



“Summary of article by Priscilla Connolly: Mexico City: Our Common Future?” in Frontier Issues in Economic Thought, Volume 6: A Survey of Sustainable Development. Island Press: Washington DC, 2001. pp. 145-149

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While Mexico City is neither the largest nor the most populated metropolitan area in the world, there are serious environmental threats to its own survival as a viable city, as well as regional and even global spillover effects. While some problems are being addressed, others are deteriorating. This article puts the problems of Mexico City in perspective with respect to:

- Population growth and distribution, and their effect on poverty-related environmental problems;
- The water cycle, deforestation, and subsoil contamination;
- Atmospheric pollution by industry and transport.

Some of the issues discussed are general to all urbanization processes, while some are exacerbated by the scale of growth in Mexico City or by its specific historical and geographic conditions. It is important to distinguish between the general and localized problems. It is also important to distinguish between poverty-related environmental deprivation and ecological degradation by economic progress.

Too Many People?

A focus on simple demography can be misleading, since population growth per se is not the problem. Neither is controlling city growth necessarily a solution. A review of trends over time in population and economic growth reveals a more complex picture (Table IV.4).

Rapid population growth and in-migration rates peaked after 1970. The demise of import-substituting industrialization, sharp reductions in fertility rates, and decentralization of educational opportunities all contributed to declining trends in Mexico City's growth rate. The financial crisis of 1982, and ruthless opening-up of the country's economy led to a relative de-industrialization of Mexico City, decentralization of employment, and a reduction in the city's relative socio-economic advantages over other areas. These trends coincide with rising awareness of environmental deterioration, especially traffic congestion and air pollution.

Between 1987 and 1992, out-migration from the city exceeded immigration. Mobility is still high, but among the millions of people flowing in and out of the city, those leaving are

predominantly the more skilled, while the newcomers tend to be poorer and less educated. Overall, population projections for Mexico City have proved to be drastic overestimates;

Table IV.4. Selected Basic Statistics for Mexico City

Mexico City Metropolitan Zone	1950	1970	1990	1995
Population (millions)	3.1	9.3	14.7	15.6
Mean annual growth rate (%)	6.7	5.6	2.3	1.9
Mexico City as percentage of total national population (%)	12	19	18	17
Total Mexico State and Federal District	1950	1970	1988	1993
Total GDP as percentage of national GDP (%)	34	37	33	35
Manufacturing GDP as percentage of national GDP (%)	Nd.	50	42	43
		1977	1990	1993 1997
Total private sector formal employees as percentage of national total (%)		40	33	31 28
Private sector formal employees in manufacturing as percentage of national total (%)		47	33	32 25
Total National	1950	1970	1990	1997
Population (millions)	25.8	48.2	81.2	94.7
		1960-70	1970-80	1980-90 1990-97
Average annual percentage population growth over decade (%)	3.3	3.3	1.9	1.6
GDP per capita average annual percentage growth (%)	3.5	4.1	0.1	0.6

nonetheless, environmental conditions have worsened. The demographic transition has led to smaller families and higher housing demand. Inflated land prices, combined with falling incomes have driven more low-income families to un-serviced sites on the expanding city edge. Central areas, despite existing services and infrastructure, are losing population faster than before. The problems are accentuated by a political and administrative division which places many outlying municipalities outside the better-financed central Federal District in poorer Mexico State (Table IV.5).

Table IV.5. The Two Mexico Cities

	Federal District	Mexico State
Population 1997	8.5 million	8.7 million
Mean annual growth rate 1990-5	0.5%	3.3%
Percentage houses without inside running water	28%	45%
1992 local government budget	c. US\$5,500 million	c. US\$1,300 million
Annual investment in public transport 1992	c. US\$1,000 million	US\$ 80 million*
		*State plus municipalities

Water: Too Much and Too Little

Mexico City is situated in a closed basin with 1,000 mm. rainfall every year between May and September -- under natural conditions the area would be a lake. A massive drainage system takes sewage water combined with storm drainage out of the basin. This makes it difficult to store or recycle water, and necessitates pumping in drinking water via aqueducts from distances of 60 to 150 kilometers away. A growing expanse of concrete and tarmac prevents absorption of water into subsoil. 60 percent of the city's water is provided by local wells, and depletion of the aquifer has caused drastic soil subsidence.

Soil subsidence in turn damages water pipes, leading to drinking water contamination and leakage. Desiccation of soils has also led to loss of vegetation, erosion, and wind-borne particle pollution. Poor sanitation conditions mean that the dust includes faecal matter, contributing up to 30% to the toxicity of the city's atmospheric pollution.

Policies which are needed to respond to this worsening problem of water waste and overdraft include:

- Retention and recycling of water within the valley, reducing the need to pump fresh water in and waste water out;
- Repairing leaks in the water pipe system
- Water conservation measures such as the substitution of 6-liter for 16-liter toilets.

Thus far there has been little effort to increase the efficiency of the water system or to limit consumption, perhaps because building aqueducts at public expense is more profitable and politically more popular.

Air Pollution and the Energy-Matter Cycle

Atmospheric pollution is strongly related to energy consumption. As an oil-producing nation, Mexico has placed little emphasis on energy efficiency or the development of alternative energy sources. Electricity is subsidized, and liquid petroleum gas (LPG) is made available to households at a price which is 55% below cost. 56% of fuel energy consumption in Mexico City is gasoline, diesel, and LPG used in transportation, while 23% is industrial use of natural gas and LPG.

Rising awareness of the seriousness of air pollution, bolstered since 1988 by a network of air quality monitoring stations, has led to progressively stricter emissions control policies. This has resulted in significant declines in maximum levels of industrial and transportation pollutant emissions. However, average pollution levels are still unacceptable by Mexico's norms, which have been adjusted to meet international standards. Mexico City's location in a high enclosed valley worsens pollution: thermal inversions trap pollution and low oxygen content means that internal combustion engines are 23% less efficient than at sea level. While transport is the

largest contributor to atmospheric pollution (75% by weight), industrial emissions rise in significance if toxicity is taken into account.

Transportation and Automobile Use

Private cars and taxis are responsible for 67% of transportation emissions. However, more than 70% of total passenger trips are by public transport, dominated by privately-franchised minibuses. Although minibuses are neither energy-efficient nor clean, high use rates mean that their per-passenger pollution emissions are far lower than private vehicles. The least-polluting vehicles are high-capacity buses, trolleys, and the subway. However, the political power of subsidized minibus and taxi cartels has impeded rational planning of public transit. Federal District support for buses has decreased as a result of budgetary restrictions and as a way of suppressing militant labor unions. Use of the subway has also declined as residential patterns have become decentralized, and because of competition from the minibuses.

Public transport policy in Mexico City is effectively decoupled from planning and building legislation, including the provision of parking. The use of pricing policy to modify transport behavior and reduce pollution has not been attempted. Thus, individual transport in cars and taxis has been allowed to dominate, and in effect has been supported by government investment policies.

The number of cars in Mexico City has grown much faster than the population, almost doubling from 1.3 million in 1986 to 2.4 million a decade later. 37% of households in Mexico City have at least one car. There have been virtually no efforts to curb car ownership and use. An emergency one-day-a-week automobile ban backfired as people acquired second (or third) cars to evade the ban on the first car.

New and wider roads and the construction of overpasses encourage more car traffic. Parking is widely and cheaply available, and politicians have actively promoted the development of new car parks. Shopping malls with restaurants and cinemas -- inaccessible to pedestrians but convenient for cars -- are multiplying all over the city. A strong political dynamic is set in motion: ". . . the population that is supposed to abandon their cars in favor of some potentially improved public transit system is always someone else. No one who has a car at present seriously envisages a future without one." (78)

Conclusion

The environmental problems facing Mexico City are both complex and dynamic. Solutions will need to be found in measures not directly associated with environmental policy, especially housing and land use, but also health, education, and retailing. Further political reform is also essential to counter cartel power and clientilistic systems. Reducing poverty is also key, since the economic struggle for survival will take precedence over environmental issues. These interrelated social, political, and environmental issues will be more important than sheer population size in determining the future of Mexico City.

