México City: Air Pollution and Government Intervention

México City, with its more than twenty-million inhabitants in the metropolitan area, has battled the toughest climate situation in history; the air quality has dramatically reduced in the last half of the 20th Century. According to Martha Hilda González Calderón et al (2005), the first group of individuals that identified the effects of air pollution in México City were university researchers in the early 1970s. It was then that the government paid attention to the problem and slowly, but surely, new programs were implemented to increase the air quality. México City, once called one of the most beautiful sights in the world, has transformed completely to an enormously polluted city. Mexican author Carlos Fuentes wrote a book called *Where the Air is Clear* in 1959 that took place in México City. The title is ironic now because the present air is thick and very unhealthy. The two volcanoes near the city (Popocatepetl and Iztaccihuatl) were visible then, and now it is very rare when they are visible from the inner city. Eye sight has been reduced from 100 km in the 1950s to a little more than 1 km in present day (Yip & Madl 2000). This essay will examine the causes air pollution, the effects of air pollution on the population, especially children, and the programs implemented by the government to improve air quality.

El Valle de México, also know as the México City Basin, is ninety percent surrounded by mountains that rise 1,000 meters above sea level. The Metropolitan Area of México City, also called *Zona Metropolitana de la Ciudad de México* (ZMCM), is an earthquake zone due to the seismic activity that happens around its two volcanoes (Yip & Modl 2000). The city was built

over a lake called *Texcoco* and it is now home to one out of four mexicans. Although it is the second largest city in the world after Japan, the population continues growing at an alarming speed of 3% per year (Yip & Modl 2000).

The most important air pollutants of México City are "ozone (O_3), sulfur dioxide (SO_2), precursors like nitrogen oxides (NO_x), hydrocarbons (HC), and carbon monoxide (CO), that originate from the incomplete combustion of fossil fuels" (Yip & Modl 2000). Most of the pollutants come from vehicular transportation, especially family-owned cars. Major pollutants emitted by car exhausts, burning of fossil fuels and other substances have been closely related with respiratory problems, such as asthma, cardiovascular illness and even death (Barclay 2007). According to Dr. Alan Greene MD, a study presented at the November 2001 annual meeting of the Radiological Society of North America suggests that asthma rates of children in inner México City are significantly higher than those living in the coastal towns.

> The study compared the chest x-rays of children living in Mexico City (where pollution exceeds U.S. Air quality standards for an average of 4 hours a day) to children living in a seaside Mexican town. Over 63% of apparently healthy children breathing city air had signs of obstruction on x-ray, over 50% had signs of inflammation, and 18% had signs of more advanced damage. Of those living by the sea, only 5% had mild obstruction, and none had inflammation or more advanced damage. (Greene).

In the last two decades, México's government has implemented new programs and laws to improve the quality of the air. "*Hoy No Circula*" (Today it (your car) does not circulate) and *PROAIRE* have been introduced and have been proven to work. "Hoy No Circula" was implemented on November 20, 1989 with the purpose of reducing the amount of emissions emitted daily by vehicle exhausts (Davis 2008). The program "bans most drivers from using their vehicles one weekday per week on the basis of the last digit of the vehicle's license

plate" (Davis 2008). For example, cars that have a license plate ending in 5 or 6 cannot drive their cars on Mondays, cars that have a license plate ending in 7 or 8 cannot drive their cars on Tuesdays, and so forth. The hours of the program are from 5:00 a.m. to 10:00 p.m. According to Davis (2008), there are vehicles that are exempted from the program, such as taxis, buses, police cars, ambulances, fire trucks, commercial vehicles operating with liquid propane gas, and commercial vehicles transporting perishable goods. Since the program took effect, approximately 460,000 vehicles per day have been "out of service" for one day of the week (Davis 2008). On February 11, 2002, the Metropolitan Environmental Commission (*Comisión Ambiental Metropolitana*, or CAM) introduced *PROAIRE* III, a $14 billion program aimed to improve México City's air quality from 2002 to 2010. According to the Integrated Program on Urban, Regional, and Global Air Pollution website, the program "includes more than 80 measures that affect transportation, industry, the service sector, natural resources, health, and education. It focuses on the reduction of ozone and particulate matter, and emphasizes environmental education and citizen participation" (MCE 2005). One of the biggest efforts is to move inner city factories to the city outskirts, where people, especially children, are not present. Also, they will put strict laws on corporations that burn too much fossil fuels (MCE 2005).

México City's air has proven to be the worst in any major city of the world (Barcelay 2007), but the government and a good percentage of residents have come together to improve the quality of the air because air pollution not only kills them slowly, but it socially diminishes the quality of life in México around the world. In order to reduce air pollutants in México City, all residents have to make sacrifices/changes and educate themselves. They need to take advantage of the various programs implemented by their government.

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