

Environmental Changes in Mexico City

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I. Introduction

Mexico, while it may be a wonderful place, it has many issues regarding their environment. There are many issues to tackle in Mexico, but the most serious problems are air pollution, a shortage of clean water, and deforestation. These environmental issues have the most effect on the country, on its people, and especially on their environment. Much research on these topics were made because it is that bad that they must inform others the outcome of these environmental issues. Each of these problems is a growing issue that have been going on for far too long and has a major impact on many of Mexicans as well as the country's environment, which will drastically change if nothing is made to change it.

II. Air Pollution

One of the biggest environmental issues is air pollution. Records show that Mexico has one of the worst air pollution problems in the entire world. In 1992, Mexico City was deemed the world's most polluted city by the UN (United Nations). Mercer Human Resource Consulting assessed 215 cities in 2007 based on aspects including air quality, waste management, access to drinkable water, hospital services, the availability of medical supplies, and the frequency of infectious diseases. Mexico City came in fifth place. Big industries and transportations emissions are the biggest contributors to affect air pollution in Mexico City alone, where there are more than 18 million people and 6 million vehicles. The ozone threshold for one hour is not met in Mexico City. There have been many effects to the country due to air pollution. Many early deaths are thought to have occurred because of air pollution and other environmental issues. They state that they found out that a fraction of children's deaths is due to respiratory diseases. Throughout the years, there has been a notable change in the quality of air in the country. From

the past decade, Mexico no longer ranks high on cities are very polluted or struggle with environmental issues. From the UNEP, Mexico City's pollution have lowered by at least half. These changes have helped their people in such a massive way that the government still has to inform the citizens that pollution is bad to their cities and the whole country.

III. Clean Water

Another major problem in Mexico's environment is the low availability to clean and drinkable water. In the world, only a small percent of the water is fit for humans to consume. Mexico is experiencing exponential population growth throughout the years. Mexico currently has a population of about 130 million people, which is rapidly increasing, so there is a necessity for cleaner, and usable water to the people. About half of Mexico's supply of water comes from groundwater aquifers in the Mexico's basin. There are multiple basins, but the largest and most well-known is in Mexico City. For Mexico to have access to water, these wells and spring are highly essential to keep having clean water for the population. The necessity of these aquifers creates a cause that extraction water way faster than what it meant to take up. Cracks eventually formed as a result, contaminating the water with dangerous substances including germs, lead, nickel, and mercury to mention a few. There have been many health issues to people that may have been in risks due to the water getting contaminated making it unconsumable to humans. The situation has had a effect on how Mexicans use their water in their homes and has not yet been solved and people still have contaminated water in their households. This creates a struggle for many families and homes with water that can never be used. Water from their faucet exhibits a variety of hues and fragrances. The average Mexican citizen drinks averagely more than 100 gallons of bottled water annually, more than four times the amount consumed in the

USA and all other nations, according to research done in by the Inter-American Development Bank. Some Mexicans have to use a fraction of their income only on clean water, because some still don't have clean water around them. The government has made it its mission to find a solution to the issue of clean water. From Mexico City's head of public authority of water, the city has spent millions to create more water filtration systems to make clean and safe water during the past decade. The use of fresh water in Mexican homes hasn't changed a lot. Some can use water tanks to help with the necessity of water instead of a running water system like in the United States. Fresh water is still an option, but others still won't use regular water like tap water, because most of the time it's still contaminated. Due to habit and how long the water has been poisoned, people still buy bottled water.

IV. Deforestation

Deforestation is on the rise to become one of the most issues to the environment in Mexico. Deforestation is the removal of plants and trees that from a forest to destroy for other uses of the land like buildings or roads. More locations are essential due to Mexico's population escalating throughout the years, and they need to find a way to manage it with more area for people to live, which then turns to deforestation. Homes, farming, and agriculture is something needed in a big population, so they need to find more space suitable for these creations. Although Mexico has enough area to have space for more growth in the population, it completely disrupts the ecosystem, and makes a massive contribution to climate change, and increases the greenhouse effect because it releases more carbon dioxide into the atmosphere. Research suggests that Mexico is one of the highest nations that create deforestation, losing thousands of acres of woods

and jungle annually. Throughout the 2000s, Mexico's forest cover declined by less than 10% of its total territory. However, there has been slow decrease in deforestation since the beginning of the 2000s. Throughout the decade Mexico has lowered deforestation, but still has much to recover. The government still sees this as a threat to the environment and are finding ways to completely or exponentially lower deforestation.

V. Solutions

Throughout the years, Mexico City has been stated to be one of the cities that as the worst air quality, now contributes less than 2% of the country's greenhouse gas emissions. Mexico is developing these types of vertical gardens (Figure 1) to help purify the air throughout the city. They look like an amazing artwork and more importantly they provide oxygen. The idea for vertical gardens in Mexico was developed by an organization called VerdMX. Its purpose is to aims to clean up the environment and make Mexico a healthier country. VerdMX has asked Nissan, a automobile car manufacturing company, to help create the vertical gardens in the city. These gardens were designed by architect named Fernando Ortiz Monasterio. He uses a special software to create the structures in a way that seems visually pleasing in the community and a great idea for the environment. With the help from experts, and newly advanced technology, eco-sculpture is producing cleaner air for the environment and the people. More than every ten square feet can provide one person with an entire year's worth of oxygen. These vertical gardens can possibly process a lot of greenhouse gas emissions and heavy metals that are harmful to the environment. The sculptures can improve the air quality while reducing city sound by almost ten decibels generally. With the help of all the support and producers that work on this

project, they can quickly generate and manufacture magnificent vertical gardens to help with the improvement of Mexico's significant air pollution situation.



Figure 1

VerdMX collaborated with Ecobici to help create more bikes and developed more vertical gardens to lower the problem of air pollution in Mexico. With this team up, they will lower carbon dioxide emissions in the environment, and specifically in the city. The government has authorized the use of these bike-sharing program throughout the city and can grow to other locations as well. There are over a thousand bicycles and multiple stations throughout Mexico City. To ride these bikes from Ecobici, everyone must go to their website and register and after that they have the option to pay daily or annually when using the bike for transportation. After enrolling, customers get 45 minutes to use one of the many bikes throughout the city. Ecobici uses a database to connect the accounts and the bike number of each person who pays and rides a

bike to make sure that they are recording every single bike and its location, as well as users and where they left them throughout the area. There are stations throughout that scan personal cards that are linked with a user's account to the bike registration. Ecobici applications also use a tracking device to collect and preserve information.

VI. Conclusion

The environmental issues affecting its population and communities are being actively treated by Mexico. To combat the issue of air pollution by reducing carbon dioxide emissions, Mexico has developed a public vehicle program and vertical gardens to lower pollution around the city and country. Deforestation, lack of access to clean water, and air pollution are Mexico's top three environmental problems. There are many more environmental difficulties in Mexico City, but these ones were chosen as having the most impact based on studies on environmental problems there. Mexico City has numerous issues, but it has the potential to have a significant impact on the nation with assistance from others and ideas that can improve the environment and society.

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