

POLITICAL DEVELOPMENT
AND ENVIRONMENTAL POLICY
IN MEXICO

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The fight against ecological degradation "has become a generalized policy demand of the whole society," declared Marcelo Javelly Girard, Mexico's Secretary of Urban Development and Ecology.¹ Addressing the Mexican Cabinet and hundreds of dignitaries attending Mexico's Primera Reunión Nacional de Ecología in June of 1984, Javelly Girard thus placed environmental concerns on President Miguel de la Madrid's official policy agenda. Appropriately convened in Mexico City (the world's fifth-most-polluted city by the Mexican government's own reckoning), the congress climaxed two years of effort by the de la Madrid administration to promote public environmental awareness as part of its national development program.

The de la Madrid initiative represented a substantial departure from the priorities of past administrations concerning the environment, and it introduced several innovations that contrast impressively with the Mexican government's historically unrestrained commitment to rapid industrialization. Indeed, few knowledgeable observers had previously held out much prospect for environmental policy in Mexico, official rhetoric notwithstanding.

De la Madrid's policy innovations and Mexico's experience with environmental policy since enacting its first national environmental law in 1971 provide a useful opportunity to evaluate the conventional wisdom about the relationship between political development and environmental policy in Latin America. Since the Founex Report first drew global attention to the relationship between development and environment in 1971, the capacity of Third World countries to sustain effective environmental programs has been hotly contested (Almeida et al. 1972). Opinion from all quarters has been preponderantly skeptical. Competing for scarce investment capital, racing against population growth, and beset by a lack of technical skills, information, and managerial resources, Latin American countries have generally been viewed

as preferring the "luxury of pollution" to the costs of managing the environment.

In addition to economic constraints and material scarcity, the political constraints associated with underdevelopment have also been viewed as limiting the capacity of Latin American countries to pursue effective environmental policies. The two broad complexes of political variables seen as problematic in this area are those limitations arising from economic dependency on the industrialized countries and those inherent in the nature of the political systems of individual Latin American countries.

In the first category, constraints arise from the pattern of dependent development associated with center-periphery relations in the world economy. One common assumption holds that Third World countries tend to adopt environmental laws because of a "demonstration effect" and in response to requirements imposed by the industrialized nations. According to this view, Latin American environmental policies reflect a process of diffusion of innovation characterizing the late industrialization of the region and a lagged response to the adverse environmental impacts of industrialization on their societies (Kruse 1974, 683–84). But whether due to emulation or coercion or both, Latin American countries lack the capacity to implement these policies due to the overriding need to attract and maintain foreign and domestic investment. According to Cynthia Enloe, "policy makers in underdeveloped countries will be especially vulnerable to external pressures as they weigh environmental options" (1977, 117).

In the second category fall limitations embedded in the political systems of Latin American countries. A variety of hypotheses have been advanced in this regard. One set of hypotheses focus generally on the gap between elites and masses and suggest that environmental policy in developing nations is inherently elitist. Kruse, for instance, suggests that "the audience for environmental presentations in the less developed countries (LDCs) has been more or less confined to the political and technical elites whose sociocultural disposition is marked by a firmly entrenched commitment to development values and goals as postulated by the prevalent growth ideology." He continues, "the diffusion of environmental ideas to developing countries has after all not resulted in the emergence of domestic forces pressing for the pursuit of specific policies. If such pressures do arise they will most probably proceed from interested elite quarters" (Kruse 1974, 683–84).

Another set of hypotheses relate the authoritarian character of many Latin American political systems to limited political participation, ineffective articulation of political demands, and low government responsiveness to political demands. Lundqvist, for example, argues that "the more open and conflict-oriented the political system, the more

immediate and substantial its response to demands for environmental policy," while "the more closed and consensus-oriented the political system, the slower and less substantial its response to demands for environmental policy" (Lundqvist 1978, 91–92). From this perspective, major obstacles to the development of environmental policies are found in single-party or limited pluralist systems employing a variety of methods to limit or co-opt the articulation of interests in society. Such systems reinforce elite decision making and agenda domination, restricting the opportunities for environmental policy development. Where environmental policy is adopted in these systems, it occurs through a pattern of agenda formation that comparative policy theorist Roger Cobb and colleagues have labeled "the mobilization model." In this model, issue initiation originates with policymakers themselves or closely connected elites, issue specification is dominated by government leaders, and issue expansion is dominated by government promotion (Cobb, Ross, and Ross 1976, 132–33).

Yet another group of hypotheses concentrate on the bureaucratic impediments to formulating and implementing environmental policy in developing countries. Lack of material and information resources, bureaucratic politicization and weakness in the face of privileged parties and interest groups, administrative fragmentation, personalism and corruption, and discontinuous short-term policy development rather than long-term planning are some of the many factors affecting the development of environmental policy (Riggs 1967, 412–32).

Many, if not all, of these political constraints on environmental policy development are found in Mexico. Mexico's commitment to rapid industrialization since the 1940s and its concomitant dependence on the United States in political and economic affairs are well documented and need not be restated here (see Ojeda 1983, 315–30). Economic dependency undeniably has limited Mexican environmental policy. By the same token, Mexican environmental policy manifests aspects of a "demonstration effect" in response to U.S. precedents and pressures (Mumme and Nalven 1984).

The Mexican political system also exhibits all the structural features indicated above as obstacles to developing and implementing successful environmental policy. Nearly all political observers view Mexico's one-party system as a limited authoritarian regime defined by quasi-corporate institutional and political characteristics. Within this system, policy development is highly centralized and elitist, its patterns often resembling the mobilization model of agenda building described by Cobb, Ross, and Ross. Susan and John Purcell have observed that Mexican political elites "emphasize political control and prefer to limit behind the scenes decision making to as few participants as possible" (1980, 200). Policy analysts describe a pattern of policy formulation

dominated by senior officials in the principal ministries and agencies of Mexican government. In her study of the national staple products company, the *Compañía Nacional de Subsistencia Populares* (CONASUPO), Merilee Grindle found that “the demand-making behavior of citizens and parties in support of policy alternatives plays a very insignificant part in the development or approval of government plans. Neither recipient groups, legislative bodies, nor the mass media are initiators of attempts to bring about changes in government services, although they may be appealed to after a presidential commitment to a particular policy is made in order to demonstrate widespread support” (Grindle 1977, 109–10). Other scholars confirm this basic pattern (Cornelius and Craig 1984, 452; S. Purcell 1975, 131–45; Poitras 1973, 19).

Policy development and implementation in Mexico suffer from the bureaucratic maladies described by Riggs. Resource scarcity, personalism, and corruption are constants in public life (Riding 1984, 163–93; Purcell and Purcell 1980, 211; Grindle 1977, 36–40). Bureaucratic fragmentation and compartmentalization of decision-making authority at the uppermost levels of Mexican government produce intense bureaucratic infighting, duplication of functions, and policy incoherence (Purcell and Purcell 1980, 218; Spalding 1981, 149).

Regulatory policy (the category to which environmental policy belongs) is especially vulnerable to these bureaucratic weaknesses. Unlike distributive policy, which provides direct material inducements to generate compliance and therefore requires little direct coercion, regulatory policy is inherently coercive because it involves no direct material benefits, incurs substantial administrative costs, and generates greater incentives for conflict and noncompliance (Lowi 1970). High enforcement costs relative to available resources, powerful interest groups opposed to regulation, personalism, statutory ambiguity that blurs administrative jurisdictions, and weak judicial institutions all conspire to produce arbitrary, irregular regulation. Consequently, regulation has been viewed as a weak arena of policy performance in developing countries (Almond and Powell 1984, 121).

Regulatory policy in Mexico fits this paradigm. Purcell and Purcell note that Mexican regulatory laws tend to be “purposefully vague,” leaving the authority for implementation in the hands of the Mexican president. Even when implementing regulations (*reglamentos*) are issued, they are often general and applied in ad hoc fashion. Mexican regulatory policy therefore tends to be enforced indirectly, using persuasion and bargaining to achieve intended effects with targeted constituencies, and in a piecemeal fashion that manifests poor coordination and discontinuity in the implementation process (Purcell and Purcell 1977, 206–11). In this context, regulatory policy tends to resemble distributive policy, as officials seek to avoid confronting relevant interests

and apply sanctions on an ad hoc and preferential basis. Much Mexican regulatory policy is simply formalistic and symbolic, reflecting aspirations and ideals rather than real commitments.

The literature on Mexican governance has thus raised doubts about the prospects for environmental policy in Mexico. Recent developments, however, suggest that innovations are indeed underway. De la Madrid's new initiatives raise interesting questions concerning the character of Mexico's environmental policy, its origins, and its relationship to the political system. First, what is the source of Mexican environmental policy and has it changed since environmental matters initially drew public attention in 1971? Second, is environmental policy really on the agenda of the Mexican government, or is this latest initiative simply another exercise in symbolic politics? If environmental policy is on the agenda, how did it get there? Third, how does environmental policy implementation reflect the problems of bureaucratic underdevelopment in Mexico? As a classic type of "regulatory" policy, does environmental policy in Mexico exhibit some of the features of regulatory policy-making identified by Purcell and Purcell? What are the continuing impediments to effective policy implementation?

While this essay does not purport to answer all these questions fully, it attempts to illuminate them by examining the background of the current reforms, analyzing their content, and evaluating the present regulatory regime in the environmental arena in Mexico. A chronological and comparative approach reviews the development of environmental policy under the Echeverría, López Portillo, and de la Madrid administrations. This approach has been supplemented by an extensive inventory of articles in *Excelsior* during 1984 for purposes of analyzing the de la Madrid policy initiatives. In the concluding section, evidence from the Mexican case is brought to bear on the general propositions outlined above relating political development to the prospects for environmental policy in Mexico and Latin America.

MEXICAN ENVIRONMENTAL POLICY: FROM ECHEVERRIA TO DE LA MADRID

Mexican environmental policy as a distinctive body of law draws on antecedents in the late sixties and early seventies. The sources of innovation were both domestic and international. On the domestic front, the rapid expansion of the Federal District (Mexico City) from over three million inhabitants in 1960 to nearly seven million in 1970 drew public attention to the problems of urbanization and pollution. In the late sixties, however, it was uncommon to hear of organized public activity protesting environmental conditions. Mexico City newspapers cast the issue in terms of the pains of urbanization, seldom treating these conditions as a special class of environmental problems.

The principal impetus for governmental involvement in environmental issues came from a select group of academic and official research institutions attuned to international intellectual currents. Staffs of centers like the Instituto de Investigaciones de Derecho at the Universidad Nacional Autónoma de México (UNAM), engineers at the Instituto Politécnico Nacional, demographers at the Colegio de México, officials within the Ministry of Health, the Ministry of Industry and Commerce, and the Instituto Mexicano de Ingenieros Químicos all played a part in promoting public awareness and demanding greater government attention to these problems (see Cabrera 1976; Juergensmeyer and Blizzard 1973).

These domestic sources of attention to environmental issues were reinforced in the international arena. The U.S. adoption of the National Environmental Policy Act (NEPA) in 1969 aroused Mexican interest. Various U.S. organizations monitoring air quality were examined by Mexico City officials following the adoption of NEPA, and in 1970, a select group of government officials and academics visited U.S. environmental control facilities at the invitation of the U.S. Embassy (Juergensmeyer and Blizzard 1973). Mexico was also invited to participate in the UN Conference on the Human Environment in 1972. Mexico hosted one of the four preliminary regional meetings on environment and development in the summer of 1971, thus raising public awareness of the issue further (Chávez González 1976, 191; Kay and Skolnikoff 1972, 74).

Although Luis Echeverría Alvarez had not included environmental problems in his 1970 presidential campaign, his administration became receptive to these incipient demands for environmental regulation shortly after he assumed office in December 1970. Juergensmeyer and Blizzard note that policy reform was "spearheaded by a group of deputies from the Federal District" (1973, 105). In the spring of 1971, two major initiatives were undertaken. The first entailed revising Article 73, Section 4, of the Mexican Constitution, which deals with health, to include references to environmental contamination (published 6 July 1971). The second initiative enacted an ordinary statute (*ley ordinaria*) entitled *La Ley Federal para Prevenir y Controlar la Contaminación Ambiental* on 23 March 1971. The constitutional amendment empowered an extant institution, the federal Consejo de Salud, to prescribe a legal procedure for addressing problems of environmental pollution. The new law provided formal bases for the executive branch to enact and implement reglamentos in the environmental area, entrusting general administration to the Secretaría de Salubridad y Asistencia (SSA). A broadly gauged statute covering air, water, soil, and sanitation, the law amounted to "an organic statute which, in and of itself, [did] no more than establish an administrative regulatory power under the di-

rection of the Central Government" (Juergensmeyer and Blizzard 1973, 113).

To implement the new law, the Echeverría administration promulgated two new reglamentos in 1971 and 1973. In September 1971, the Reglamento para la Prevención y Control de la Contaminación Atmosférica Originada por Humos y Polvos addressed aspects of ambient air-quality problems, prescribing antipollution controls in industry and tax incentives for adopting such controls and also authorizing the regulation of vehicular emissions (Cabrera 1976, 307). In March 1973, the Reglamento para la Prevención y Control de la Contaminación de Aguas went further in specifying standards for the water quality of surface and coastal water, establishing penalties for violations, providing for functional administration by the SSA and the Secretaría de Recursos Hidráulicos (SRH), and creating a provision for "popular action" that would allow ordinary citizens to file violation complaints with the appropriate agency in order to trigger investigations (SRH n.d., 41; Cabrera 1976, 307).

The Echeverría administration also sought to coordinate legislation in related spheres to achieve the objectives of the environmental law. In 1973 the new sanitary code and its supplementary regulations were tailored to implement aspects of the environmental law (Chávez González 1976, 296). The Ley Federal de Ingeniería Sanitaria was also amended to incorporate environmental considerations, as were other statutes dealing with water, forestry, and wildlife (Cabrera 1976, 305–8; Ruiz 1976, 319; Chávez González 1976, 297). Finally, the language of environmental regulation was applied in the area of urbanization, as the Echeverría administration took initial steps to encourage the decentralization of industrial development and human settlement (Cabrera 1976, 309).

On the administrative side, the presidential decree of 29 January 1972 created a new agency within the SSA, the Subsecretaría de Mejoramiento del Ambiente (SMA). This agency was charged with implementing the 1971 environmental law and coordinating the actions of other government agencies in this sphere (Cabrera 1976, 308; Chávez González 1976, 295). Staffed largely with medical personnel from the SSA, the new agency was oriented toward public health and education, although it was also entrusted with enforcing the SSA's environmental sanctions, licensing new industry, and otherwise taking the lead in investigative and regulatory affairs.

Despite these initiatives, environmental policy continued to be a low priority on the Echeverría policy agenda and to suffer from a number of serious weaknesses. First, at no time during the Echeverría *sexenio* did environmental problems receive high-level presidential attention. The policy initiatives, such as they were, originated from the

middle and upper ranks of the government's techno-political elite, as well as from the professional institutions serving these officials in the public sector. Nor were environmental issues treated as a distinct class of problems in the realm of Mexican social policy, judging by the categorization and emphasis given such issues in high-level policy pronouncements.²

Second, the new environmental laws were comprehensive in scope, general in content, and sensitive to Mexico's emphasis on economic development. Environmental issues were framed in the language of "ecology," which extended to virtually every facet of human interaction with the natural environment. The scope, however, tended to deemphasize contamination per se while making environmental improvement a symbolic obligation extending across Mexican society, with responsibility being highly diffused. Moreover, environmental improvement was not construed as inimical to economic development but as requiring economic development. Thus Mexico's statutory emphasis on environmental regulation stressed a preventive or planning approach to environmental amelioration instead of enforcement (Cabrera 1978, 33).

This orientation was demonstrated by the activities of the SMA during the Echeverría sexenio. Faced with a dearth of information on environmental conditions, the SMA mainly attempted to educate the public, train technical specialists in environmental fields, collect data on environmental pollution, and represent Mexico in international forums and conferences (Chávez González 1976, 295). Actual regulation was avoided, except a few minor fines and temporary closures of facilities in Mexico City (Cabrera 1978). Moreover, the actions of the SMA remained centralized and generally confined to large urban areas, mainly Mexico City.

Third, despite the creation of the SMA, administration remained fragmented and the vagueness of the legislation impeded enforcing sanctions. Aspects of the 1971 law were to be administered by at least five separate cabinet-level ministries, including the SSA, the SMA, the SRH, and the Secretariats of Industry and Commerce, Agriculture, and the Navy, supplemented by other autonomous agencies like *Petróleos Mexicanos* (PEMEX) and by certain implied responsibilities for states and municipalities. Such policy disaggregation created serious ambiguities in jurisdiction and functions. The broad grants of authority to administrative agencies also confounded using the courts as a civil remedy for injurious pollution effects. As one analyst noted, under Mexico's civil code, the lack of specific statute gives administrators wide discretion in determining rules but hinders determining injury and recovery of damages (Cabrera 1978, 34–37).

These characteristics continued to define environmental policy

under the administration of José López Portillo (1977–1982), with few exceptions. At the outset, the SMA was reorganized into three quasi-autonomous subunits dealing with air, water, and soil pollution, ostensibly realigned to delineate and strengthen administrative responsibility (Phillips 1978, 4). Partly in response to U.S. pressures, the López Portillo administration established an intersecretarial commission for environmental health in August 1978 to coordinate with the Consejo Nacional de Salud and other agencies in formulating environmental policy (Secretaría de Marina n.d., 1). Beyond this action, no substantially new initiatives were undertaken until the last year of López Portillo's presidency except for several initiatives resulting in part from U.S. pressure. This administration faced a substantial increase in environmentally motivated public protest, however, due to worsening domestic environmental conditions. By the end of the López Portillo administration, a major revision of the environmental law had been undertaken, partly in response to this increased popular pressure.

U.S. influence on Mexican environmental policy stemmed from several sources. After 1976 a number of border sanitation problems were placed on the binational agenda. In addition, increasing concern with air pollution in the United States brought issues regarding border air quality to the attention of the U.S. Environmental Protection Agency. These issues became agenda items at the binational level when they were included as part of the U.S.–Mexican Consultative Mechanism's functional negotiations after 1977. In 1979, in direct response to the threat posed by the huge oil spill created by the blowout of Ixtoc-I (a PEMEX oil well located in the Bahía de Campeche), the United States pressed Mexico through the consultative mechanism to agree to binational management of future spills. These initiatives led to several binational agreements and highlighted U.S.–Mexico transboundary environmental problems (Mumme and Nalven 1984).

Domestic developments also provoked government action. Rapid development of the oil fields in the Gulf of Mexico after 1977 led to large-scale deterioration of marine and land resources, contamination of rivers and estuaries, deforestation, erosion, and other environmental problems. By 1979 mass *campesino* protests against PEMEX (many ad hoc, but some organized by opposition political parties and renegade PRI agrarian leaders) were occurring frequently in the oil zone (Millor 1982, 162–63). These activities received wide press coverage, which embarrassed the government. Urban congestion and air pollution in the Federal District also received greater publicity.

In response, environmental considerations were written into the López Portillo administration's Plan Nacional de Desarrollo Urbano (1978), Plan Nacional de Desarrollo Industrial (1979), and Plan Global de Desarrollo (1980), all emphasizing the need to decentralize industry,

administration, and population away from the major Mexican urban centers. As part of the national urban plan, a new Dirección General de Ecología Urbana was created within the Secretaría de Asentamientos Humanos y Obras Públicas (SAHOP) and was charged with programming environmental considerations into future urban planning (Phillips 1979, 4–5).

With respect to air pollution, the government undertook a major initiative in 1978 to monitor and regulate air quality in Mexico City, including an ambitious plan for regulating industrial emissions under hazardous air-quality conditions (Phillips 1978, 4). But dissatisfaction with the level of government support led to the mass resignation of ninety *técnicos* in the air-quality department of the SMA in 1979, effectively terminating the monitoring effort until late 1982 (*Mexican-American Review* 1983, 24; Leonard and Morell 1981, 288). By 1980 professional as well as civic groups in Mexico City were vocally criticizing the government's regulatory performance. Reports from the Centro de Ciencias Atmosféricas at UNAM suggested that air pollution had increased 80 or 90 percent between 1976 and 1980 (*Comercio Exterior* 1980b, 210). These findings prompted the Comisión Intersecretarial de Saneamiento Ambiental to propose a set of regulatory guidelines for reducing air pollution in the Valley of Mexico (*Comercio Exterior* 1980a, 50). The SMA also sought the cooperation of private bus owners and the government-owned fleet, Diesel Nacional, to reduce noise, dirt, and smoke emissions in the Federal District. Mass protests by labor and civic groups over dangerous levels of toxic particulates emitted by cement plants and other industries in the Mexico City area further prodded the SMA to conduct an investigation that led to the closure of five plants in February and March of 1981 (*Comercio Exterior* 1981a, 93; 1981b, 93; Leonard and Morell 1981, 290).

Such conditions and demands helped fuel the adoption of several new initiatives by the López Portillo administration in 1981–82. These reforms included several reglamentos establishing the Fondo Nacional para Prevenir y Controlar la Contaminación Ambiental, which was to provide preferential financing for small and medium-sized industries to enable them to adopt antipollution equipment (funded partly by a sixty-million-dollar loan from the World Bank), as well as creating an urban greenbelt (ecology zone) in the Federal District (*Comercio Exterior* 1981c, 316; 1982a, 428; 1982b, 428). By far the most significant undertaking was the revision of the 1971 environmental law during the summer and fall of 1981.

The López Portillo administration's decision to revise the 1971 law after a decade of trial reflected growing professional and public awareness of the ineffectiveness of Mexico's environmental policy per-

formance.³ In 1980 a national congress on environmental problems in Mexico was convened in Mexico City by the Escuela Nacional de Ciencias Biológicas of the Instituto Politécnico Nacional. Its final report causally evaluated the government's achievements in the preceding decade, concluding that "the Federal Law for the Prevention and Control of Environmental Pollution presently in place is a dead letter in 90 percent of its ordinances or highly inefficient in application" (Ojeda Mestre 1983, 27). The report called for wholesale revision of the law to attune it to Mexican realities as well as a significant stiffening of penalties and enforcement.

The new law promulgated in January 1982 substantially reinforced the earlier document. Among its principal amendments and additions were new chapters addressing problems of marine pollution (chapter 4), radioactive hazards (chapter 8), noise (chapter 6), and the contamination of foodstuffs (chapter 7). Individual chapters on air, water, and soil contamination (including hazardous wastes) were substantially strengthened in scope and specificity. The law established new penalties and stiffened extant penalties for violators, raising maximum fines from one hundred thousand pesos to four and a half million pesos (chapter 10). Finally, a significant innovation comprising chapter 12 established new provisions for "popular action," thus creating a procedure for filing public complaints and initiating action against alleged violators by mandating official SSA investigation and public hearing of each issue. Although these changes represented an elaboration of the less detailed provisions in the 1971 law, the heightened priority given to this function reflected a partial response to criticisms of the government's unresponsiveness to public complaints under the earlier legislation.⁴

The new environmental law and a subsequent revision of air-quality regulations in the fall of 1982 comprised major innovations in Mexican environmental policy. By the end of the López Portillo administration, however, environmental policy still remained low on the administration's active policy agenda. Despite the new law, professional observers were labeling the environmental program a failure (*Mexican-American Review* 1983, 24).⁵ Most telling was the fact that, excepting references in the planning documents mentioned above, environmental policy was never mentioned in the president's major policy speeches nor actively promoted at the national level. Instead, it remained the bailiwick of middle-level government planners, university researchers, and professional organizations, most of them centered in Mexico City. Also, the popular action then occurring was largely ad hoc protest rather than a systematic, well-organized popular movement.

DE LA MADRID AND ENVIRONMENTAL MOBILIZATION

Beginning with his presidential campaign in 1982, Miguel de la Madrid set out to alter the agenda status of environmental policy in Mexico. The national plan for the de la Madrid presidency expressly acknowledged the failings of previous administrations and pointed to several problems: failure to assess adequately the environmental impact of development projects; inadequate technology for dealing with different ecological systems; irrational exploitation of natural resources; an absence of public environmental conscience; lack of a clear juridical regime; and lack of financial and administrative resources to deal with environmental problems (Bath 1984, 15). The de la Madrid strategy for rectifying these failings included three basic components: developing a strategy of popular mobilization, strengthening environmental statutes and better coordinating administrative responsibilities in this sphere, and improving performance in the regulatory arena.

Popular Mobilization

The de la Madrid administration undertook an intensive set of actions aimed at mobilizing and sensitizing the public to environmental issues. The initial restructuring of the Mexican cabinet indicated the heightened political priority attached to environmental concerns. De la Madrid combined the portfolios for housing and environment into a single cabinet-level ministry, the Secretaría de Desarrollo Urbano y Ecología (SEDUE). The new ministry's mandate embraced that of its predecessor, SMA, but also incorporated units of SAHOP and the Secretaría de Agricultura y Recursos Hidráulicos (SARH) and extended coordinating authority over environmentally related functions of other agencies.⁶

Beginning in March 1983, SEDUE undertook a nationwide series of popular forums on ecological problems to inform the public of the government's new emphasis on environmental improvement and to solicit public input on environmental concerns relating to various regions and municipalities. These perspectives were to be integrated into short-, medium-, and long-term environmental plans by SEDUE (SEDUE 1983a, 57; 1983b, 45).⁷ These *foros de consulta popular* were followed by twenty-seven state conferences and five regional conferences in 1983–84. The state and regional conferences brought together local political leaders from the PRI's sectors, government officials, scholars from the state universities, and citizen groups to discuss the new environmental program and identify environmental problems.⁸ Paralleling these conferences, a series of four regional conferences were convened by the ecology and environment committee of the Cámara de Diputados focusing on legislative issues in the functional areas of air quality,

water quality, energy development, and soil contamination (SEDUE 1983c, 1983d). These conferences received wide press coverage dramatizing environmental themes. The last regional conferences on general and legislative themes were timed to conclude on the eve of the Primera Reunión Nacional de Ecología (5 June 1984), thus climaxing the mobilization initiative.⁹

The government also incorporated environmental themes into major policy statements and national plans. An ecology section was included in the de la Madrid administration's Plan Nacional de Desarrollo for 1983–1988 with the acknowledgment that “for the first time a national development plan explicitly incorporates ecological and environmental considerations into its development strategy” (*Mercado de Valores* 1983, 124–29). The platform of the PRI also incorporated a commitment to environmental improvement.¹⁰ Environmental issues were singled out for discussion in de la Madrid's annual state of the nation addresses. Speaking before the Mexican Congress in September 1983, de la Madrid asserted, “the magnitude of our environmental problems seriously endangers the development of our natural resources and our quality of life,” and he went on to state that “in the recent program of popular consultation, it became evident that ecological concerns in Mexico have ceased to be an exclusive preoccupation of researchers and scientists and have become a daily demand of the Mexican people.”¹¹

The popular mobilization phase culminated with the Primera Reunión Nacional de Ecología and the national Semana de Ecología, which were timed to coincide with the UN's World Ecology Day (5 June 1984). These events brought together representatives of all the government cabinet departments, autonomous agencies, sectors of the PRI, the main private-sector organizations, and environmental interest groups throughout Mexico. A succession of speakers characterized Mexico's environmental situation in apocalyptic terms. Oscar Cantón Zetina, president of the environmental committee of the Cámara de Diputados, blamed the ecological “crisis” on an “absurd strategy of industrial development that does not take into account the need to preserve a safe and clean environment . . . and tolerates polluters with impunity, preferring employment and economic utilities to a minimum standard of air, water, and environmental quality.” Others, including the directors of state industries and private-sector officials, counseled a restrained regulatory environment that would not treat development as inimical to environmental well-being. SEDUE Director Marcelo Javelly Girard argued against both a “vision of catastrophe” and “a triumphal attitude that fails to recognize the real gravity of the dangers.”¹²

At the conclusion of the five-day congress, President de la Madrid told the participants that environmental improvement first re-

quired an informed public awareness of environmental problems, asserting, "I believe we have now achieved it."¹³ Two months later, de la Madrid announced the new Programa Nacional de Ecología for the years 1984 through 1988 as part of the government's emphasis on environmental preservation (*Mercado de Valores* 1984, 892–93).¹⁴

The relative success of the popular mobilization initiative can be seen in the increasing publicity and interest-group activity on the environment since 1983. Media attention to environmental subjects rose significantly in 1983 and 1984 in response to the popular mobilization and increasing government activities in this sphere (683 articles on environmental subjects appeared in *Excélsior* in 1984).¹⁵

Popular mobilization also fostered the formation and proliferation of environmental interest groups. Prior to 1980, the few existing interest groups were largely confined to professional associations, but by 1984, several hundred interest groups were focusing on environmental themes.¹⁶ The phenomenal profusion of interest groups attracted media attention. In an editorial entitled "Surgen en México los ecologistas," *Excélsior* hailed this development as "an example for all Mexicans of genuine pacific activism on behalf of great causes."¹⁷ While many of these groups formed "spontaneously" after 1982, others were a direct outgrowth of the government's popular mobilization program. Several national associations of environmentalists formed in the spring of 1984. The Movimiento Ecológico Mexicano (MEM) united sixty-three national and regional environmental organizations,¹⁸ and the Alianza de Ecologistas Mexicanos (AEM) affiliated a number of groups mostly centered in Mexico City.¹⁹ The proliferation of interest groups was accompanied by an increase in organized protest and lobbying activity that was coordinated with the government's regional and national environmental conferences in 1984, including several large rallies staged in Mexico City in May, June, and July.

The predominant role of the government in promoting popular mobilization, interest-group formation, and interest articulation is suggested by our newspaper survey (see table 1). Of the 181 references to environmental interest articulation in 1984, nearly half (83) involved a political party or government agency. The party mentioned predominantly was the PRI. A more indirect indicator was the number of references to government agencies. Of 475 agency references, SEDUE was mentioned most often (130 times), a rough measure of its role in keeping environmental issues before the Mexican public.

Although the intensive phase of popular mobilization ended with the Primer Reunión Nacional de Ecología in June 1984, the "popular consultation" process and environmental education have remained basic elements of the government's reform package. Provisions for "popular action" in the 1982 environmental law and for popular consul-

TABLE 1 *Articulation of Environmental Interests and Government Agency References in Excélsior in 1984*

<i>References to Interest Articulation Sources</i>		
<i>Source</i>	<i>Number</i>	<i>Percentage</i>
Interest Group	87	48
Political Party	65 ^a	36 ^a
Government Agency	18	10
University or Research Institution	11	6
Total	181	100

^aOf the total references to political party, 38 refer directly to the PRI (58 percent of the party references and 21 percent of all interest articulation references).

References to Government Agencies

<i>Agency</i>	<i>Number</i>	<i>Percentage</i>
Secretaría de Agricultura y Recursos Hidráulicos (SARH)	41	9
Secretaría de Desarrollo Urbano y Ecología (SEDUE)	130	27
Secretaría de Salubridad y Asistencia (SSASSA)	54	11
Petróleos Mexicanos (PEMEX)	75	16
Secretaría de Pesca	9	2
Secretaría de Asentamientos Humanos y Obras Públicas (SAHOP)	2	1
Departamento del Distrito Federal (DDF)	31	7
Secretaría de Marina (SM)	6	1
Other agencies	127	26
Total	475	100

tation in urban planning have intensified civic involvement in environmental affairs. This new sensitivity has generated support for official activity in this area but has also become a source of serious criticism as the government, confronted with the economic depression after 1982, has failed to respond effectively to activists' demands.

Statutory and Administrative Reform

Another dimension of the de la Madrid environmental program has been statutory and administrative reforms. As noted, by 1982 the government's existing administrative program had spawned wide-

spread disillusionment. The de la Madrid administration consequently sought to address criticisms with a substantial administrative reform and further statutory innovations.

The main thrust of administrative reform has been creating SEDUE and elevating "ecology" to cabinet status. While a symbolic change in some respects, the reformed administrative structure has undergone several significant modifications. An important functional change was subsuming "ecological" and "environmental" functions into SEDUE's Subsecretaría de Ecología. This change effectively consolidated within the new subsecretariat several so-called ecological functions previously centered in SAHOP and SARH. Under the new system, the three subunits of the old SMA were reorganized into the six subunits of Prevention and Control of Environmental Contamination, Prevention and Control of Water Contamination, Ecological Law and Environmental Impact, Parks and Protected Ecological Zones, Ecological Protection and Restoration, and Wildlife.

The government also sought to involve cities and states in environmental planning. A major reform of Article 115 of the Mexican Constitution was undertaken in the fall of 1984 to promote the government's program of administrative decentralization, and it yielded a provision enabling states and *municipios* to appropriate land for urban open space and greenbelts.²⁰ A related reform encouraged states and *municipios* to incorporate ecological considerations into urban planning.

The de la Madrid administration also undertook yet another revision of the 1982 environmental law. Taking effect 17 January 1984, the revised law empowered SEDUE to coordinate the activities of other executive agencies in the environmental area—a significant improvement over the vagueness of the 1971 and 1982 documents (*Diario Oficial* 1984, Article 5). All government departments were directed to cooperate with SEDUE "within their competence and in conformity with its technical guidelines, and to study, plan, program, evaluate, and classify [their operations] to prevent problems related to environmental pollution" (*Diario Oficial* 1984, Article 6). The amended law also authorized SEDUE to enter into agreements with states and *municipios* relating to environmental control (*Diario Oficial* 1984, Articles 6, 13, 35). Regulation of hazardous and toxic substances was specified in greater detail (*Diario Oficial* 1984, Articles 15, 21, 22, 34, 35, 36). Finally, the revised law further stiffened the sanctions against violators by increasing fines and providing for up to three years of imprisonment for serious violations (*Diario Oficial* 1984, Article 76).

Additional provisions were included in the new Nuclear Regulatory Law of December 1984. This law reinforced provisions in the environmental law by specifying higher standards of supervision, accountability, and handling of these materials.²¹ These regulatory changes

significantly strengthened the existing environmental law and administrative apparatus. The reform measures, however, failed to satisfy many critics. Despite the consolidation of authority, administration remained fragmented. Subsidiary functions were still designated to the SARH, the SSA, the Secretaría de Comercio y Fomento Industrial, the Secretaría de Comunicaciones y Transportes, the Secretaría de Hacienda y Crédito Público, the Secretaría de Energía, Minas e Industria Paraestatal, the Secretaría de Marina, the Secretaría de Pesca, and the Secretaría de Gobernación—in short, to almost every cabinet department in the Mexican government. Because many of the new reforms were novel and entailed much interagency coordination in planning and implementation, many jurisdictional and operational ambiguities still needed to be reconciled in practice. From the perspective of many critics, the new law and administrative reforms remained a “list of good intentions” that lacked serious commitment to implementation.²²

Implementation

As has been shown, the de la Madrid administration's commitment to environmental reform was a response to growing criticism of the policies of its predecessors. SEDUE officials were sensitive to this criticism and repeatedly argued that the new policy was more than symbolic reform, that it involved a serious commitment to environmental improvement over the long term. Unfortunately, the government's record fails to bear out this argument. In raising popular consciousness and in certain substantive areas, however, the government has made limited commitments that are a modest improvement when compared with the performance of de la Madrid's predecessors.

It is beyond the scope of this essay to assess adequately the effectiveness of the government's actions, but some indication of its intentions can be gleaned from its own performance claims. De la Madrid has noted several achievements in his annual addresses on the state of the nation since 1984: new and continuing programs to rehabilitate river basins; substantial investment in wastewater and solid waste treatment and disposal; improvements in industrial and vehicular fuels to reduce air pollution in Mexico City; restrictions on industrial siting, relocation of hazardous industries, and new surveillance and pollution monitoring measures in Mexico City, Guadalajara, and Monterrey; numerous interagency agreements between SEDUE and other government entities aimed at pollution abatement; reforestation initiatives; creation of new national ecological reserves and sanctuaries as well as improvements in managing national parks and reserves; and new environmental agreements with the United States (*Comercio Exterior* 1984, Span. ed.).²³

As the President's messages indicate, regulatory activities have

been concentrated in urban areas, mainly in the Federal District, Guadalajara, and Monterrey, as well as in the border areas and those most affected by petroleum development (*Mercado de Valores* 1983, 125). In Mexico City, one of the first initiatives of the de la Madrid administration was to implement the emergency monitoring system of urban air quality promised three years earlier by the López Portillo government (*Mexican-American Review* 1983, 24). Regulation has also centered on those areas where the economic costs of pollution are injurious to other productive functions, such as the fishing industry and tourism. For example, the government has imposed sanctions on private fishing vessels polluting the water of Acapulco and elsewhere and has begun to set quotas on harvests of certain species of fish in the Gulf of California.²⁴ The government is also trying to reduce pollution in the nation's twenty most contaminated river basins as well as in scenic lakes like Patzcuaro and Chapala. Such programs typically entail investments in wastewater processing facilities and are piggybacked where feasible on top of existing commitments to urban development.

As yet, however, the government's commitment to serious regulatory action has been feeble. The newspaper inventory (table 2) revealed few actions of a coercive nature in 1984, only sixteen in all, including the threat of sanctions. The preponderance of reported actions have been policy announcements and investments in antipollution equipment and facilities. While the survey is not an inventory of the government's actual regulatory activity, it does suggest the hierarchy of priorities operating.

Weak regulatory performance reflects both circumstantial problems and actual priorities. Mexico's economic crisis since 1983 has sharply reduced investment in environmental programs, placing expensive regulatory projects on the back burner. Javelly Girard, Secretary of SEDUE from 1983 to 1985, conceded as much in a news conference on 16 November 1984: "The selective credit policy of the Bank of Mexico has not directed revenues to ecology, and for that reason we lack the instruments necessary to fight pollution."²⁵ SEDUE's 1983 budget for pollution control and ecology totaled seven million dollars, some 2 percent of the department's entire allocation (SEDUE 1983a, 26–27). SEDUE's budgetary constraints have made it highly dependent on other government departments and agencies for project implementation. For example, PEMEX's 1984 budget for sewage and pollution control was nearly six times as large as SEDUE's environmental budget (*Comercio Exterior* 1984, Span. ed.).

The government's regulatory priorities are not wholly circumstantial, however. They also reflect the nature of Mexico's approach to environmental regulation. Instead of relying on sanctions and costly abatement programs, the government has opted to approach abate-

TABLE 2 *Regulatory Actions Reported in Environmental Articles in Excélsior in 1984.*

<i>Type of Government Action</i>	<i>Number</i>
Education	7
Study or analysis	14
Regulatory action	105
Fine	6
Closure	2
Sanction or threat	8
Investigation	9
Policy announcement	43
Investment	23
Other	14
Planning	6
Foreign relations (U.S.)	17
Interagency affairs	5
Other	20
Total actions	174

ment through planning, bargaining, education, data collection, and incentives. One program undertaken since 1983 has been the signing of compacts of agreement between SEDUE and other governmental agencies, most particularly parastatal industries, some of which (PEMEX, AZUCAR, S.A., FERTIMEX, and the Comisión Federal de Electricidad) are the largest sources of industrial pollution in Mexico. Many of these agreements are little more than statements of intent, although public pressure has forced some action against operations by PEMEX and the sugar and fertilizer industries (SEDUE 1983a, 58).²⁶

SEDUE has also sought similar understandings with private-sector firms. In December 1984, SEDUE reported discussions with some sixteen hundred industries, including firms in the cement, petrochemicals, sugar, lumber, and paper industries, for the purpose of encouraging them to adopt pollution abatement technologies. While the agency reported satisfactory progress, little material evidence of success has emerged to date.²⁷

SEDUE officials themselves have admitted their unwillingness to penalize seriously those who violate environmental laws. Alicia Barcena, former Director of the Subsecretaría de Ecología within SEDUE, repeatedly disavowed any police function for the agency: "We don't want closed industries. We are managers of the environment, but even so we are obligated to approach a solution with industrial firms by means of credits, incentives, and the training of their personnel."²⁸ In an interview with the daily *Unomásuno*, Barcena stated, "We do not

view ourselves as discharging a regulatory role." She went on to affirm SEDUE's priorities as identifying problem areas, developing an inventory of environmental hazards, and attempting to develop low-cost planning solutions that avoid creating environmental problems in the future while working with both public and private-sector entities to secure voluntary compliance with Mexico's environmental standards.²⁹ Ironically, officials in the the Federal District department (which is formally subordinate to SEDUE in this area) have at times pressed harder for imposing sanctions on urban polluters than have the officials at SEDUE.³⁰

In this regard, SEDUE officials are clearly leaning on urban planning, particularly the government's commitment to urban and industrial decentralization, as part of the environmental solution in Mexico. Unfortunately, planning by disaster has prevailed instead, as witnessed by the disastrous explosion at the PEMEX gas plant in November 1984. That incident ultimately cost the government many times the 1983 environmental budget, and as a result, the government reluctantly agreed to relocate certain hazardous industries outside the immediate metropolitan area.³¹

AN ASSESSMENT OF MEXICO'S ENVIRONMENTAL POLICY

Returning to the questions posed at the outset, what does this review of the development of Mexico's environmental policy reveal about the relationship between political development and environmental policy-making in Mexico? What implications are inherent for environmental policy-making in Latin America?

First, as to the sources of Mexican environmental policy, it is clear that environmental policy has elite origins in Mexico as elsewhere in the Third World and that Mexico has been susceptible to the "demonstration effect" and to U.S. influence in developing its environmental policy. Mexican environmental policy in the Echeverría and López Portillo administrations was largely a symbolic, prestige-oriented policy aimed at international recognition but lacking capacity and commitment to implementation. In the realm of policy development, a number of policy measures in the 1970s responded to U.S. pressures for ameliorative action along the U.S.-Mexico border. More research is needed, however, on the specific effects of dependency on environmental policy-making and the weighing of priorities in Mexican environmental decision making.

Second, it is also evident that Mexican environmental policy reflects the political and bureaucratic stamp of Mexico's one-party-dominant, limited authoritarian polity. Environmental protection is now plainly on the agenda of Mexican politics. In contrast to earlier adminis-

trations, de la Madrid's sexenio has focused presidential attention on the issue, substantially upgrading the amount of formal attention and modestly improving the level of practical attention to environmental problems.

The process by which environmental protection achieved agenda status fits well within the mobilization model of agenda building associated with single-party-dominant authoritarian systems. Environmental policy was almost exclusively an elite preserve in the early 1970s. While some urban professional and bureaucratic interests had pressed for issue recognition in the 1960s and early 1970s, formal initiation centered within the Echeverría administration in response to the UN's environmental initiatives. Subsequently, however, interest-group pressure to implement environmental policy failed to gain the support of ranking political elites in both the Echeverría and López Portillo administrations. The issue was reinitiated by the de la Madrid administration in its electoral campaign of 1982 when, for the first time, the matter achieved a substantial place on the formal agenda of Mexican government.

Issue specification was likewise dominated by government officials within the newly established environmental ministry, SEDUE. As has been shown, this ministry has monopolized the process, which has consisted of redrafting extant environmental legislation at the national level, coordinating national and state agencies, and promoting popular mobilization. Outside interest groups have exercised little independent initiative in this process.

Expansion of the issue, or promoting the issue into public awareness, also follows the mobilization model. The process of popular mobilization initiated by the de la Madrid administration has manifested strong elements of corporatist control and tutelage. In its intensive program of *foros de consulta popular*, the government has sought to develop public awareness and responsiveness to environmental concerns and thus has played a central role in legitimizing this set of issues. In contrast to previous administrations, it has encouraged interest-group activity, which for the first time has acquired a mass-based populist character—although it is still predominantly urban. These groups are better organized, more diverse in membership, and less ephemeral than the ad hoc actions of professional groups and bureaucratic interests of the past. As a result of the popular mobilization, the issue of the environment is no longer an exclusively elite preserve because environmental concerns have been embraced by middle- and lower-class interests—even campesinos have learned to use environmental rhetoric to legitimize demands on the political system. Still, environmental groups remain politically weak due to the lack of independent legislative policy leverage. Attention is focused on SEDUE and other federal administrative bodies, and demand making still takes the form of supplication and

persuasion, the petitionary pattern characterizing most interest articulation in Mexico. Given this dependent relation of groups to government bureaus, it remains to be seen whether environmental interests will become more institutionalized and influential in subsequent sexenios or whether withdrawal of tutelage by a less environmentally inclined administration will seriously injure Mexico's new environmental movement.

Third, Mexican environmental policy under de la Madrid continues to manifest the problems of bureaucratic underdevelopment identified by general theorists like Riggs (1967) and Purcell and Purcell (1977, 1980). Environmental policy suffers from resource constraints, statutory and jurisdictional ambiguities, administrative fragmentation, and poor policy integration. Formal administrative reform is the principal contribution of the de la Madrid administration to advancing environmental policy in Mexico. Integrating functions within the new environmental ministry and its enhanced responsibility for coordinating environmental affairs, together with the strengthened environmental law, constitute real improvements in the structure of environmental administration.

Major weaknesses remain, nonetheless. The disruptive cycle of Mexican presidential politics encourages a short-term administrative outlook and undercuts long-term planning. For instance, the restructuring of the SMA under de la Madrid resulted in the mass reassignment of agency employees and provoked criticism that SEDUE's new administrators failed to build on cumulative expertise acquired by SMA personnel over the previous decade.³² Budgetary allocations, reflecting the real crisis posed by the present economic situation, have yet to cover investments much beyond administration. Many of the funds committed to various projects (except for data collection, education, and other administrative tasks) are intersectoral in nature, meaning that fiscal authority is centered in other agencies. Until SEDUE is granted greater authority over its own budget and is allocated more resources, its regulatory efforts will continue to be feeble.

The continued dispersal of administrative responsibility throughout the Mexican government ensures policy fragmentation and jurisdictional ambiguity even when policy authority is centered in SEDUE. Moreover, SEDUE must still depend on powerful and virtually autonomous agencies for effective implementation. Under the present system, government entities like PEMEX and the Comisión Federal de Electricidad are entirely responsible for their own environmental activities, aside from the fact that they operate within the context of their compact with SEDUE. Lack of administrative control and mechanisms for enforcement continue to plague effective implementation. In this regard, it remains to be seen how states and municipalities will be integrated

into the overall pattern of administration because the 1984 amendments to the Environmental Law remain ambiguous as to lines of accountability.

The list compiled by Susan and John Purcell of structural problems associated with Mexican regulatory policy is especially evident in this area, one of the newest and least institutionalized arenas of regulatory policy in Mexican government. The government has sought to defer the high costs of environmental regulation by responding to demands for ameliorative action primarily through rhetorical or symbolic reform. It has opted for low-cost future-oriented solutions in planning and development. The main lines of this approach were established by earlier administrations and have not changed under de la Madrid.

Project implementation remains ad hoc and piecemeal. Consistent with the higher priority that environmental problems have received, the de la Madrid government has selectively targeted projects within an overall structure of priorities set out in the Plan Nacional de Desarrollo and the Plan Nacional de Ecología. Such projects as air-quality monitoring in Mexico City and PEMEX's investments in wastewater treatment along the Gulf Coast are substantively and symbolically important but remain in incipient stages. They must be proven effective. Moreover, they are directed at politically significant urban populations and represent only a fraction of the various eligible projects within the broad scope of the government's plans. They thus fit the pattern characteristic of Mexican regulatory agencies.

Environmental regulation has also displayed noncoercive distributive characteristics. Rather than imposing sanctions and costs on important economic interests, the government (with somewhat greater initiative under de la Madrid) has sought to employ persuasion and positive incentives (low-interest loans on antipollution equipment and tax incentives) to induce compliance with environmental regulations. In the public sector, the government has enjoyed greater leverage with parastatal industries, in extracting compliance commitments, which are largely low-cost or temporary solutions to environmental pollution. In the private sector, however, little evidence exists to suggest that the soft sell has been taken seriously.

In sum, the Mexican experience with environmental policy supports a number of conventional hypotheses concerning the origins of environmental policy in Latin American countries. Similarly, it substantiates the existence of key policy constraints arising from the nature of Mexico's "limited authoritarian" political system. Mexican policy development from Echeverría to de la Madrid exhibits pronounced mobilization characteristics associated with closed political systems. While public awareness of environmental issues and the organized articulation of environmental demands are promoted by the government, organized

interests remain dependent on government sanction and lack policy leverage. Policy implementation remains largely symbolic and projective, focusing on fomenting public awareness of environmental problems and integrating ecological considerations into future planning. Regulation is likely to remain ineffective because of the problems presented by bureaucratic underdevelopment, which are currently being aggravated by economic crisis.

Nevertheless, environmental policy has undoubtedly gained a permanent place on the Mexican policy agenda. This fact alone challenges the view that environmental issues cannot gain a foothold on national policy agendas in Latin America. Insofar as governments choose to promote popular awareness of environmental issues, these interests may become legitimate public demands. In the Mexican case, the government has succeeded at this level, and increasing evidence suggests that environmental interests are linking political interests across class and region. As often happens in other issue areas, such populist concerns—once legitimized—are difficult to defuse. Indeed, the possibility that environmental interests might be captured by opposition parties has motivated PRI officials to pursue cooperative strategies with environmental interest groups (Leonard 1985, 805) and helps guarantee that environmental issues will continue to receive the attention of future Mexican administrations.

Thus the Mexican case indicates that environmental policy is increasingly difficult to postpone on the policy agendas of Latin American governments. Most governments in the region have already undertaken some token initiative in this regard (Leonard and Morell 1981). Other Latin American governments are likely to follow the Mexican example of combining symbolic satisfaction with planning to lessen the adverse impact of urban-industrial development. In the conflict between environment and development, between mounting public demands on the one hand and economic crisis on the other, such an expedient is bound to appear exceptionally attractive to bureaucratic and political elites wedded to the doctrine of rapid economic development. Consequently, short of a revolutionary shift in the priorities of Latin American governments, environmental solutions are likely to remain mortgaged to the future. In the meantime, Mexico's experiment will prove to be a key litmus test of the possibilities and the limits of this approach.

NOTES

1. Carlos A. Medina, "Actuar ya contra la contaminación, demanda generalizada: Javelly G.," *Excelsior*, 6 June 1984, A-1.
2. See, for instance, Echeverría's State of the Nation addresses for 1971 through 1976.

3. See the series on environmental policy running in *Excelsior*, 17–24 Jan. 1983.
4. See the manuscript draft of the Ley Federal de Protección al Ambiente, 1–44, Nov. 1981. For discussion, see Ojeda Mestre 1983.
5. See the *Excelsior* series on environmental policy, 17–24 Jan. 1983.
6. Teresa Weiser, "Se necesita una solución integral al problema de la contaminación del DF," *Unomásuno*, 28 May 1984, 22.
7. See also Raúl Olmedo, "La política ecológica: gestión ambiental y gestión municipal," *Excelsior*, 28 July 1984, FC–1.
8. Raúl Olmedo, "La política ecológica: voluntad y inercia," *Excelsior*, 8 Aug. 1984, FC–1.
9. "Las autoridades, sin decisión política para combatir la infición: Cantón Zetina," *Unomásuno*, 4 June 1984, 22.
10. See "Partido Revolucionario Institucional: manifiesto al pueblo mexicano," *Excelsior*, 10 Jan. 1984, A–20.
11. "Descontaminar a Acapulco, pide el alcalde," *Excelsior*, 2 Sept. 1983, A–5.
12. Carlos A. Medina, "Hubo mucha tolerancia con los envenenadores," *Excelsior*, 8 June 1984, A–1.
13. Teresa Weiser, "No es sólo responsabilidad del estado la ecología, afirmó DLM," *Unomásuno*, 10 June 1984, 1.
14. See also Aurora Berdejo and Federico Ortiz, "Proteger el ambiente, política de PEMEX," *Excelsior*, 22 Aug. 1984, A–5.
15. Our inventory of *Excelsior* sought to identify all articles, including editorials and commentaries, on environmental themes for the year 1984, and for comparative purposes for August, September, and October 1983. Articles were considered to have environmental content if they referred to ecology or environment or any relevant subtheme (e.g., deforestation, erosion, preservation of habitat or wildlife, and pollution; also, environmental interest groups, legislation, policy, and news related to an environmentally relevant situation—such as disasters treated as environmental problems). In ambiguous cases, such as news on urban development, health, sanitation, or population, the article was read for explicit reference to environmental or ecological themes. If such themes were found, the piece was included. No articles based on foreign wire services were included. Articles addressing foreign themes written by *Excelsior's* foreign correspondents were included. The objective was to cover all material devoted to environmental topics directly produced by *Excelsior* (the exclusion proved to be rather insignificant—less than a dozen articles on environmental themes fell in the foreign news category). In general, the procedure was to be as inclusive as possible, erring on inclusion rather than exclusion if in doubt. All articles were identified and read by the authors, who assume full responsibility for any errors of identification and interpretation.
16. A figure of one thousand was cited in Nidia Marín in "Acciones ineficaces de la SEDUE, mientras cunde la contaminación," *Excelsior*, 8 July 1984, A–4.
17. "Surgen en México los ecologistas," *Excelsior*, 23 May 1984, A–1.
18. "Confusa, nuestra legislación ambiental," *Excelsior*, 4 June 1984, A–1.
19. Marín, "Acciones ineficaces," *Excelsior*, 8 July 1984, A–4.
20. Olmedo, "La política ecológica," *Excelsior*, 28 July 1984, FC–1.
21. *Excelsior*, 17 Dec. 1984, "Soberanía total sobre la energía nuclear," A–1, and "Ampliará el ININ sus objetivos esenciales con la ley nuclear," A–4.
22. Eduardo Chimely, "FERTIMEX, CFE y PEMEX deben poner ejemplo anticontaminante," *Excelsior*, 6 Oct. 1984, D–7.
23. "Texto íntegro del III Informe de Gobierno," *Excelsior*, 2 Sept. 1985, 1–6; and "Texto íntegro de IV Informe de Gobierno," 2 Sept. 1986, 1–8.
24. "Por contaminar el mar fueron multadas 38 embarcaciones: SCT," *Excelsior*, 5 Oct. 1983, A–4.
25. Francisco Garfias, "Faltan recursos financieros para combatir la contaminación: Javelly," *Excelsior*, 16 Nov. 1984, A–4.
26. Rodolfo Wong, "Inventario de contaminación industrial efectúa la SEDUE: Alicia Barcena," *Excelsior*, 22 Aug. 1984, D–7. Also, "Instalará FERTIMEX dispositivos anti-contaminantes: Javelly Girard," 29 Aug. 1984, A–5.

27. "Trabaja la SEDUE con 1600 industrias para reducir descargas contaminantes," *Excelsior*, 24 Dec. 1984, A-5.
28. Wong, "Inventario de contaminación," *Excelsior*, 22. Aug. 1984, D-7.
29. Weiser, "Se necesita una solución," *Unomásuno*, 28 May 1984, 22.
30. Nidia Marín, "Actuará con energía el gobierno control las empresas contaminantes: Aguirre V.," *Excelsior*, 7 Nov. 1984, A-1.
31. "Saldrán de Ixhuatepec la planta de PEMEX y las gaseras," *Excelsior*, 3 Dec. 1984, A-1.
32. See "Pollution in Mexico Worsening Says Environmental Spokesman," *Houston Chronicle*, 25 Feb. 1983. Also, "'Inactividad parcial' en algunas direcciones de la Subsecretaría de Ecología: Francisco Molina," *Unomásuno*, 12 Mar. 1983, 22.

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