

13. Mexico City: Power, Equity, and Sustainable Development

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13.1 Introduction to the Post-Apocalyptic City

In the summer of 2002, a failed attempt to build a \$2.5-billion international airport in the outskirts of Mexico City caused social upheaval. Originally framed as a sound environmental decision to replace the old and limited infrastructure in the central city, the project was later marketed as a way to boost the real estate market. When the affected peasants of the municipality of Atenco realized that the airport project would generate more than a \$100 billion in business revenues and increase the land value up to 500%, the \$0.65 per square meter offered by the government for their land seemed inconsistent with the projected profits. The economic model behind the project was characterized by Harvey (2003) as a process of “accumulation by dispossession,” since the venture followed extensive privatization the financialization of the economy, the management and manipulation of crises, as well as state redistribution of wealth. The model had been challenged since the insurgency of the Zapatistas in 1994, and Atenco’s mobilization followed a similar resistance to the concentration of power and wealth.

This chapter argues that the concept of sustainability in Mexico has been extensively used to justify political agendas that have maintained traditional authoritarian rule and preserved the prevalent socioeconomic structure. Interestingly, this approach has been used by both the right-wing federal government in Mexico and the left-wing government of the capital city, since public policies at each level still ground their legitimacy on the social control of the population. Therefore, by recognizing the political use of sustainability as a broadly supported – and desirable – model, it is possible to challenge the official discourse that imposes an agenda set by a “global consensus” which frames the model as the single means to attain development.

However, the official discourse on sustainable development still has to answer questions on how decisions are made and priorities established. For instance, we should be asking: What scale of intervention makes sense when framing environmental policies in developing countries? Are there alternative options for development and are they being considered? Does framing sustainability in specific ways benefit certain interest groups? Are the chosen policies addressing root causes that hinder development? Is sustainability part of a broader aim to “save” the planet or is it just a strategy to justify development in more “reasonable” terms? How has sustainability been framed by different and competing groups and which are their underlying motivations? And finally, *what* should be sustained and which alternatives exist to attain the desired outcomes?

13.2 Framing the Sustainable Cities Discourse

Even when sustainability has been presented as the basis of a consensus for policy development in Mexico City, competing interest groups have redefined the concept to suit their own agendas (Andrews 1997). Nevertheless, some critics argue the impossibility of reconciling the existing economic model with the preservation of nature, stating that “the current model of development destroys nature’s wealth and hence it’s un-sustainable” (Kothari 1990). According to this rationale, sustainability as the solution to such a paradox has been called into question because of its structural limitations. Moreover, the assumption that nature can be framed in terms of sustainability underestimates the limits of growth, rendering nature both manageable and negotiable. The paradox has been addressed by the Brundtland Report (WCED 1987) not by questioning the production model itself, but rather by framing sustainability as the maximum growth which still guarantees the regeneration of the environment. However, critical scholars suggest that a more comprehensive approach, which includes broader questions of social needs, equity, welfare, and economic opportunity, is needed (Agyeman et al. 2002). Even when international organizations try to introduce concepts of equity, freedom, and participation in their agendas as well as in sustainable human development reports (UNDP 2002), Polese and Stren (2001) are more explicit in highlighting the importance of democratic and inclusive urban management for redistributive ends as well as responding to cultural conflicts, social inequality, and political fragmentation in order to achieve social sustainability.

Within the international conversation on sustainable cities, the role of dense urban patterns and a more efficient public transport system may convey a powerful building rationality. However, in the case of cities in

developing countries, the question of sustainability relies not only on the efficiency of land use regulations, but on unequal access to the benefits of the city. Therefore, urban form in places such as Mexico City is often the product of contrasting socioeconomic conditions more than an articulated policy to achieve an intended urban outcome. How can a city be subject to regulation when at least one-third of its population lives in substandard housing, subject to volatile informal labor practices and extra-legal arrangements of land tenure, infrastructure, and basic services?

More recent global sustainability initiatives, such as the *Rio Declaration* or *Agenda 21*, have attempted to integrate management and decision-making in the international agenda. Furthermore, globalized discourse is stressing partnerships, cooperation, and “the commitment to address root causes.” Critical views of this position claim that reframing local environmental problems as global issues advances the interests of the most powerful actors involved, and consequently strengthens prevailing socioeconomic structures (Shiva 1993). However, international conferences have been moving towards structural socioeconomic concerns, expressed for instance in the World Summit on Sustainable Development in Johannesburg in 2002, where it was acknowledged that “poverty eradication, changing consumption and production patterns, and protecting and managing the natural base for economic and social development are overreaching objectives of, and essential requirements for, sustainable development” (WSSD 2002).

Even when key issues have been raised, the international power structure is always present in definitions of *what* is to be sustained. Also, these broader goals are monitored, evaluated, and coordinated through an elite group of development banks, international agencies, and other organizations, largely through undemocratic and technocratic decision-making practices (Sachs 1992, 1993). In the case of Mexico City, local communities are often deprived of their right to participate democratically in the decision-making process of defining what kind of environment and lifestyle they wish to pursue. This authoritarian rule replicates the “civilizational practices” of the nineteenth century, which supposedly brought “barbaric” cultures into the path of (sustainable) development and progress.

According to critics of the industrial model of development, sustainability has been framed to blend injury with therapy within the same “solution,” and usually ends up blaming the victims of the economic system (Sachs 1992; Shiva 1993). Therefore, if development generates poverty, then sustainability is compromised in its task to reconcile the creation of misery with the abolition of economic distress. Moreover, the rhetoric of healing-while-violating the environment would frame sustainability only as an endless reservoir for political propaganda.

The real issue is that global initiatives face the risk of becoming instruments of oppression. According to Sachs (1992), the survival of the planet “is well on its way to becoming wholesale justification for a new wave of state interventions in people’s lives all over the world.” Moreover, it is appalling that the institutions that traditionally promoted hard-core development schemes (such as the World Bank, the IBD, or the IMF), are now eager to address the full range of environmental needs. In this way, the exploitation of nature and the developmental rationale will remain intact, while interventions are framed or downsized into a more tolerable channel. Finally, ecology today is at risk of being reduced from a social concern into a set of managerial strategies aimed to deal with efficiency and risk management.

13.3 Key Environmental Issues

The Metropolitan Zone of Mexico City (MZMC) is made up of 16 administrative units within the Federal District, plus 58 municipalities in the adjacent State of Mexico. It occupies more than 1,250 km² and is home to 19 million people, or 18% of the total population of Mexico. It generates 34% of the country’s gross domestic product and offers 33% of the employment opportunities in the country. The city has been growing at a rate of 4.4% per year and the population’s density is slightly higher than that of Tokyo, double that of metropolitan New York, three times that of Paris and four times that of London (Ward 1990).

Between 1940 and 1970 the city grew by almost seven times and until recently, was still receiving about 500,000 immigrants per year (see Table 13-1). As in other large, rapidly growing cities, most of these new residents settle in makeshift, marginally illegal communities outside the

Table 13-1. Physical expansion of Mexico City, 1950–2000

Year	Population (inhabitants)	Population growth rate	City extension (ha)	Physical growth rate	Density (inhabitants x ha)
1950	2,952,199	5.85	22,989	–	128
1960	5,125,447	5.52	47,070	10.47	109
1970	8,623,157	5.20	68,260	4.50	126
1980	12,994,450	4.10	107,973	5.82	120
1990	15,274,256	2.64	130,549	2.10	117
2000	18,396,677	0.84	176,965	3.56	104

Source: GDF/COLMEX. INEGI (2000), *XII Population Census*

traditional, formal realm of government regulation and service provision. Consequently, many of Mexico City's residents, especially the poor, do not have adequate housing or basic services, and the city itself puts ever greater stress on an environment which is already suffering from pollution and overuse. Traffic congestion and atmospheric pollution are two related examples of environmental problems. Access to a clean, safe, and sustainable environment is a key measure of the quality of life of the population. However, it is not clear who is responsible for guaranteeing that the public domain is not violated, occupied, invaded, abandoned, or ignored.

Although the Federal District is not growing any more, population and physical expansion are central matters, since the metropolitan municipalities are growing at rates of over 2% a year. Nearly all demographic increases and urban sprawl will occur in the municipalities of the State of Mexico. The distribution of public resources is also an issue that has hindered the two governments from cooperating, since historically the Federal District has been favored with federal investments and educational subsidies that the State of Mexico has not received.

Transport and air pollution are issues with higher possibilities of reaching metropolitan agreements, as proved by programs such as *Monitoreo Atmosférico*, *Hoy no Circula*, *Placa Metropolitana*, and *Proaire*. Still, there is a lack of political will to face the problem of air pollution and, above all, to develop a metropolitan policy of traffic and transport linked to policies of general metropolitan development.

13.3.1 Sustainable Transportation and Air Quality

Carbon monoxide is still the main contaminant in the atmosphere, reaching a yearly 1.8 million tonnes, mainly produced by vehicles (cars, taxis, trucks, buses, etc.). However, in 1991 Mexico began producing cars with catalytic converters to minimize emissions and address growing concerns about air pollution. Also, the government established strict legislation on emission controls in taxis, trucks, minibuses, and private cars, while Pemex, the state-owned oil company, started to produce lead-free gasoline.

In an attempt to reduce air pollution caused by Mexico City's four million vehicles, the government instituted in 1989 a policy to restrict the use of the automobile known as *Hoy No Circula* Program (1 day without a car). The strategy stressed a reduction in the use of private automobiles, and introduced new regulations for cargo trucks and public transport. Nevertheless,

the automotive industry continues to be the one of the most important industrial and manufacturing sectors in Mexico. The industry grew from 1.6 million cars produced in 2005 to over 2.1 million cars in 2007, ranking the region among the top ten largest producers of automotive vehicles in the world (United States Department of Commerce 2008). As Lefebvre has explained: "Owners of private cars have a space at their disposition that costs them very little personally, although society collectively pays a very high price for its maintenance. This arrangement causes the number of cars (and car-owners) to increase, which suits the car-manufacturers just fine, and strengthens their hand in their constant efforts to have this space expanded" (Lefebvre 1991).

Transportation infrastructure is representative of the problems that urban development without systematic integration of spatial planning and transportation system development can generate. The fact that about 83% of the total number of trips are undertaken in low-capacity vehicles (cars, taxis, and minibuses) is significant, particularly when combined with the sheer number of trips (over four million intra-metropolitan trips per day). The relative level of private car use is rather low for a major city, but this is somewhat offset by having 58.6% of the total number of single trips carried out in public transport vehicles with very low capacity, such as minibuses and "combis."

The metro system is well-used, but it is mostly based in the Federal District. While metro lines extend out to heavily populated municipalities in the State of Mexico, other MZMC residents living outside the Federal District must first take minibuses to metro stations and then take the metro elsewhere. Given the increasingly long distances involved as the metropolitan region expands, the lack of effective train linkages and the reliance on relatively inefficient low-capacity buses is a significant handicap for commuters.

Commuting distances and travel times have increased significantly since 1987 as a result of both expansion of the urban economic area and, probably, slower traffic flows caused by congestion. Significant differences in the quality of transport services across the metropolitan area tend to produce self-reinforcing disparities in terms of access to employment and levels of investment. These changes in the MZMC's urban form and functions entail the need for significant new investment in citywide public transport infrastructure. The ability of the region to meet these infrastructure demands will depend on the ability of the public authorities to coordinate effective provision of strategic infrastructures in a context of extreme fiscal constraint.

Two contrasting projects embody the divergent courses of action that are being taken by transport policy in Mexico City today. Over the past few

years, more than half of the budget allocated to transport was used for road construction, with the most prominent project being a double-decker system of elevated highways over the ring road. As for investment in public transport, the most innovative initiative has been the *Metrobus*, a bus rapid transit system based on the *Transmilenio* model from Bogotá. The new *Metrobus*, which replaced more than 260 mini buses, consists of an initial stock of 80 articulated buses covering a distance of 19 km along Insurgentes Avenue, a main north–south axis of the city. The buses have a dedicated lane and make predetermined stops at elevated stations from which passengers can board swiftly, having already paid their fares on the ground.

What these two projects show is that transport planning still oscillates between old biases and newer efforts to break with the past and transform Mexico City into a city that responds to the needs of the majority of its population who rely on public transport (see Table 13-2).

The impressive dynamics of the car industry has been translated, for the MZMC, into an explosive growth of new vehicles, which, at the end of the 1990s, was calculated at between 250,000 and 300,000 additional vehicles on average per year. During this period, the population growth index for the MZMC was just 1.5% per year on average, so the growth rate of the number of cars in the city is four times that of the population. After nearly 15 years during which no major roads were constructed and with an estimated 25% deficit in transportation coverage, the current Federal District Government (GDF) decided to push forward a rapid-transit road program, as part of the Transportation sector's Integral Program, which has been complemented by several public transportation measures.

13.3.2 Land Conservation

The principal feature of the expansion of the MZMC is not so much the rate of growth in settlement areas as the level of organization and control exerted by the public authorities over the growth process. Controls on urban development have always been relatively weak in Mexico, but these weak structures came under pressure over the past two decades. Land for development within the Federal District became saturated, while at the same time the legal framework for urban development in other areas was reformed, making it somewhat easier for land to be converted from non-urban to urban usage.

The controversial reforms of articles 27 and 115 of the Political Constitution of Mexico and of the *General Act on Human Settlements* in the early 1990s had a detrimental effect on the availability of land for

Table 13.2 Commuting distances and times by public transportation

Mode of transport	2000					
	Length of trip (km)	Speed (km/h)	Average time per trip (min)	Length of trip (km)	Speed (km/h)	Average time per trip (min)
Buses	3.5	16.8	12.5	5.6	16.7	20.1
Trolleybus	2.4	14.0	10.3	4.1	14.6	16.8
Minibus	n.a.	21.0	4.9	15.7	18.7	n.a.
Metro	7.1	39.0	10.9	9.0	36.0	15.0

Source: Adapted from Molinero Ángel, Taller de Expertos, Revisión del Programa de ordenación de la Zona Metropolitana del Valle de México, Programa Universitario de Estudios de la Ciudad, UNAM, November 2002

urbanization purposes for the low-income population.¹ Nevertheless, the reforms also promoted a more decentralized system whereby municipalities exercised greater controls over land use and authorization of new real estate developments. In addition, simplification of the process of the sale of *ejido* (communally owned) lands opened up for development large tracts on the urban periphery that had hitherto been difficult to commercialize because of contested titles or complicated multiple ownership structures. Overall, these reforms promoted a more fluid land market, but also created a fragmented system favoring a patchwork rather than coordinated pattern of suburbanization and reduced the available land supply for the poor.

Special attention is paid to the conservation land in the southern part of the Federal District. These areas permit the main aquifer to recharge its sources as well as preventing climate change on a regional scale. The aquifers provide water for 70% of Mexico City's demand, but an insufficient recharge rate is resulting in a progressive desiccation of the sources.

Between 1990 and 2000, an 18% increase in population was accompanied by a 31% increase in the city's land area. As the structure of Mexican families evolves, with family size decreasing and people moving into their own accommodation at an earlier age, demand for housing units will continue to grow. Moreover, evidence from other megacities demonstrates that as the population becomes wealthier, demand for larger living spaces will also increase. All this means that the rate of outward expansion of the metropolitan area is unlikely to slow, despite changing demographics.

Estimates of the demand for land for housing and infrastructure vary according to the plot size used in the calculations. Thus, estimates for the growth in land area of the MZMC range from about 20 to 40% between 2000 and 2020, demonstrating that even in situations in which population growth is relatively modest, the expansion of the urban area can be rapid, posing significant challenges for infrastructure development and the provision of public services. Existing high-intensity infrastructure in the Federal District must be maintained to cope with the estimated 3.6 million people who come into the centre to work each day. Moreover, whereas in the past the process of changing residential patterns was characterized by increasing pressure in central areas and a spilling out into adjacent peripheral areas, now further growth is sprawling on the conservation land in the south of the city. Thus the strain on infrastructure and public service provision is felt not only by the central areas, since each additional development on the periphery requires infrastructure and service links necessary to maintain its viability.

¹In fact, the social production of housing (mostly informal) was possible due to the availability of communally owned agricultural land.

13.3.3 Waste Management

Mexico City produces over 10,000 tonnes of waste and 200 tonnes of industrial toxins every day, most of which are dumped into open pits, landfills, and illegal deposits. It is estimated that at least one-quarter of Mexico City's solid waste is dumped illegally or remains on the streets, and even waste that is disposed of legally is rarely monitored. This vast quantity of mismanaged waste has dire consequences for the city's water supply. Residents receive 60% of their water from the local water table, which is being increasingly contaminated by toxic substances produced by illegally dumped or poorly monitored solid waste. As a result, the water used for drinking and food preparation in Mexico City contains high levels of cadmium, chrome, and iron – metals that cause genetic diseases and cancer in humans. Furthermore, of all the residual water produced, 50 m³ per second is reused in the city and the remainder is pumped back into the ground where it threatens to infect the water being extracted. Over three million residents lack basic sewage and drainage infrastructure, and those who are connected to the municipal system suffer from inadequate and outdated service. The system for solid waste disposal is overtaxed as well. Sewage treatment plants are unable to cope with the quantities produced, and the sewage itself is poorly collected through a drainage system that needs to be repaired, replaced, and extended.²

Fortunately, the problem of solid waste is somewhat ameliorated by widespread recycling. The city government boasts that Mexico City has the largest informal recycling system in the world. Everyday household waste can be given to the garbage collection service with glass, aluminum, paper, and cardboard already separated. (This system has helped keep solid waste from domestic sources at 37.2% of the city's total.) Waste collectors generate most of their income by selling these products to private recycling industries. Despite the success of the private recycling system, it does not recycle plastic, a major source of solid waste. Waste collection has become a highly unionized and powerful industry resistant to change or governmental regulation.

As the largest city in Latin America, Mexico City has great difficulty protecting its environment, providing basic services to its residents (see Table 13-3), and ensuring suitable living standards as well as economic opportunities for the poor. The issue of organic waste disposal and sewage touches upon all these problems. Many residents in Mexico City lack basic

²The wastewater is pumped out of the city by giant machines, and estimates indicate that in the event of a general failure, the city would be under several feet of raw sewage within hours.

Table 13-3. Access to basic services in the MZMC, 2000 (percentage of the population)

	Water supply (%)	Sewerage (%)	Electricity (%)
Federal District	94.74	96.00	97.33
State of Mexico	86.51	85.95	91.48
State of Hidalgo	86.72	83.85	89.69
Total MZMC	90.36	90.64	94.21

Source: INEGI (2000). Figures for the States of Mexico and Hidalgo include only those municipalities that are part of the MZMC

sanitation service and are not connected to the municipal sewage system. The resulting pollution causes health hazards in the communities themselves and threatens to poison the entire city's water supply.

13.3.4 The Sustainability of Water

Among the biggest challenges for an urban area is the provision of a safe and reliable water supply for its inhabitants. Often the availability of water for human consumption competes with the water needs of industry. The case of Mexico City is instructive, because it is one of the first megacities in a developing country and one of the first major cities to experience problems with the provision of water.

Experts estimate that the Basin of Mexico is now reaching not only its ecological limits, but also its technological and social limits to substitute or import needed resources. Mexico City is an acute example of uncontrolled urban expansion and environmental deterioration, but is certainly not unique. The combination of natural resource constraints, environmental impacts, and the incapacity of governments to solve complex problems can be found in both developed and developing countries.

The Mexican Constitution of 1917 entrenched water resources as a public domain under the control of the federal government. Water management in Mexico, as in many other countries, is highly centralized. In 1989, in an effort to make federal management more efficient, the government created the National Water Commission (*Comision Nacional del Agua*, or CNA) as the sole federal authority to deal with water management. The CNA operates as an autonomous agency within the Ministry of Environment and Natural Resources (SEMARNAT). The CNA is responsible for implementing Mexico's *National Waters Act* (1992), as well as the operation of an extensive hydraulic infrastructure for the delivery of bulk water supplies.

The Federal District and the State of Mexico, which are responsible for providing drinking water, and for wastewater collection and the disposal within their jurisdictional boundaries, share management of water and wastewater within the Metropolitan Zone of Mexico City.

Mexico City receives 70% of its water as groundwater from the aquifer system that has supplied the population of the basin for hundreds of years. Natural springs and the runoff from summer rains from the sierras and mountains surrounding the city are the main source of water to the aquifer. This source is so bountiful that water was not a scarce resource in Mexico City until about 35 years ago, when the population reached over six million people. Today, however, Mexico City faces a serious water deficit. As a result of increased demand from consumers and industry, and the rapid deforestation in the surrounding hills that have served as the aquifer's recharge areas, more water is now leaving the system than entering it. It is estimated that 63 m³/s of water is needed to support the potable and agricultural irrigation needs of Mexico City's population. The main aquifer is being pumped at a rate of 55.5 m³/s, but is being replaced at only 28 m³/s, or about half of the extraction rate, leaving a shortfall of 27.5 m³/s. The Rio Magdalena, one of the last small surface water sources in Mexico City, supplements 2% of this shortfall, but this river is increasingly contaminated by urban pollution.

While engineering strategies have been explored to find a solution to the water shortage, the damaging consequence of the aquifer's overexploitation is alarmingly visible to the inhabitants of the capital, whose city is literally sinking beneath them. This sinking, or subsidence, is caused by the depletion of water volume and pressure from the lowering of the aquifer, which causes the clay soils below the city to consolidate and the land that rests on top to collapse. Subsidence has been a problem since the early 1900s as an effect of the diversion and draining of lake water from the basin floor.³

Subsidence not only threatens the foundations and structure of Mexico City's many historic buildings, but also causes serious damage to the city's water supply and sewage infrastructure. Water pipes crack or break as the city sinks, causing leaks and enabling potential contaminants to enter the city's distribution system. The dense clays that overlie much of the aquifer were previously considered an impervious barrier to the downward migration of water and contaminants, but when the soil sinks, the dry clay becomes fissured and allows waste from the city above to seep into the water table below. Because of this infiltration, the water quality of the aquifer has become as large a concern as the quantity of water in the aquifer.

³Since this time, some areas in downtown Mexico have sunk about 9 m. Today, Mexico City is sinking between 5 and 40 cm a year.

Subsidence has also exacerbated Mexico City's enduring flooding problem. Flooding has always been a seasonal concern in Mexico City, but continued subsidence has required the construction of dikes and a deep drainage canal, as the city has sunk below the natural lake basin. The situation is now so serious that it takes numerous pumping stations, which run 24 h a day all year long, to keep the summer rains from washing sewage and runoff back into the city. Water has been on the public agenda for decades. Apart from increasing its supply, there is not a viable metropolitan hydraulic project taking advantage of technological opportunities, which would reduce risks of supply outages and infrastructure deterioration.

13.4 Planning Environmental Sustainability in Mexico City

Following the shift to a more free-market economy and the withdrawal of the state on public welfare issues that started in the early 1980s, Latin American cities dismantled their planning systems during the 1990s. At the same time, an important shift occurred, from acknowledging social problems in urban settings as a main target of public policy to addressing the extreme effects of the policies. Even when there is no easy resolution of the root causes of the structural inequity inherent in the economic model, trade-offs between important and deeply held values are being contested and discussed.

In Mexico City, the newly elected Mayor, Marcelo Ebrard (2006–2012), is implementing sound environmental policies, such as furthering the Rapid Transit Bus System across the city, building and promoting pedestrian and cyclist transport systems, and building temporary public spaces (public ice rinks and beaches).⁴ The reaction to these initiatives has been mixed. On the one hand, these popular initiatives may pave the way for Ebrard's presidential candidacy, and on the other, environmental policies need to be framed within a broader context, namely securing coordination among the Federal District, the State of Mexico, as well as with other bordering states such as Hidalgo.

In the General Program of Development 2007–2012 of the Federal District (Ebrard 2007a), Ebrard and his administration framed sustainability as a long-term strategy. Its main goal is “to grant opportunities for

⁴Nevertheless, the mayor has also undertaken harder measures, such as removing street vendors from the historic center or expropriating areas in the city where criminal activities thrived. Although these actions appear to be a natural way to restore order, they have also revealed the authoritarian side of the current administration.

everyone to achieve their projects and aspirations.” However, the pervasive contradiction of wanting to preserve the natural environment while at the same time guaranteeing the “efficient and sustainable management of natural resources” remains a paradox (Ebrard Op. Cit.). Moreover, the official manifesto expresses its unconditionality to international dictates and Ebrard vows Mexico City will become “a city which is to be ruled by international standards, agreements and cooperation on environmental issues in order to reaffirm our solid engagement with humankind.” In this sense, Ebrard embraces the global warming framework and assumes his responsibility to mitigate the 1.5% that the city contributes to it on a global scale. Although at the local level Mexico City contributes only 5.5% of national carbon emissions, the city’s estimates reveal that in the next couple of years this amount may double (Ebrard Op. Cit.). To prevent this from happening, Ebrard’s approach is not only to change the trend, but to set new standards for the developing world: “Mexico City contributes to global warming in a significant manner. This is both a responsibility and an opportunity to position Mexico City as a key factor in attaining the *Millennium Goals*. That is, incorporating within programs and public policies the principles of sustainable development contained in *Agenda 21*. Also to reverse the loss of environmental resources [and to] address the immediate needs of the present while sustaining the resources for the future” (Ebrard 2007a).

The current administration of the Federal District has sworn “to incorporate principles of sustainability in a cross-cutting way and in every action, public policy, and in decisions regarding expenditures and investments” (*Programa General de Desarrollo 2007–2012*, Ebrard 2007a). The comprehensive approach is meant to address everybody’s interests – particularly those of the underprivileged – even when the procedures leave ample margins where powerful stakeholders profit from them. However, in the *Programa*, the promotion of “collaboration” and “participation” is still on the broadest terms, and even when the cost to the next generation’s welfare is thoroughly emphasized, the decision-making mechanisms are still unclear.

Among the key objectives of the 2007–2012 Program is to improve monitoring systems for various environmental indicators as well as reducing emissions and pollutants. No deadlines or hard numbers are mentioned to frame the endeavor, but at least it is mentioned that a general strategy is imperative for the whole Regional Area of the Valley of Mexico. For instance, the Federal District alone produces more than 12,000 daily tonnes of solid waste, half of it generated by households. Due to the highly recyclable nature of the waste produced (43% organic and 40% potentially recyclable inorganic), the program points to a strategy to collect, select, and recycle most of it.

13.4.1 The Green Plan

Ebrard's environmental plan is synthesized in the *Plan Verde* for the Federal District (a green plan), which has the ultimate goal to "humanize the city" (Ebrard 2008). The plan includes the construction of 94 km of cycling routes and 240 km of rapid transit bus routes (*Metrobus*) a year over 6 years, privileging public transport within a strategy of mobility. Ebrard aims to follow the ongoing conversation among urban planners on the importance of scale and the sense of place of urban life. For Ebrard, cars are responsible for the alienation of citizens, acknowledging that "we had never been as isolated as in the civilization of the automobile" (Ebrard, Op. Cit.). Explicitly informed by urban strategies set in motion in Barcelona and Paris, Ebrard expects to build cycle-stations where people would be able to leave or borrow bicycles in a more flexible way.

For the first time in the recent history of Mexico City, a mayor is attempting to undertake a comprehensive strategy of mobility with measures such as compulsory school bus transportation, new ordinances for trucks, and intensifying public transport use. The bottom line – or at least what the Government of the Federal District is proclaiming – is that "every measure that we are taking can be summarized in two issues: sustainability and [a better] quality of life for our city" (Ebrard, Op. Cit.). Improving the quality of life and acting against global warming are the main targets of Ebrard's government. Recently, during the celebration of the International Year of Planet Earth in Mexico City, he endorsed the global call, framed both as a personal and an institutional promise for his government. At the meeting he launched an urgent call "to undertake the necessary steps to guarantee our survival, the city's sustainability and contribute to the sustainability of our planet" (Ebrard, Op. Cit.).

Ebrard conducted a "green consultation" (known as *Consulta Verde*) where – allegedly – a million citizens expressed their views on ecology, energy, and the management of natural resources.⁵ According to the *Consulta*, a vast majority agreed to change patterns of behavior such as reducing their water consumption, using public transport more often, and participating in waste recycling. However, while public policies need to be endorsed by citizens, in Mexico City even basic forms of consultation such as referendum are not available as viable tools to comply with broader democratic needs. In the city's budget, Ebrard's major investments went to the 245 km of *Metrobus* system and the construction of 22 km of underground trains lines (*Metro*) linking the southern part of the city from East to West. Also, an experimental

⁵However, the real value of "public consultations" has been called into question since they have been used to legitimize policies that would not be approved in a referendum.

Public Transport Corridor with Zero [Carbon] Emissions in Eje Central will be constructed, as a prototype for the rest of the city. Even when “zero-carbon” emissions and the use of hybrid technologies in taxis is always laudable, the transformation of a significant proportion of the four million automobiles on the roads is still a long way ahead.

13.4.2 Preliminary Results: The First Address to Citizens

In his first *Informe* (Ebrard 2007b), the major annual address in which the Mayor reports what has been accomplished regarding the general program that was presented at the time of taking office,⁶ Ebrard explained that the *Plan Verde* (Green Plan) embodied the fundamental guidelines for the sustainable development of Mexico City. The Plan included a combination of strategies and actions aimed to move towards “sustainable development” over 15 years. The Plan, which includes provision for a coordinating team of the main offices within the city’s government as well as a board for assessing and evaluating the outcomes, is expected to inform the environmental policies put in place.

The Green Plan is meant to be ambitious and encompasses the following issues: land conservation, livability and public space, water, mobility, air quality, waste, energy, and climate change. The issues have been a critical concern for past administrations and represent a long history of inadequacies and shortages. For instance, the strategy for *land conservation* aims to achieve “zero growth” in the urbanization of protected land, which is an ambitious goal for a city that has been created over an estimated 60% of formerly agricultural grounds (Ward 1990), and has rarely created land reserves for the low-income groups. *Livability* refers to the creation and recovery of public spaces – a strategy inherited from the Barcelona model⁷ – which is presumed to inherently generate conviviality, thriving social encounters, and “social cohesion” (which is not always the case, as in areas with a high incidence of crime). Moreover, and still following the Catalanian school, the creation of structural projects around public spaces are framed as “granting social equilibrium, protecting the environment as well as the natural resources” (Plan Verde 2008).

⁶Even if a year in office is not enough to evaluate the reliability of a city government, it provides the framework of policies to come in the next years.

⁷Barcelona has long been the poster child of politically correct urban planning for Latin America. Former Barcelona officials such as Jordi Borja, Joan Busquets, and others had been hired as consultants for several cities such as Bogotá, Buenos Aires, Mexico, and Santiago, promoting public spaces and environmental quality.

Even if the quest for integration, inclusion, and redistribution of benefits plays a major role in this strategy, the objective of overcoming inequalities through physical interventions in the city is not a proven strategy and its success depends on the scale of and social support for such interventions.

Water is also a key issue for Mexico City because the cost of pumping water to the city continues to increase as the city draws on increasingly distant sources. As the mayor has observed, “we are already importing more than half of the water we consume in Mexico City” (Ebrard 2008). Nevertheless, the Government of Mexico City (GDF) recently inaugurated a water recycling plant and expects to build another three in Iztapalapa, Coyoacan, and Santa Fe. However, distribution is still a key issue, since affluent districts consume 900 l per person per day, while other parts of the city have to cope with only 35 l per person per day. The problem relates to inequity and redistribution beyond the culture of waste. Ebrard seems to be targeting the latter, with his recent remarks that “Water will no longer be free [or cheap], it will no longer be an unlimited resource and the city, that is, us, will have to use it differently” (Ebrard 2008). The strategy for water is based in reducing consumption (following Antanas Mockus’s example in Bogotá), improving maintenance and efficiency (preventing leaks), and recycling water. More ambitious projects, such as renovating infrastructure, constructing alternative drainage systems, and creating lake parks are mentioned, but not addressed.

Another instrument designed to promote a comprehensive environmental policy is the *Programa de Acción Climática de la Ciudad de México 2008–2012* (Secretaría del Medio Ambiente del Distrito Federal (2008)). The plan endorses the use of energy-efficient technologies, clean fuels, and alternative sources of energy. Financing from the Global Environmental Fund (GEF) has been used to launch the Rapid Transit Buses named *Metrobus* as well as for “harmonizing fragmented policies dealing with environment, urban development and transport” (Ebrard 2007b). Once again, the adoption of green technology is framed as a problem-solver capable of transforming the environment. The requirement of 30% of solar panels to heat swimming pools or establishments employing more than 51 employees is only partially addressing the environmental impact of 22 million people in an urban agglomeration. More significantly maybe, will be the estimated reduction of 300,000 tonnes of carbon monoxide with the construction of the 230 km of *Metrobus* programmed for the next 5 years.

The strategy for waste recycling seems to be struggling, considering the scale of the problem. In Ebrard’s first year in office, 76,333 tonnes of construction wastes were reportedly recycled. However, that figure must be compared to the annual 4,380,000 tonnes of general waste reported. The

Informe also noted that 50% of the plans in the urban planning department had been completed, which indicates the assumption that planning is foremost a technical endeavor, in which land uses or future projects do not need to be publicly discussed or brought to consensus.

13.5 Final Remarks

After a decade of left-wing mayors endorsing progressive agendas, Mexico City has experienced a record of uneven results. Even when more attention has been paid to improving the environmental quality of the city, the strategies intended to achieve sustainability have been largely dictated by political agendas as well as the circumstances at the time. In recent years, decisions on major urban projects in Mexico City have been made on the basis of international “success stories” undertaken in comparable cities (i.e., *Transmilenio*’s bus rapid transit system in Bogotá), as a response to anticipated major catastrophes (such as floods or earthquakes), or addressing inescapable threats such as global warming and climate change. Therefore, the sense of urgency and fatality has fueled the imposition of a political agenda not only on the local scale, but also on a national basis.

Decision-making over developments, priorities, and instruments continue to be made in a vertical, hierarchical, and nonconsensual way in Mexico City. Paradoxically, progressive mayors still favor allegedly technical and scientific expertise instead of assuming the contradictions that highly political decision-making generates whenever urban enterprises are undertaken. As Lefebvre (1991) claims, “As tools of formal knowledge, all such concepts have a precise aim, which is to eliminate contradictions, to demonstrate a coherence, and reduce the dialectical to the logical. Such an intent is immanent to a knowledge that aspires to be ‘pure’ and ‘absolute’ while remaining ignorant of its own *raison d’être*, which is to reduce reality in the interest of power.”

Nevertheless, when decisions diverge from the citizens’ will, or whenever democracy fails to guarantee the public interest, riots, demonstrations and social upheaval have filled the gaps of legitimacy and have resulted in the abrupt ending of such unpopular initiatives. Thus Atenco, Tepoztlan, and the Alameda Project in downtown Mexico City were abandoned after their poor conception, lack of political *savoir-faire*, and ineffective negotiation skills were revealed. Nevertheless, the battle between public interest and political and economic powers in Mexico City is defined on a daily basis. For instance, major unpopular projects have been built despite social mobilizations, such as a Costco store built on the grounds of the historic hotel known as the *Casino de la Selva* (in Cuernavaca) and elevated highways serving affluent areas of

the city. The *Bando 2* – an ordinance to prevent any new construction outside the central city which benefited developers and tenants – has further reduced optimism about events to come.

Gifford Pinchot, the steward of Theodore Roosevelt’s Conservation Program, asserted in 1910: “Conservation means the greater good for the greatest number for the longest time” (Pinchot 1910). However, the real challenge hides in the details, as instruments and priorities are often subject to negotiation. The challenge of deciding which is the “greater good,” which is the “greatest number [of people]” and which is the best path of development, are still central for the social sustainability discourse.

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