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### Mexico

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# Mexico

ANNE L. ALONZO\*

## I. INTRODUCTION

The environment is a priority matter in Mexico and its regulatory system is transforming rapidly. The linkage of trade policies and the environment, primarily resulting from the debate on the proposed North American Free Trade Agreement ("NAFTA"), subjects Mexican environmental practices to heightened scrutiny. This article is an overview of Mexico's environmental policies, regulatory developments, United States-Mexico bilateral efforts, and emerging trends.

## II. MEXICO'S POLITICAL CONTEXT

Discussion of Mexico's environmental regime would be incomplete without reference to larger political conditions. Since 1988, when Mexico's President Salinas de Gortari first took office, Mexico has made significant strides in economic and environmental matters.

The Salinas Administration's express goals include, among others, facilitating economic recovery by adopting market-oriented economic practices, lowering inflation and reducing the foreign debt burden, pursuing a free trade agreement with the United States and Canada, as well as similar agreements with several Latin American countries, opening the political system, combatting narcotics traffick-

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ing, bolstering environmental protection, and curtailing corruption and human rights abuse.

Despite the Mexican Administration's emphasis on modernization, it has responsibly maintained that industrial development will not occur at the expense of the environment. One of the greatest challenges facing Mexico is to ensure that development is consistent with sustainable and sound environmental practices.

Mexico's political commitment to the environment is perhaps best expressed by President Salinas de Gortari in his State of the Union Address in November 1991. He said, "Mexico will not receive new, polluting industries that are not accepted in other countries. And just as we do not want dirty or obsolete industries, we do not want to see our territory or our seas turned into garbage dumps whether for ourselves or others . . . ."

### III. ENVIRONMENTAL REGULATORY PROGRAM IN MEXICO

#### *A. Background—Mexico's Constitution*

The Mexican environmental regime is founded in Articles 25, 27, and 73 of Mexico's Constitution. Article 25 specifically establishes federal jurisdiction in matters of environmental protection; Article 27 refers directly to the preservation and restoration of ecological balance with respect to all "natural resources," and Article 73 empowers Congress to promulgate environmental legislation.

#### *B. Environmental Statute; Implementing Regulations and Technical Standards*

The modern Mexican environmental legal regime was established in the General Law of Ecological Equilibrium and Environmental Protection ("General Law") which went into effect March 1, 1988, and abrogated prior environmental law.

The General Law addresses pollution problems in all media, natural resource conservation, environmental impact and risk assessment, ecological zoning and sanctions. The General Law covers the full spectrum of environmental issues, which contrasts with the legal regimes of other countries that have specific laws for different media.

The General Law establishes general criteria and policy guidelines for specific regulatory practices and directs the Secretariat of Urban Development and Ecology ("SEDUE") to develop the details of the environmental program. Since the enactment of the General Law, four regulations have been promulgated in the following areas: envi-

ronmental impact assessment, air pollution, Mexico City air pollution, and hazardous waste. A new regulation dealing with water pollution has been drafted and is expected to be released shortly.

These regulations in turn, rely upon quantitative ecological technical standards or parameters ("NTE") and ecological criteria to determine compliance. To date, sixty-nine NTE's and ecological criteria have been issued under the General Law and its regulations.

Many of the NTE's are developed in cooperation with Mexico's Ministry of Health, which is responsible for gathering available health related information, including toxicity data and existing standards from other countries, and recommending appropriate criteria to the Secretariat of Urban Development and Ecology ("SEDUE"). SEDUE then circulates these recommended actions within the Mexican government for review and comment.

The proposed standards are sent to state and municipal governments, and attempts are made to reach out to the scientific, professional, and educational communities. SEDUE also consults with Mexican industry about proposed standards and their effective dates, as these affect particular economic sectors or industries. SEDUE is continuing to work expeditiously to develop the regulatory and technical standards that will complete Mexico's legal environmental program.

### *C. Environmental Law of the Mexican States*

The General Law and the Regulations establish SEDUE's concurrent jurisdiction in certain matters with the states and municipalities in specific environmental protection matters. Mexican state laws and municipal ordinances enacted pursuant to the General Law must be at least as stringent, if not more so, than the applicable federal regulations or standards.

Increased decentralization of Mexico's environmental system is one of Mexico's stated goals, and it is expected that Mexican states will assume more responsibility for environmental protection in the future. To date, twenty-seven out of thirty-one Mexican states have adopted their environmental laws.

### *D. SEDUE*

In 1982, SEDUE, the United States EPA's equivalent in Mexico, was established and is primarily responsible for implementing the General Law. SEDUE is organized into three subsecretariats: Hous-

ing, Urban Development and Environment. The environmental sub-secretariat is further subdivided into four units: (1) Environmental Promotion and Community Based Social Support; (2) Environmental Regulation; (3) Prevention and Control of Environmental Pollution; and (4) Ecological Conservation of Natural Resources.

### *E. Highlights of Regulatory System*

#### *i. Environmental Impact Review Process*

Mexico controls development and land use to assure that it "grows clean" through its environmental impact review process. Under the General Law and the Environmental Impact Regulation, all new public or private activities or changes to existing facilities, that may cause: (1) "ecological imbalance," or (2) exceed the limits and conditions of ecological technical standards and regulations are required to demonstrate compliance with legal standards and obtain prior authorization from SEDUE *before beginning operations*. Mexico is also implementing a system of "ecological zoning" to conserve and protect its natural resources through siting restrictions on development projects. This system defines certain geographic areas, based on legal and environmental criteria, and specifies the type of development which may be undertaken. Mexico's environmental impact review requirement is broader than in the United States as it governs both public and private sector.

#### *ii. Enforcement Policies and Practices*

The General Law empowers SEDUE to enforce the General Law, Regulations, and NTE's within federal jurisdiction while granting to the states and municipalities the authority to adopt legislation and establish procedures to implement the mandates of the General Law. The General Law sets out four enforcement mechanisms; plant closings; the imposition of fines; criminal penalties and administrative arrest.

**Plant Closings**—Administrative proceedings in Mexico are generally argued by affidavit. A decision to close a facility rests with SEDUE in cases of federal jurisdiction. If a company contests the enforcement action and requirements of the compliance agreement, it can file an administrative appeal for review.

In Mexico, plant closings, whether temporary, permanent, partial, or a combination thereof, are intended to provoke negotiations between SEDUE and the corporate entities formally charged with the

violation. The plant is allowed to reopen only after an agreement containing timetables is reached and agreements are thereafter monitored by SEDUE.

**Fines**—The General Law and corresponding Regulations establish the imposition of fines, indexed to the minimum daily wage and up to the equivalent of \$80 thousand for environmental noncompliance. SEDUE's use of fines has varied over the years.

**Criminal Penalties**—Criminal penalties, depending on the nature of the violation, can range from three months to six years in prison and fines can be imposed from 100 to 10,000 times the minimum daily wage.

**Administrative Arrest**—Another mechanism available under the General Law is administrative, as distinguished from criminal, arrest. Administrative arrest can result in the deprivation of a corporate officer's freedom for up to thirty-six hours.

Although SEDUE has been hampered by budgetary constraints, Mexico has made remarkable strides in the development of an effective enforcement program. An increasing percentage of SEDUE's budget is allocated to enhancement of inspection and enforcement capabilities. SEDUE's 1991 budget of \$38.9 million provides for an expenditure of the equivalent of \$4.27 million on inspection, monitoring, and enforcement activities. Mexico also expects to receive approximately \$50 million in World Bank funds that will be matched with \$38 million by the Mexican government. A portion of these funds will go to improving compliance through monitoring and increasing the number of industrial inspections.

In the past four years, since enactment of the General Law, inspections have increased substantially. During this period, there have been over 7668 inspections of industries: 1924 of these industries have been closed, primarily on a temporary basis; 150 of these closings have involved *maquiladoras*.

In the Mexico City Metropolitan Area, officials have pursued industries which are violating air quality standards. In March, 1991, President Salinas closed one of Mexico's biggest and most-polluting oil refineries. It has been estimated that closure of the Pemex refinery cost Mexico \$500 million and resulted in the net loss of 5000 jobs.

#### IV. RECENT ENVIRONMENTAL DEVELOPMENTS

##### A. Mexico City

Mexico City, infamous for its pollution problems, continues to

present a difficult challenge to the Government of Mexico. Situated in a volcanic basin, ringed by mountains, Mexico City's topography, elevation at 7400 feet above sea level, economic infrastructure, and rapid population growth combine to create a pattern of environmental degradation and health risks. In addition, Mexico City's location makes for a year-round temperate climate but is menaced by the pollution and temperature inversions, especially in the winter.

In 1990, the Government of Mexico initiated its "Integrated Air Pollution Program" for the improvement of Mexico City air problems. Significant strides have been made in implementing this program which was made possible by \$3.5 billion dollars in external financing.

In the area of transportation, major steps have been taken to reduce toxic emissions. Some of the most noteworthy efforts include the following: the purchase of new, cleaner burning diesel engines for public buses; the requirement that model year 1988 or older taxis, vans and minibuses operating as public transportation be substituted for model year 1991 or newer vehicles; the installation of catalytic converters on all 1991 and subsequent model cars; the extension of the subway line by twenty miles; and "A Day Without a Car Program."

In the area of fuels, measures include the oxygenation of all gasolines, the introduction in 1991 of unleaded gasoline and leaded gasoline with seven times less lead. In November, the price of leaded gasoline was increased by 55% and the price of unleaded was increased by only 25% to discourage the use of private automobiles and to promote the use of unleaded gas in vehicles with catalytic converters. Other actions that are or will be implemented in the near future include: a reforestation program of over 10 million trees; incentives for relocation of industries out of Mexico City; the introduction of vapor recovery systems at gasoline stations and a mandatory auto emission program with Bar 90 verification systems. In February, 1992, President Salinas mandated the conversion of some 144,000 public vehicles to cleaner burning fuels within three years. These vehicles will have to convert to either liquid petroleum gas or natural gas.

To date, the Mexico City Air Program has been successful in reducing the levels of lead, carbon monoxide, and sulfur dioxide to meet the air quality standards established to protect human health. Ozone, the product of complex photochemical reactions that depend

on meteorological variations and chemical composition of air pollutants, is the most difficult pollutant to abate, and is an express priority of the Mexican Government.

In 1990, the Mexican Petroleum Institute and the United States Department of Energy signed a Memorandum of Understanding to study the air pollution problem in Mexico City. The resulting three-year, \$9 million research project — the Mexico City Air Quality Research Initiative—has commenced and seeks to assess the costs and benefits of alternatives to improve the air quality in Mexico City's air basin. A computer model is being developed to analyze the different mitigation strategies for Mexico City. This innovative study could become a model for analyzing the air pollution problem in other cities. The completed model will not only consider the environmental impact but will try to quantify the social and economic impacts as well.

### *B. United States/Mexico Bilateral Efforts*

Significant developments are occurring in United States/Mexico bilateral environmental cooperative efforts. Although the history of environmental cooperation between the United States and Mexico dates back over a century, cooperation between both countries has intensified in recent years particularly as a result of growing concern over the range of pollution problems along our shared border area.

Nowhere was this concern more pronounced than preceding the Congressional approval of fast-track negotiation authority for the proposed NAFTA. The United States Administration's response to Congressional concerns that environmental-related issues be taken into account contained several key environmental commitments and are being addressed on a "parallel track" to NAFTA negotiations.

#### *i. Integrated Environmental Plan for United States/Mexico*

An integrated Environmental Plan for the United States/Mexico Border area ("Border Plan") was developed by the United States EPA and SEDUE, and a Draft Border Plan was released to the public on August 1, 1991. The Border Plan focuses on the environmental concerns of the border area, including water quality, hazardous wastes, air quality, and chemical emergencies. A series of sixteen public hearings were conducted in border cities on the Border Plan with the written and verbal testimony of over 750 people. It is expected that the



final text of the first stage of the Border Plan, to cover the period of 1992-1994, will be announced in February 1992.

Prior to the completion of the Border Plan, Mexico announced that \$460 million will be allocated over the next three years for environmental infrastructure projects along the border with over 142 million to be provided in 1992. The funds will be distributed as follows: water supply and waste-water treatment, \$223 million; municipal solid waste, \$26 million; highway, bridge and border crossing projects, \$120 million; and provision of housing areas with necessary utilities, \$44 million. Also announced was the doubling of the number of SEDUE inspectors for the border area by January 1992 for a total force of 200 inspectors.

#### ii. Environmental Review Document

In October 1991, the United States Trade Representatives Office ("USTR"), in coordination with the United States EPA and other concerned agencies, released a Draft Environmental Review Document, addressing the environmental effects of a free trade agreement, drawing particular attention to the trade and economic impact on the United States/Mexico border area. The final text of the Environmental Review Document is expected to be released February 1992. Mexico is presently conducting a similar Environmental Review.

#### iii. Enforcement

A new bilateral Working Group on Enforcement has been established as part of the cooperative process for consultation on enforcement. The Working Group has met several times and is developing a work program to enhance bilateral efforts in enforcing environmental regulations in both countries.

#### iv. Technical Cooperation and Training

In November 1991, a major technology transfer initiative known as the Environmental Technology ("Envirotech") Clearinghouse was announced for use in Mexico. Envirotech is a computerized data system with access to over 500 databases of pollution control and energy efficient technology available in the United States. Also, in November 1991, the creation of a United States/Mexico Environmental Business Committee was announced with the initial goal of helping businesses in the border area and Mexico City meet priority environmental protection goals.

In addition, extensive training and technical assistance has been provided to Mexico by United States EPA officials. Further, an Environment Cooperation Program, which will expand on Mexican training and study needs, is currently being developed. Examples of technical assistance programs include: (1) an inspector training program being developed for SEDUE inspectors; (2) technical presentations in the United States and Mexico to assist Mexico in its design of its vehicle inspection and auto emissions verification programs; and (3) officials from Mexico visiting United States labs to learn about fuels formulation and automobile engine testing and practices. Technical assistance is also being provided to assist Mexico in the calibration of its air monitoring equipment and the development of new technical norms for vehicle emissions.

### *C. Global Environmental Initiatives*

#### *i. Ozone Layer Depletion*

Mexico has taken the lead in addressing global environmental problems in recent years. Mexico was the first country to sign the Montreal Protocol which limits the amount of certain ozone depleting substances that can be produced and consumed. In July 1991, SEDUE, in partnership with the Mexican electronics industry, Northern Telecom, the Industry Cooperative on Ozone Protection and the United States EPA, embarked on a technology transfer program to exchange information management strategies and technologies to help reduce the use of chlorofluorocarbons ("CFC's") and solvents used by the electronics industry in Mexico that deplete the ozone layer. Mexico has committed to the goal of phasing out the use of CFC's in Mexico by the year 2000, the same goal established for developed countries. Thus, Mexico is ten years in advance of other developing countries, who plan to phase out CFC's by the year 2010.

#### *ii. Endangered Species*

In 1991, Mexico became a signatory to the Convention for the International Trade in Endangered Species ("CITES") marking an important step in addressing illegal trade in wildlife.

#### *iii. Global Climate Change*

Mexico is active in the debate and research on Global Climate Change. President Salinas has expressed Mexico's interest in President Bush's initiative of setting up a Center for Economic and Science

Research on Global Change in the Americas. Mexico is considering a country study on global climate change including work on inventories and technology assessment in specific sectors. Since 1990, the Agency for International Development ("AID") has been working with the Government of Mexico and several Mexican and United States Conservation organizations to protect priority parks and reserves and to promote sustainable development in buffer zones. More recently, AID assistance is being provided to promote energy efficiency and conservation through training, technical cooperation, and project activities supporting demand-side management and increased use of renewable energy technologies such as wind, solar and biomass.

## V. EMERGING ENVIRONMENTAL TRENDS

Mexico's emphasis on environmental protection will be amplified as a result of internal pressures to combat pollution and infra-structural development, external pressures arising from the NAFTA, and the prominence of the worldwide environmental movement.

As in the United States, the Mexican environment market is driven by regulatory pressures. Given Mexico's focus on compliance and enforcement, it is expected that the private sector will be a major player in an area traditionally directed by the government. Mexico's environmental infrastructure, which is in its infancy, will require laboratories, engineering firms, legal counsel, environmental facilities for treatment, storage, and disposal, and will rely on the import of foreign equipment, capital, and expertise to accelerate in its development.

To date, environmental protection is a major growth industry in Mexico. United States firms involved in environmental services and technology are coming to Mexico to explore business opportunities. As evidence of this increased interest, the United States Embassy Trade Center sponsored an Environmental Trade Show and Conference "Ecologia 1991" and attracted over 2900 visitors. Projected sales for the show were the third largest in the Trade Center's nineteen-year history. Presently, United States companies are entering into joint-ventures with Mexican firms and are setting up local offices to establish their presence in Mexico.

Another emerging trend involves Mexico's academic sector. This sector will play an important role in helping equip Mexico with the environmental professionals it so vitally needs. At a minimum, this will involve the incorporation of environmental and environmen-

tal-science degrees and educational exchanges between countries sharing their experience and expertise with Mexican universities.

Finally, as in other countries, a "green movement" has taken hold in Mexico. The public is concerned about health, conservation issues, and environmental protection. For that reason, environmental education and community participation will be increasingly important.

## VI. CONCLUSION

The environmental regime of Mexico, undergoing vast changes, is moving toward a comprehensive regulatory system and a supportive infrastructure. The government of Mexico is tackling Mexico City's air pollution problem, is strengthening its enforcement program, evolving in areas of bilateral cooperation primarily through its partnership in the United States/Mexico Environmental Border Plan and has assumed a leadership role in global environmental issues. Mexico has shown its commitment and seriousness about "growing clean" and, in some respects, is doing in a few short years what the United States took over at least two decades to achieve.

