there is much more to socioeconomic development—and to peoples' propensity to migrate in search of a better life--than their money incomes, as discussed in box 3-A in chapter 3.

until about 1980, Mexico's gross domestic product (GDP) grew at about 6 1/2 percent annually, before dropping during the 1980s. If GDP growth averages 3 percent over the period 1985-2000, Mexico can expect some 10 million "excess' workers by the turn of the century; if GDP growth averages 5 percent, the predicted excess would still reach 6 million.[13] It seems highly unlikely that Mexico's economy could expand fast enough to absorb all new labor force entrants: this would take an unprecedented growth rate of more than 10 percent annually.

Because Mexico's future growth will depend heavily on foreign investment, failure to reach a free trade agreement would ensure more immigration to the United States. On the other hand, socioeconomic improvements in Mexico may initially result in an increase in migration to the United States rather than the decrease expected over the long term. The reason is that expectations could well rise faster than economic improvements in Mexico can be realized. [14]

Migration Networks

Flows of immigrants from particular regions in Mexico to particular regions in the United States have become strongly established over several generations. Mexicans crossed the border to work on railroads at the turn of the century, then to work on farms, still later to work in the growing Los Angeles garment industry.

Currently, the two major migrant streams come from the border region and from rural areas and small towns in Mexico's interior. Immigrants from the border region typically shuttle between jobs in U.S. cities and homes in Mexico. Aided by family and fiends, they make repeat trips to the same U.S. city and often the same job. Migrants from the interior are more likely to be undocumented and more likely to end up staying in the United States because of the distance from their home. Having, on average, less education, they generally start lower on the job ladder, but show somewhat more upward mobility than border migrants.[15] The longer migrants from either group stay in the United States, the more likely they are to move into better jobs, bring in family members, and become permanent U.S. residents.

U.S. Immigration Policy

IRCA was intended to slow illegal immigration by requiring employers, for the first time, to verify the legal status of those they hired. But because forged papers are cheap and easily available and because employers have little incentive to closely question those they hire, or to give their papers more than a cursory look (they need not even keep copies on fide), the law has been easy to circumvent.[16] Apprehensions of illegals (the only routinely available indicator of entry) dropped sharply after passage of IRCA in 1986, but rose again to 1.2 million in 1990-the same as in 1983.[17] Not only does it seem impossible for the United States to appreciably slow the flow of undocumented workers, but as Mexico continues to industrialize, more workers will develop skills in demand in the United States, increasing their attractiveness to U.S. employers (for some of whom, undocumented workers are not only cheap, but easier to control, and less likely to complain than legal immigrants or native-born workers),

Pressures to migrate grow with rapid population increases in many parts of the Third World. Even if wealthy nations provided considerable development assistance to their poorer neighbors, these pressures seem bound to increase. It maybe time to rationalize migration on an international level; as a first step, for instance, the United States could initiate discussions aimed at international agreement on the definitions of such migrant categories as political refugees. It would also seem desirable to establish an interna-

13 Saul Trejo Reyes, '*Mexican-American Employment Relations: The Mexican Context,' *U.S.-Mexico Relations: Labor Market Interdependence*, Jorge A. Bustamante, Clark W. Reynolds, and Raúl A. Hinojosa Ojeda, eds. (Stanford, CA: Stanford University Press, 1992), table 6, p. 265. By Reyes's definition, Mexico has about 2 1/2 million excess workers today.

14 *Unauthorized* Migration: *An Economic Development Response*, Report of the Commission for the **Study** Of International Migration and Cooperative Economic Development (Washington, DC: U.S. Government Printing Office, July 1990).

15 In the rural towns of Texas and California, immigrants from the interior find work in agriculture or sawmills, as craftsmen or service workers; in urban areas, they tend to work in construction or service jobs. Richard Jones and William Murray, "Occupational and Spatial Mobility of Temporary Mexican Migrants to the U. S.: A Comparative Analysis, ' *International Migration Review*, vol. 20, 1986, pp. 973-985.

16 Robert L. Bach and Howard Brill, ''Impact of IRCA on the U.S. Labor Market and Economy, ' Final Report to the U.S. Department of Labor, Institute for Research on Multiculturalism and International Labor, State University of New York at Binghamton, April 1991.

17 Borjas, ''The Economic Consequences of Migration, " op. cit., footnote 6.

tional migration policy body, perhaps under the United Nations.

ENVIRONMENTAL ISSUES

Mexico's most serious environmental problems are in the Federal District (Mexico City and vicinity), Guadalajara, and Monterrey, but it is pollution along the border that most affects air and water quality in the United States.[18] NAFTA opponents have argued that an agreement would spur still more rapid and uncontrolled development along the border, with U.S. firms exporting dirty factories to Mexico. Supporters counter that Mexico can improve its environment only if economic growth generates new revenues that can be put toward cleanup and prevention of pollution.

The Scope of the Problem

Some of the driest land in North America is found in the Border Area, although the region also includes forest and irrigated farrnlands.[19] Most of the Border Area is sparsely populated. High salinity of both soil and river water limits food production and human settlements. The total population is about 9 1/2 million, three-quarters of whom live in 14 pairs of sister cities located on each side of the international boundary. Tijuana-San Diego, with nearly 2 million people, and Ciudad Juarez-El Paso with 1 1/2 million, are the two largest city pairs. More people cross the border each day than any other national boundary in the world, with over 200 million entries from Mexico into the United States recorded at 10 crossing stations in 1989 and again in 1990.

Much of the growth on the Mexican side of the border has been recent, paralleling industrial expansion-especially the *maquiladoras,* which have been growing at about 16 percent annually as measured by number of plants and employees. Nearly half of those employed in the Border Area in Mexico work in *maquiladoras,* more than half of which are located in just two cities—Tijuana and Ciudad Juarez.[20] Rapid growth without land use and urban planning has resulted in severe strains on services and infrastructure. Mexican border cities do not have enough drinking water, sewage capacity, housing, or transportation. While San Diego is one of the wealthiest cities in the United States, 40 percent of households across the border in Tijuana have no running water, and 28 percent no electricity.[21]

Environmental problems in the Border Area run the gamut: soil erosion, unmanaged solid and

18 Air pollution in *Mexico City is* believed to *cause* hundreds of deaths each year. *U.S.-Mexico Trade: Information on Environmental Regulations and Enforcement, GAO/NS1AD-91-227* (Washington, DC: U.S. General Accounting Office, May 199 1), p. 3. Mexico City's air pollution comes mostly from cars, trucks, and buses (80 percent), with industry contributing 15 percent. Fecal dust comprises most of the balance, because the city's sewage treatment capacity is too small by a factor of three. N. Gardels and M. B. Snell, ''Asphyxiation by Progress, ' *Columbia Journal of World Business,* vol. XXIV, spring 1989, p. 43.

One set of estimates ranks the relative costs of four classes of environmental problems in Mexico in descending order as follows:

. diarrheal diseases arising from water and solid waste pollution, coupled with lack of sanitation and poisoning of foodstuffs;
• health effects of air pollution in Mexico City;
. groundwater depletion; and
• soil erosion

S. Margulis, *Back-of-the-Envelope Estimates of Environmental Damage Costs in Mexico,* Policy Research Working Paper No. 824 (Washington DC: World Bank, January 1992).

Because OTA's assessment focuses on the potential effects of increased trade with Mexico on U.S. jobs, the discussion of the environment is necessarily limited. A detailed review of the relationships between international trade and environmental protection can be found in U.S. Congress, Office of Technology Assessment *Trade and the Environment: Conflicts and Opportunities, OTA-BP-HE-94* (Washington DC: U.S. Government Printing Office, May 1992), part of the ongoing study, American Industry and the Environment: Implications for Trade and U.S. Competitiveness. That assessment will examine international markets for environmental services and technology, including Mexico's, and the impact of environmental regulations on U.S. industry.

19 Factual information on the Border Area comes from *Integrated Environmental Plan for the Mexican-U.S. Border* (Washington, DC: U.S. Government Printing Office, 1992) and *Review of U.S. -Mexico Environmental Issues,* Interagency Task Force coordinated by the Office of the U.S. Trade Representative, Washington, DC, February 1992, unless otherwise noted.

The 'Border Area' was itself defined in the 1983 ' '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, ' usually called the U, S,-Mexico Border Environmental Agreement or sometimes the La Paz Agreement, as the region extending 100 kilometers (62 miles) on each side of the boundary between the two countries. Covering about 250,000 square miles, the Border Area is nearly as large as Texas (267,000 square miles).

20 *Summary: Environmental plan for the Mexican-U S. Border Area, First Stage (1992-1994)* (Washington, DC: U.S. Environment Protection Agency, February 1992), p. 8.

21 C. Cooper, ' 'Ecological Exchanges in a Bi-national Metropolis: San Diego and Tijuana, ' paper presented at the Annual Meeting of the American Association for the Advancement of Science, Chicago, Feb. 8, 1992.

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Box 6-B-Conservation

Biodiversity in Mexico is exceptionally high. The country ranks fourth in the world in total number of species (first in species diversity for reptiles, second for mammals, and fourth for amphibians).[1] More than half of Mexican reptilian, amphibian, and plant species are found only in Mexico, as are almost half of its freshwater fishes and about one-third of its mammals.

Economic development and population growth inevitably threaten wildlife habitats. Mexico cannot feed its people, and will seek to expand its agricultural lands. If a NAFTA reduces U.S. barriers to imports of Mexican fruits and vegetables, areas that are now marginal for farming could come under cultivation. Careful planning will be needed if the highways, roads, and railway lines needed to transport a growing volume of trade are not to cut into fragile wetlands and desert habitats. But perhaps most threatened are the Gulf of Mexico and its estuaries, major commercial fishing areas and unique resources.

The Gulf of Mexico

Gulf wetlands provide habitat for at least three quarters of North American migrating waterfowl.[2] Many species of fish and shellfish breed in these same wetlands. The gulf and its estuaries have already been seriously damaged by U.S. oil and gas production, the associated petrochemical industries, and agricultural runoff, together with industrial wastes and sewage from Mexico. Oil spills and wastes associated with shipping also pose continuing threats. Examples of the damage include:

- polluted estuaries, with adverse consequences for commercial fishing (including closure of millions of acres to harvesting of shellfish because of human health concerns);
- the deaths of an estimated 2 million seabirds and 100,000 marine mammals each year in the United States alone because of marine debris, often plastic, which entangles the animals or is mistaken as food; and
- the loss of marine vegetation from dredging, urbanization, toxic industrial wastes, and sewage.

1 *Mexico Environmental Project,* Report No. 1OOO5-ME (Washington, DC: World Bank, 1992).

Threats to biodiversity go back at least to the European colonization of North America and the westward expansion of the United States. The estimated 60 million bison, which in 1700 roamed much of what is now Mexico as well as the central United States, had been reduced to a few dozen by 1900. F. O. Monasterio, "Confronting Environmental Degradation: A Problem Without Borders," *FAO Review,* vol. 20, Sept./Oct. 1987, pp. 35-37.

2 *Summary: Environmental Plan for the Men"can-U.S. Border Area, First Stage (1992-1994)* (Washington, DC: U.S. Environmental Protection Agency, February 1992), p. 8.

hazardous waste, pesticides and other agricultural chemicals, pollution of air and water, and squandering of natural resources (box 6-B). Damage occurs both directly (e.g., cent amination of rivers and ground water with industrial solvents) and indirectly (e.g., as a secondary consequence of unpaved roads and poor housing). The current situation can be summarized as follows:

- *Air quality. The* limited data available from monitoring stations on the U.S. side indicate that most of the larger U.S. border communities, including San Diego and El Paso, fail to meet one or more national air quality standards. Air quality monitoring, often limited on the U.S. side, has only recently begun on the Mexican side of the border, but it seems clear that Mexico is the source of much of the air pollution in the Border Area as a whole.
- *Water quality.* Border Area water comes from major river systems including the Colorado, Tijuana, and Rio Bravo/Rio Grande, and from ground water sources. Threats to the quality of Border Area water supplies, and to the marine environment of the Pacific Ocean and the Gulf of Mexico, come both from industrial pollution and from inadequate sewage treatment. For example, the common ground water aquifer serving Nogales, Mexico and Nogales, Arizona has been contamin ated with industrial solvents from *maquila* plants.[22]

Many Mexican border cities have no sewage treatment plants of any kind. Ciudad Juarez, for

22 Mary E. Kelly, Dick Kamp, Michael Gregory, and Jan Rich, "lJ.S.-MexiCo Free Trade Negotiations and the Environment: Exploring the Issues," *Columbia Journal of World Business,* vol. XXVI, summer 1991, pp. 43-58.

Cooperation and Conflict

The United States and Mexico are signatories to both bilateral and multilateral wildlife conservation agreements covering migratory birds, game mammals, and endangered species. The agreements provide for animal surveys, information exchange, training of technicians, enforcement of prohibitions against trade in wildlife, and preservation of wetlands and wintering sites.[3] Bilateral agreements also provide for establishment of national parks, firefighting, and management of forest resources.

While cooperative efforts go back many years, so do conflicts--aver water rights, and recently over tuna fishing. With the 1972 Marine Mammal Protection Act, the United States set strict standards for the protection of dolphins, which were frequently killed or injured during commercial fishing operations.[4] Failure by Mexico to meet these standards led the United States, in 1991, to ban imports of tuna from Mexico.[5] Mexico protested to the General Agreement on Tariffs and Trade (GATT), arguing that the U.S. ban was an unfair trade practice. Subsequently, a GATT dispute resolution panel found the U.S. action to be in violation of GATT codes. The matter remained unresolved as of mid-1992, the next step being consideration of the panel's findings by the GATT Council.

Similar issues have surrounded the incidental death of sea turtles during Mexican shrimp fishing operations in the Pacific and the Gulf of Mexico. Seven of the eight species of marine turtles lay their eggs on Mexico's beaches.[6] U.S. shrimping vessels use special devices to keep sea turtles out of their nets, practices that Mexican officials state will be adopted within 3 years. Mexico has also promised to stop fishing for the olive ridley sea turtle, an endangered species found on the Pacific Coast of southern Mexico.

3 Bilateral agreements include the 1936 Convention for the Protection of Migratory Birds and Game Mammals and the 1984 Agreement for Cooperation in the Conservation of Wildlife. Multilateral agreements include, among others, the 1941 Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, the 1988 U.S.-Mexico-Canada Tripartite Agreement on the Conservation of Wetlands, and the Convention on International Trade in Endangered *Species* of Wild Fauna and Flora (CITES), a treaty addressing illegal trade in wildlife that Mexico recently signed. *Review of U.S.-Mexico Environmental Issues,* Interagency Task Force coordinated by the Office of the U.S. Trade Representative, Washington, DC, February 1992, p. 49-50.

4 tired dolphins often swim *together, especially in the* eastern tropical Pacific, where a quarter of the world's tuna are taken. Fishermen who saw herds of dolphins surfacing to breathe would set their nets for tuna, entangling dolphins who then suffocated because they could not reach the surface. With passage of the 1972 law, modifications to nets and new fishing practices reduced estimated dolphin deaths from about 130,000 in 1986 to 25,000 in 1991.

5 *Trade and* the *Environment: Conflicts and Opportunities* (Washington, DC: Office of Technology Assessment, May 1992), pp. 15-16, 18-19. Between 1986 and 1989, Mexican fishermen reduced the number of dolphins killed per net deployed by more than half. R. Howard, "U.S.-Mexican Cooperation Goes Far Beyond Trade," *Business America,* Apr. 8, 1991, p. 9.

6 *Mexico Environmental Project,* op. cit., footnote 1, p. 4.

example, produces 22 million gallons of raw sewage daily.[23] With an estimated 8 to 10 million gallons of raw sewage pumped daily into the Tijuana River, a 2.5-mile section of San Diego beach has been closed since **1980,** with the quarantine temporarily extended to 6 miles in 1983 and again in 1985 because of shifts in ocean currents.[24] Besides the major river systems, Border Area fresh water comes from renewable and nonrenewable ground waters. The quality of recharging water will affect the quality of water later pumped from underground aquifers. Inadequate or nonexistent sewage treatment has contaminated wells with coliform bacteria and viruses, leading to concern over sewage-associated diseases including typhoid and hepatitis, which are more common on the Mexican side of the border.[25]

23 D. Solis and S. L. Nazario, "(J. S., Mexico Take on Border Pollution," *Wall Street Journal,* Feb. 25, 1992, p. B 1.

24 J. Ladou, "Deadly *Migration:* Hazardous Industries' Flight to the Third World, " *Technology Review,* July 1991, p. 50; *Summary: Environmental Plan for the Mexican-U.S. Border, First Stage (1992-1994),* op. cit., footnote 20, p. 12. San Diego, which has treated some of Tijuana's waste water since the 1960s, now plans to build a new sewage plant for Tijuana's sole USC,

An estimated 20 million gallons of raw sewage enters the Rio Grande each day; the New River receives 17 million gallons. "A Permanent US-Mexico Border Environmental Health Commission, " *Journal of the American Medical Association,* vol. 263, June 27, 1990, p. 3320.

25 The Pan American Health Organization places the incidence of typhoid at 100 times higher on the Mexican side. Solis and Nazario, "U. S., Mexico Take On Border Pollution, op. cit., footnote 23. Hepatitis in San Elizario, TX, which affects 35 percent of children by the age of 8 and 90 percent of residents by the age of 35, has been attributed to a sewage-polluted aquifer shared across the border. "Environmental Impact of NAFTA Investment Provisions: Problems and Solutions, Memo to Ambassador Carla Hills, U.S. Trade Representative, from J D. Hair, President, National Wildlife Federation, " Nov. 20, 1991, p. 2.

- *Municipal solid waste.* Mexican border cities generate about 3,500 tons of garbage each day; only half is collected, two-thirds of which goes to open air dumps.
- *Hazardous waste. Maquiladoras* generate unknown but evidently large amounts of hazardous waste. Mexico's environmental regulations require that hazardous waste generated in *rnaquila* plants from raw materials imported from the United States either be returned or "nationalized' (e.g., recycled and retained in Mexico). Compliance appears to be low: records collected by the U.S. Environmental Protection Agency (EPA) show only 9 shipments (totaling 190 tons) of hazardous waste from *maquila* plants through U.S. Customs ports in Texas in 1987, and 356 shipments (2,390 tons) in 1990. Mexico's environmental agency, SEDUE, has put the compliance of *maquiladoras* with requirements for hazardous waste return at about 30 percent in 1991, twice as high as the previous year.[26]
- *Soil erosion.* An estimated two-thirds of Mexican land suffers from moderate erosion (losses of up to 4 tons of soil per acre per year), and 13 percent from severe erosion (losses of 4 to 6 tons annually) .27 For the farmer, erosion reduces land productivity and raises costs if more fertilizer is used to replenish nutrients. Erosion also leads to increased runoff, slowing the recharge of aquifers, and causes silting of dams and waterways.

Environmental Protection in Mexico

Mexico passed its first environmental law in 1971, establishing a Subsecretariat of Environmental Improvement under the Secretariat of Health, but the agency got little money and did not accomplish much.[28] Under President de la Madrid, who took office in 1982 after making the environment a campaign theme, Mexico created SEDUE, with responsibilities similar to those of the U.S. EPA. SEDUE's budget remained small, if only because of Mexico's debt crisis, but the 1980s brought acknowledgement that Mexico City's air pollution was becoming intolerable and saw the beginnings of a grassroots environmental movement. So far, environmental groups have been small, scattered, and concerned with local issues, most of them in Mexico City, although citizen involvement is also growing in the Border Area.

The comprehensive Federal Law of Ecological Equilibrium and Environmental Protection followed in 1988, covering both environmental protection (water, air, pesticides, hazardous wastes) and conservation of natural resources.[29] SEDUE was given considerable powers to, for example, shut down plants-powers not unusual in Mexico (box 6-C). But Mexico's government announced in April 1992 that SEDUE itself would be absorbed into a new Secretariat for Social Development (SEDESOL), along with the huge social welfare agency known as PRONASOL. SEDESOL will be a large and powerful agency, thanks to the former PRONASOL; it also becomes heir to a long-established tradition of patronage and porkbarreling. In the U.S. context, merging SEDUE into PRONASOL could be compared to merging EPA into the Department of Health and Human Services. In the Mexican context, on the other hand, the shift might be taken as a signal of a higher priority for the environment. If nothing else, a wait-and-see attitude seems called for. Much the same holds for Mexico's announced plans to give more responsibility for environmental enforcement and clean-up to state governments.

Mexican environmental laws state general objectives rather than specific criteria that must be met. These broad objectives must be codified in regulatory language and technical standards, a process that is underway but not complete. Regulations and technical norms issued so far cover aspects of environmental impact assessment, air pollution, hazardous waste disposal, vehicle emissions in

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26 P. Chirinos, Secretary of Urban Development and Ecology, "Mexican Integrated Environmental Border Plan," speech, Ciudad Juarez, Oct. 23, 1991.

SEDUE (*Secretaría de Desarollo Urbano y Ecologia*, the Secretariat for Urban Development and Ecology) has recently merged with another agency, as discussed later in the chapter. For convenience, the chapter refers to SEDUE throughout.

27 *Back-of-the-Envelope Estimates of Environmental* Damage *Costs in* Mexico, op. cit., footnote 18, pp. 7-8.

28 This summary of events before passage of Mexico's comprehensive environmental law in 1988 is based on S.P. Mumme, "Clearing the Air: Environmental Reform in Mexico," *Environment, vol. 33,* December 1991, pp. 9-10.

29 The text was drafted by the then head of SEDUE, a close associate of Mexico's current President Salinas. Seventeen separate U.S. statutes deal with the comparable range of issues. See *Review of U.S.-Mexico Environmental Issues,* op. cit., footnote 19, pp. 17-23.

As in the United States, the laws and regulations of the 31 Mexican states must be at least as stringent as federal law.

Box 6-C—Enforcement[1]

In the United States, legal maneuvers and litigation can substantially slow regulatory enforcement. By the same token, environmental groups have been able to use the U.S. legal system to force reluctant firms and government agencies to follow the law. Neither polluters nor citizen groups have as much recourse in Mexico, where government agencies have substantially more independence of action and freedom from oversight.[2] Enforcement takes place primarily through administrative proceedings, rather than litigation.

Like the United States, Mexico relies on a system of permits (now requiring environmental impact assessments for new facilities and expansions, and, if there are possible hazards, a risk assessment) and inspections to ensure compliance with laws and regulations. SEDUE can levy fines, close plants (partially, temporarily, permanently, or in combination), and order administrative detention of corporate officers for up to 36 hours (usually served in periods of several hours per day until an agreement on compliance is reached). SEDUE not infrequently shuts plants before negotiations to force a quick settlement.[3] Criminal prosecutions have been rare.

Despite SEDUE's theoretical powers, enforcement of Mexico's environmental regulations has been lax. The agency's budget was only $39 million in 1991 (compared with a U.S. EPA budget of about $5 billion), and at that had increased by more than six times from a 1989 total of $6 million.[4] Mexico had only 19 inspectors to monitor some 120,000 industrial facilities until 1991, when the authorized level went to 100.[5]

1 For tier&@ see *Review of U.S.-Mexico Environmental Issues,* Interagency Task Force coordinated by the Office of the U.S. Trade Representative, Washington, DC, February 1992, pp. 38-42.

2 Mexico's civil law tradition gives the executive considerable power to take unilateral action and to itself resolve disputes; the public at large has little standing or influence. S.S. Jarvis, "Preparing Employees to Work South of the Border," ***Personnel,*** June 1990, p. 60.

3 Plant closings by SEDUE in the winter of 1990-91 spurred multinationals operating in Mexico to begin environmental audits in preparation for negotiations with SEDUE inspectors, so as to avert the possibility of costly shutdowns. R.S. Jones, "Learning from Experience," *Business Mexico,* October 1991, p. *26.*

Reportedly, more than 1,000 plants have been closed since 1989-82 permanently, including a state-owned refinery in Mexico City that employed 5,000 people. A.R. Dowd, "Viva Free Trade with Mexico!" ***Fortune,*** June 17, 1991, p. 100.

4 "Mexican Environmental Laws, Regulations and Standards: Preliminary Report of EPA Findings," U.S. Environmental Protection Agency, Office of Enforcement Office of the General Counsel, May 3, 1991, revised June 19, 1991, p. 2.

The World Bank is currently evaluating Mexico's application for a $90 million loan for SEDUE. T. Atkeson, Assistant Administrator, Office of International Activities, Environmental Protection Agency, ***Hearings on the*** *North American Free Trade Agreement, Serial No. 102-15,* House Committee on Energy and Commerce, Subcommittee on Commerce, Consumer Protection, and Competitiveness, Mar. 20, May 8 and 15, 1991, p. 104.

5 S. Fletcher and M. Tiemann, "Environment and Trade," Issue Brief IB92006, Congressional Research Service, updated Mar. 4, 1992. Fifty of the new inspectors are intended for the Border Area.

Mexico City, and contamination of the sea. Environmental impact and risk assessments are not required for existing industrial facilities, but plants must register with SEDUE and apply for air, water, and hazardous waste permits, as appropriate.[30] Three **areas** regulated in the United States but not yet covered in Mexico are: land disposal of hazardous waste; leaking underground storage tanks; and cleanup of abandoned hazardous wastesites.[31]

Environment and the NAFTA

Mexico and the United States have negotiated over issues at least tangentially related to the

30 The percentage of *maquiladora* plants meeting the requirements for licensing under the 1988 federal law reportedly rose from 6 percent in 1989 to 55 percent in the fall of 1991. Chirinos, "Mexican Integrated Environmental Border Plan," op. cit., footnote 26.

U.S. labor and environmental groups have argued, with some justification, that lax environmental enforcement in Mexico attracts U.S. plants that might otherwise stay at home. Most of the documented cases involve inherently dirty industrial processes, where U.S. regulations have become increasingly stringent. For example, three-quarters of furniture companies that relocated from Los Angeles to Mexico during 1989 cited tough California standards for emissions associated with paint and solvents, although labor costs appeared to beat least as important as a reason for moving. U.S. Generat Accounting Office, letter to the Honorable John Dingell, *Hearings on the North American Free Trade Agreement, Serial No. 102-1-5,* House Committee on Energy and Commerce, Subcommittee on Commerce, Consumer Protection and Competitiveness, March 20, May 8 and 15, 1991, p. 237.

A study by the U.S. International Trade Commission found that labor costs ranked first and environmental controls last in a list of 21 factors influencing locational decisions. T. Atkeson, Assistant Administrator, Office of International Activities, Environmental Protection Agency, *Hearings on the North American Free Trade Agreement* (above), p, *87.*

31 *U.S.-Mexico Trade: Information on Environmental Regulations and Enforcement,* op. cit., footnote 18, p. 6.

Box 6-D—Major U.S.-Mexico Agreements Related to the Environment

1889- **International Boundary Commission (IBC)**

Created to settle boundary disputes.

1906- Convention Providing **for the Equitable Distribution of the Waters of the Rio Grande for Irrigation Purposes**

Governed allocation of water from the upper 90 miles of the Rio Bravo/Rio Grande.

1944- Treaty on the Utilization **of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (Water Treaty of 1944)**

Replaced the IBC with the International Boundary and Water Commission (IBWC) and modified the 1906 convention. In cooperation with SEDUE and EPA, the IBWC identifies and seeks to correct cross-border water pollution problems. Currently, the IBWC is overseeing construction or expansion of waste water treatment facilities in five pairs of Border Area cities.

1983- **U.S. Mexico Border Environmental Agreement (La Paz Agreement)**

First formal agreement to improve the environment in the Border Area. Provides a "basis for cooperation for the protection, improvement, and conservation of the environment and the problems that affect it . . . and a framework for development of a system of notification for emergency situations." Defines responsibilities for governmental bodies including EPA, SEDUE, and the IBWC. Provides for study of air pollution along the border.

1989- **Mexico City Agreement on Pollution**

Commits both countries to solving air and water pollution, hazardous waste, and environmental health problems in Mexico City.

Integrated Environmental Plan **for the Mexican-U.S. Border Area (First Stage, 1992-1994)**

The *Plan,* as it is referred to in this chapter, was released in February 1992. It is discussed in the text of the chapter.

[1] *U.S.-Mexico Trade: Information on Environmental Regulations and Enforcement,* GAO/NSIAD-91-227 (Washington, DC: U.S. General Accounting Office, May 1991); *Integrated Environmental Plan for the Mexican-U.S. Border Area (First Stage, 1992-1994)* (Washington, DC: U.S. Government Printing Office, 1992).

environment-notably use of water from the Rio Grande--for more than a century. During the 1980s, the agenda expanded to include the full panoply of environmental issues (box 6-D).

In May 1991, when Congress granted the administration ''fast track' negotiating authority, it called for the administration to address the environmental consequences of a NAFTA (on both sides of the border) on a parallel track.[32] In response, Presidents Bush and Salinas charged EPA and SEDUE to jointly prepare the *Integrated Environmental Plan for the Mexican-US. Border Area,* Intended as a master plan for dealing with border environmental problems, the *Plan* was released at the same time as a parallel *Review of U.S.-Mexico Environmental Issues (the ''Review' '),* prepared by the Office of the U.S. Trade Representative. Neither the *Plan* nor the *Review* is an environmental impact statement; such a document could not be prepared without a NAFTA text in hand.

Both reports, and especially the more important *Plan,* have come under intense criticism for lacking specific goals for environmental improvements and

32 In a letter to President Bush, Senator Lloyd Bentsen, Chairman of the Committee on Finance, and Representative Dan Rostenkowski, Chairman of the Committee on Ways and Means, also requested the president to indicate how differences in health and safety standards and the rights of workers in the two countries would be addressed. See *Exchange of Letters on Issues Concerning the Negotiation of a North Amen"can Free Trade Agreement,* Committee on Ways and Means, U.S. House of Representatives, May 1, 1991.

cost estimates for achieving them.[33] EPA and SEDUE conducted 17 public hearings in September 1991, following release of a draft of the *Plan the* preceding month. Seven of the hearings took place in Mexico, where they attracted great attention as unique events in a country lacking a tradition of citizen involvement on environmental matters.[34] The final version of the *Plan* addressed some (but not all) of the issues raised at the hearings. It does not, for example, call for *maquiladoras* to submit plans and timetables for meeting environmental standards, or require SEDUE to disclose information on environmental and health hazards, a matter of great concern to many of those who participated in hearings on the Mexican side of the border.[35]

Congressional concern has continued to mount. In House Resolution 146, Congress reserved the right to rescind fast-track authority if the administration failed to act decisively on border environmental problems, and in at least four other resolutions (H. Res. 149, H. Res. 151, H. Res. 227, and H. Res. 246), Congress requested the administration to include environmental provisions within the NAFTA itself.[36] In response to mounting criticism and this spate of resolutions, the administration began to negotiate for ''green language' in a NAFTA. U.S. Trade Representative Carla Hills, in a June 1992 letter to Senator Max Baucus, listed the following environmental goals for NAFTA:[37]

1. To ensure that U.S. environmental laws and regulations, if applied in a nondiscriminatory manner, can be defended against unfair trade challenges.
2. To provide that the NAFTA not interfere with U.S. measures taken to comply with international environmental agreements.
3. To make clear that there is to be no ''downward harmonization' of U.S. environmental and health and safety standards, and to explicitly recognize, in the text of the NAFTA, the right of States and other subnational governmental bodies to set their own environmental and health protection standards.
4. To place the burden of proof on the party challenging any environmental measure as constituting an unfair trade measure.

33 In response to critiques of a draft of the *Review*, released in October 1991, the final version included further discussion of public health and maritime issues, among other additions. The additions can best be characterized as background information. See, for example, ''Comments on the Draft Review of U.S.-Mexico Environmental Issues, ' Natural Resources Defense Council, *Instituto Autónomo De Investigaciones Ecológicas, A.C.*, and *Grupo de los Cien*, December 1991. The authors took issue with the draft *Review* **because it** concentrated on the Border Area, assumed that environmental improvement would automatically follow from economic development, and did not consider alternatives to a NAFTA versus no-NAFTA choice.

34 For discussion of the criticisms of the 1991 draft *Plan* based on testimony at eight of the hearings, interviews with environment] specialists in the Border Area, and other sources, along with briefer comments on the final *Plan, see* J.G. Rich, *Planning the Border's Future: The Mexican-U.S. Integrated Border Environmental Plan*, U, S.-Mexican Occasional Paper No. 1 of the U.S.-Mexican Policy Studies Program, LBJ School of Public Affairs (Austin, TX: University of Texas at Austin, March 1992). This report summarizes criticisms of the draft *Plan* in **17 areas,** ranging from inadequacies in the planning process itself (border communities complained of exclusion from the process, including inadequate notice of hearings) to vagueness on measures for improvement in all areas of environmental protection. Lack of funding drew the most criticism.

35 Rich, *Planning* the *Border's Future*, ibid.

In a another analysis of the *Plan, the* Texas Center for Policy Studies stated that it ''still falls far short of the needs of the border area today. After examining 87 action items for 1992 in the *P/an—none* constrained by financing—the Center concluded that:

- more than half (53 percent) consisted of information exchange during meetings, training programs, and plant visits;
- 10 percent of the remainder ''amounted to a promise to enforce existing laws' and
- 17 percent called for a study or for further planning. See "A Response to the EPA/SEDUE Integrated Border Environment Plan,'' Texas Center for Policy Studies, Austin, Mar. I, 1992.

Another critic in Texas, the Governor's environmental policy advisor, included in the *Plan's* deficiencies that it is: short on funding; lacks deadlines; is vague on enforcement and on mechanisms for coordination between State agencies and EPA; and calls for unnecessary needs assessments. She also criticized the U.S. funding commitment compared to that of Mexico. See *International Trade Reporter,* Mar. *4,* 1982, p. 401.

Further criticism of the *Plan* and/or the *Review has* come from the Community Nutrition Institute, the National Wildlife Federation the Fair Trade Campaign, and the Environmental Defense Fund. See, for summaries, "NAFTA: Flaws in Free Trade, Border Plans Seen Drawing Environmentalists' Opposition" *International Trade Reporter,* Mar. 11, 1992, p, 452; and ''Environmental Community Cites Flaws in Border Plan, Environmental Review," *International Environmental Reporter,* Mar. 11, 1992, pp. 136-137.

36 Congress also raised these issues in hearings—e.g., *Issues Relating to a Bilateral Free Trade Agreement with Mexico*, hearings, *Subcommittee* on Western Hemisphere and Peace Corps Affairs, Committee on Foreign Relations, U.S. Senate, Mar. 14, 22 and Apr. 11, 1991, and *North American Free Trade Agreement,* hearings, Subcommittee on Commerce, Consumer Protection, and Competitiveness, Committee on Energy and Commerce, U.S. House of Representatives, Mar, 20, May 8 and 15, 1991,

37 "Hills Lays Out Administration Plans on Environmental Initiatives in NAFTA," *Inside U.S. Trade,* June 19, 1992, pp. S-1 - S-5.

5. To include technical and scientific experts in dispute resolution concerning environmental issues.

Though such a response might seem comprehensive, it fell far short of what Senator Baucus sought. For example, Senator Baucus had asked for an explicit declaration that existing U.S. Federal and State environmental laws and regulations be immune from challenge under NAFTA. He also called for uniform North American environmental protection standards, which all new manufacturing facilities would have to meet; for financial commitments within the NAFTA text; and suggested that a permanent advisory body be created to monitor environmental conditions in the years following implementation of a NAFTA.

Cleaning up the Border Area will take a great deal of money. Keeping it clean will require serious commitment to regulatory enforcement, particularly in Mexico. Estimates of the sums needed run well into the billions of dollars.[38] The final version of the *Plan* provides relatively little reassurance on the central issue of long-term funding by the two governments (or other means of financing clean-up such as taxes on polluters). The United States has agreed to pay $379 million during fiscal years 1992 and 1993, and Mexico $466 million over the 3 years 1992 to 1994. These are modest sums. They may not be enough even to begin arresting the deterioration of the Border Area environment, much less to begin improving conditions there. Since the Border Area is still industrializing rapidly on the Mexican side, greater expenditures in all likelihood will be needed in the years ahead just to keep up with growth.

Mexico's budgetary commitment is commendable, but it is hard to be sanguine about the government's decision to eliminate SEDUE as an independent agency, and to merge it into a Secretariat for Social Development. Moreover, should a NAFTA be implemented, some of the pressure would be off the Mexican Government, because environmental groups are not strong enough, as yet, to have much influence. Ensuring border cleanup requires financing methods in both countries that do not depend on government appropriations. As discussed in chapter 2, a binational commission could be created to finance environmental improvement and infrastructure projects (e.g., sewage treatment plants) along the border.[39] The commission might issue bonds, backed by both governments, to be repaid, for example, by the proceeds from user fees or "green taxes." These fees could be levied on business profits in the Border Area or on exports from *maquiladoras.*

CONCLUDING REMARKS

Signs of the growing momentum behind environmental protection in Mexico include the comprehensive federal law passed in 1988, a growing number of environmental inspectors, stronger ties between the environmental protection agencies in Mexico and the United States, spending promised by Mexico for implementation of the *Integrated Plan for the Mexican-U.S. Border Area,* and growing citizen awareness. But the problems are massive, and the *Plan* has been widely criticized as inadequate, particularly in its lack of timetables and guaranteed long-term funding sources. Despite its own limited success in setting priorities, the United States has far more experience than Mexico in environmental cleanup and control, and could, with Mexico's agreement, take a more prominent role in improving environmental conditions in the Border Area, where pollution affects people in both countries.

In contrast, the United States has relatively little ability to control the flow of Mexican immigrants seeking to cross the border. Draconian policies would be necessary to slow undocumented immigration appreciably; only with improvements in wages and income distribution in Mexico will the pressures that drive migration moderate. There is little reason to expect a NAFTA, by itself, to slow migration to the United States.

38 An EPA official recently estimated that meeting current needs simply for sewage treatment and drinking water in the Border Areawould cost $3.5 billion. "U.S. Working With Mexico to Develop Way to Track Maquiladora's Hazardous Wastes," *International Environment Reporter,* July 1, 1992, p.431. Also see "Down Mexico Way,' *The Economist,* Apr. 18, 1992, p. 24; "The Environmental Impact of NAFTA Investment Provisions,' op. cit., footnote 25, p. 5.

39 Representatives Bill Richardson and Ron Wyden have introduced a resolution (H. Con. Res. 325) calling for a U.S.-Mexico environmental commission with 13 members from each country having such responsibilities. Such a commission could also determine needs and priorities. This approach has the advantage that funds would be independent of federal budget processes in both countries. See *Congressional Record,* May 27, 1992, p. H 3834.