

Air pollution assignment

[Environment](#), [Air](#)



There has been a growing concern from countries all around the globe regarding with the problem of air pollution. It is so serious that they came up with an international treaty named “ Kyoto Protocol” which basically a treaty that requires the industrialized countries to reduce the emission of greenhouse gases.

Trees are the main component of reducing the number of harmful gases in the air, especially carbon dioxide, and convert it to oxygen. This process is called Photosynthesis. If trees were to be reduced, then the percentage of carbon dioxide will be greater than oxygen. Carbon dioxide will attack the ozone layer. If there is too much of carbon dioxide the ozone layer can not endure thus they lose the “ battle” and left a hole. With this there are more UV lights infiltrated the ozone layer. The air gets warmer and warmer and this is recognized as a threat to human health as well as to the Earth’s ecosystem. . 2 FACTORY WASTE In general, factories use coal and petroleum to produce electricity or for manufacturing goods. These types Of factories are dominant in the developing countries which they cannot afford to replace it with a greener power supply, for example Wind Turbine for electricity. The smoke from this factories will be thrown to the air and thus to its surroundings. Coal and petroleum often contains sulfur compounds, their combustion generates sulfur dioxide and further oxidation of it with nitrogen dioxide will produce sulfuric acid.

Sulfuric acid is one of the dangerous acid. It can range from 0. 3 to 2. 1 of the pH level. 2. 3 HUMAN ACTIVITIES Human activities are the ones that contribute more to the emission of harmful gases to the environments, especially carbon monoxide. One of it is open burning. Humans often do

open burning of their litter outside their house and thus black smog are introduced to the atmosphere. People realized that the occurrence of open burning has gone wild and the government had done several ways to reduce this from happening. Another example of human activities is the use of cars.

Cars produce carbon monoxide, an odorless, colorless, non-irritating but harmful gas. Most people prefer to have own vehicles rather than taking the public transport. Human activities will lead to haze which has occurred in several countries. 2. 4 NATURAL HAZARDS Natural Hazards is one of the uncontrollable pollutants, such as volcanic eruptions, thunderstorms and hot weather. Volcanic eruptions also contain sulfur and other gases such as nitrogen. Nitrogen dioxide is also a product of thunderstorms by electric discharge. It can be seen as the brown haze dome above cities.

Nitrogen dioxide has a characteristic of sharp, biting odor. It is one of the prominent air pollutants 3. EFFECTS OF AIR POLLUTION The followings are some effects of air pollution. 3. 1 SMOG Smog is one of the most visible effects. It is described as a combination of smoke and fog. However, it is actually the mixture of pollutants (such as carbon dioxide) and ground-level ozone (such as poisonous gas ozone, O_3). This fog-like smoke blankets many cities and obscures the skyline's view around the world with its disclosure haze.

Additionally, they affect the people who breathe in it but also affect all the system that rely on circulation of air. When the smog is particularly heavy, the dust and grime can impact the machinery by clogging filters and gears.

3. 2 ACID RAIN Acid rain is produced due to acidification. Chemicals, for example, sulfuric acid or nitric acid from the pollutants (such as sulfur dioxide and nitrogen) enter the atmosphere and combines with water droplets that make up clouds, the water droplets becomes acidic, forming acid rain. When it falls to earth, it has numerous consequences 32. Effects on animals When acid rain falls, it can pollute the existing water table such as rivers, streams and lakes which could harm and damage the fishes and other aquatic life in the freshwater ecosystem. 3. 2. 2 Effects on Plants The acid also affects the plants and trees. It can kill a forest by affecting the leaves and bark and increases the susceptibility of plants to attack by insects herbivores. When the acid rain infiltrates into soils, it raises the acidity of the soil by changing the chemistry of the soil and making it unfit for many living hinges that rely on soil as a habitat or for nutrition. . 2. 3 Effects on Physical Environment The effects of acid rain on physical environment are drastic (according to the U. S. Environment Protection Agency). Physical Environment is also known as human construction, especially any item made of stone such as buildings, monuments and statues will be eaten away by the acid. It also erodes paint and damages building materials. 3. 3 GLOBAL EFFECT One of the biggest effects of air pollution is its global reach. 3. 3. 1 Climatic Change Global currents carry chemicals and particles around the world.

This meow results in increased temperature causing areas such as the artic, that don't have vehicles or industry, are still affected by air pollution. It melts the polar ice caps and raise the ocean level. 3-3. 2 Depletion Of Ozone Layer Ozone depletions mean losing earth's protective layer caused by number of

chemicals that have been released into the air such as chlorofluorocarbon(CIFS). This results in increasing harmful ultraviolet(LLC) radiation to reach the earth. 3. 3. 3 Global Warming Air pollution affects the whole earth ecosystem.

Another aspect of air pollution is also global warming, caused by excess of carbon dioxide put into he atmosphere through human activities. This will trap heat in the earth's atmosphere causing dramatic climatic changes around the world. 3. 4 HEALTH ISSUES Air pollution causes numerous health consequences for people. The level of effects depends on the length of time of exposure, as well the kind and concentration of chemicals and particles exposed to. 3. 4. 1 Short-term Health Effect Air pollution cause irritation of the eyes, nose and throat, and it can lead to upper respiratory infections like bronchitis and pneumonia.

Headaches, nausea and allergic reactions can also occur. Pollution can also cause asthma attack and emphysema aggravating the medical condition of individuals. 3. 42 Long-term Health Effect Air pollution can lead to chronic respiratory disease and lung cancer, in addition to heart disease and damage to the brain, nervous system, liver and kidneys. Continual exposure to air pollution affects the lungs of growing children and may aggravate or complicate medical conditions in the elderly. 3. 5 ECONOMIC LOSSES Air pollution can also harmfully affect the economy.

With rising health problems among the population, health care costs rise. With air pollution causing illnesses among people in the workforce, time and productivity are cost. Governments suffer from an inefficient workforce.

Areas of the world with high air pollution, such as the Philippines, also often report a drop in tourism and a loss of foreign investments. Crop and agricultural losses can be attributed to dying crops, decreasing fishing areas, and shrinking forest areas. Other economic losses include losses from repair of damage to buildings and increased costs of cleaning.

4. CONCLUSION

4. CAUSES OF AIR POLLUTION The causes of air pollution can come from anywhere, from human activities, naturally, or the combination of both human activities and naturally. Such as Mexico City's case study written by Michelle Hobbler, stated that; " Many factors have contributed to this situation: industrial growth, a population boom (from 3 million in 1950 to some 20 million today), and the proliferation of vehicles. More than 3.5 million vehicles ?? 30% of them more than 20 years old ?? now ply the city streets. " " Geography conspires with human activity to produce a poisonous scenario.

Located in the crater of an extinct volcano, Mexico City is about 2,240 meters above sea level. The lower atmospheric oxygen levels at this altitude cause incomplete fuel combustion in engines and higher emissions of carbon monoxide, hydrocarbons, and volatile organic compounds. Intense sunlight turns these noxious gases into higher than normal smog levels. In turn, the smog prevents the sun from heating the atmosphere enough to penetrate the inversion layer that blankets the city. " 4. 2 EFFECTS OF AIR POLLUTION

The effects of air pollution are or can be very harmful. For example, the health impacts of this pollution on Mexico City.

The Mexico City's case study stated, in 1998, that air earned Mexico the reputation of "the most dangerous city in the world for children." Air pollution cannot be blamed for the illness faced by people because as Amandine Sings, M. D., Vicar Guppy, M. D., and Santos Ass, M. D. Stated in 'Air Pollution: Indian Scenario', "Disease and malformation caused by air pollution is not a natural occurrence to be overlooked because if people themselves try to help reducing the pollutants, then health risk can be controlled." 5. RECOMMENDATION FOR AIR POLLUTION Solution efforts on pollution are always a big problem.

Several attempts are being made worldwide on personal, industrial and governmental levels to curb the intensity at which Air Pollution is rising and regain a balance as far as the proportions of the foundation gases are concerned. This is a direct attempt at slacking Global warming. This is why prevention interventions are always a better way of controlling air pollution. We are seeing a series of innovations and experiments aimed at alternate and unconventional options to reduce pollutants. Air Pollution is one of the larger mirrors of man's follies, and a challenge we need to overcome to see a tomorrow.

In many big cities, monitoring equipment has been installed at many points in the city. Authorities read them regularly to check the quality of air. The lesson to be taken is from the case study of Mexico City. The government introduced air quality improvement programs ?? PICA and PAIRED that include, among other measures, a rotating one-weekday ban on private car use. On days of high pollution, the ban extends to every second day and some

manufacturing activities are curtailed. In addition, car owners must have their vehicles certified every six months. The following are some recommendation action to reduce air pollution. . 1 Government (or community) Level prevention 5. 1. 1 Emphasis on clean energy resources Government throughout the world would have already taken action against air pollution by introducing green energy. Some governments are investing in clean energy technologies like wind energy and solar energy, as well as other renewable energy, to minimize burning of fossil fuels, which cause heavy air pollution. Governments are also forcing companies to be more responsible with their manufacturing activities, so that even though they still cause pollution, they are a lot controlled. 5. 1. Use energy efficient devices CFL lights consume less electricity as against their counterparts. They live longer, consume less electricity, lower electricity bills and also help you to reduce pollution by consuming less energy. Companies are also building more energy efficient cars, which pollute less than before. 5. 2 Individual Level Prevention 5. 2. 1 Use public mode Of transportation Encourage your family to use the bus, train or bike when commuting. Also, try to make use of carpooling. If you and your colleagues come from the same locality and have same timings you can explore this option to save energy and money.

If we all do this, there will be fewer cars on road and less fumes. 5. 2. 2 Conserve energy Use energy (light, water, boiler, kettle and fire woods) wisely. This is because lots of fossil fuels are burned to generate electricity, and so if we can cut down the use, we will also cut down the amount of pollution we create. 5. 2. 3 understand the concept of Reduce, Reuse and Recycle Recycle and re-use things. This will minimize the dependence of

producing new things. Remember manufacturing industries create a lot of pollution, so if we can re-use things like shopping plastic bags, clothing, paper and bottles, it can help. . BIBLIOGRAPHY REFERENCES or. Amandine Sings, MD, Dry. Vicar Guppy. MD, & Dry. Santos ass, MD. (2009). Volume 10. Number 2. November 2009. Air Pollution : Indian Scenario in The Pacific Journal of Science and Technology. [Http://www. Sentimentality. S/ PAST. HTML](http://www.Sentimentality.S/PAST.HTML) . Accessed 9 October 2013. John Fletcher (201 1). Air Pollution . Geography. Michelle Hobbler, (2003). Health An Ecosystem Approach. Wham. Dire. Ca/ cheesecloth . Accessed 9 October 2013. Website references: [http://en. M. Wisped. Org/WI ski/Kyoto_protocol](http://en.M.Wisped.Org/WI/ski/Kyoto_protocol) [http://en. M. Wisped. Org/WI ski/Air_poll lotion](http://en.M.Wisped.Org/WI/ski/Air_pollution) [http://environment. Cinematographic. Com/environment/global-warming/ pollution-overview](http://environment.Cinematographic.Com/environment/global-warming/pollution-overview) [http://schooldays. Com/pollution/air-pollution/air- pollution-prevention-HTML](http://schooldays.Com/pollution/air-pollution/air-pollution-prevention-HTML) [http://www. Mass. Gob/deep/air/aqua/envy_effects. HTML](http://www.Mass.Gob/deep/air/aqua/envy_effects.HTML) [http://www. Conserve-energy-future. Com/causes-effects-solutions-of-air- pollution. PH](http://www.Conserve-energy-future.Com/causes-effects-solutions-of-air-pollution.PH) . APPENDICES CASE STUDY : MEXICO CITY Taking Control of Air Pollution in Mexico City A clean air drive targets health improvements and health care savings Located in a pollutant-trapping valley, Mexico City ?? one of the world's largest cities ?? has had limited success in battling suffocating air pollution.

A new understanding of the health impacts of this pollution ?? and of people's role in both the problem and the solution ?? could lead to better targeted, more effective air improvement programs. Famous for its size, its history, and the warmth of its people, Mexico City is also infamous for its air pollution. In 1992, the United Nations described the city's air as the most polluted on the planet. Six years later, that air earned Mexico the reputation

of “ the most dangerous city in the world for children. ” This is a reputation Mexico has been working hard to improve.

But despite more than a decade of stringent pollution-control measures, a dull haze hangs over the city most days, obscuring the stunning snow-capped mountains that frame the city and endangering the health of its inhabitants. Many factors have contributed to this situation: industrial growth, a population boom (from 3 million in 1950 to some 20 million today), and the relaxation of vehicles. More than 3. 5 million vehicles ?? 30% of them more than 20 years old ?? now ply the city streets. Geography conspires with human activity to produce a poisonous scenario.

Located in the crater of an extinct volcano, Mexico City is about 2, 240 meters above sea level. The lower atmospheric oxygen levels at this altitude cause incomplete fuel combustion in engines and higher emissions of carbon monoxide, hydrocarbons, and volatile organic compounds. Intense sunlight turns these noxious gases into higher than normal smog levels. In turn, the smog prevents the sun from eating the atmosphere enough to penetrate the inversion layer that blankets the city. Solving this problem has been a priority of the Metropolitan Environmental Commission, which is integrated with local and federal authorities.

Recent efforts to curb emissions have been relatively successful. In the 1990s, for instance, the government introduced air quality improvement programs ?? PICA and PAired that include, among other measures, a rotating one-weekday ban on private car use. On days of high pollution, the ban extends to every second day and some manufacturing certified every six

months. But if lead, carbon monoxide, and sulfur dioxide are now under control, pollution levels of other contaminants are still far above air quality standards.

A closer look at pollution When PAIRED concluded in 2000, environmental authorities undertook a longer, ambitious air quality improvement program: PAIRED 2002-2010. TO develop the program, however, accurate measures were needed to determine how improving air quality would improve health and reduce health expenditures. A number of questions also needed to be answered about the relationship between the city's inhabitants and air pollution: How do people perceive pollution? How does it affect them? What are they willing to do or pay for cleaner air?

How can they be motivated to help solve it? The Mexico City government set out to answer these questions, with support from Canada's International Development Research Centre (DIRE) and the Netherlands Trust Fund through the World Bank and the Pan American Health Organization. If the first question was fairly simple ?? what is the economic value of benefits reaped from reducing air pollution? ?? answering it was not. " No one really knows, or understands, the relationship between environmental contaminants and the health of inhabitants," says biologist

Roberto Murmur Cruz, subdirectory of information and analysis at Mexico City's atmospheric monitoring system, part of the Secretariat del Media Ambient (department of the environment). The Secretariat coordinated the project in collaboration with the Center National De Salad Ambient (national centre for environmental health), the nongovernmental organization GREECE

(a study group on relations between the environment and behavior), and the Institute De la Mujer del Distrito Federal (Women's Institute of Mexico City).

The researchers focused on health hazards posed by the most serious pollutants in Mexico: ozone, produced when nitrogen oxides and volatile organic compounds react in sunlight, and PM₁₀ respirable particulate matter less than 10 microns (0.01 millimeters) in diameter. PM₁₀ comes from various sources, including road construction and dust, smoke-belching diesel trucks and buses, forest fires, and burning refuse in the open air. Both pollutants can irritate eyes, cause or aggravate a range of respiratory and cardiovascular ailments, and lead to premature death. "It's not air pollution that kills people," explains Munson, "but some people die sooner than they would otherwise. More than 20 researchers from eight academic, governmental, donor, and nongovernmental organizations in Mexico, the Netherlands, and the USA contributed to compiling and analyzing the findings of national and international studies of the health effects of ozone and PM₁₀. Surveys were also carried out "to determine people's perceptions of the pollution problem," says Munson. A population exposure model was then developed, using data from Mexico's sophisticated air-monitoring network.

The study estimated that pollution levels in 2010 will be much the same as in the late 1990s when ozone levels exceeded standards on almost 90% of days and PM₁₀ on 30% to 50% of days, explains Dr. Victor Boers-Abot, former Director of the Center National de Salud Ambiental at the Secretariat de Salud and now coordinator of workplace health, who led the project's first module.

Tangible benefits Earlier efforts to assess the Costs Of pollution in Mexico City had focused on direct medical costs such as medicines and hospital visits and on productivity losses ?? income lost by those who were sick.

This study, however, sought to provide a more comprehensive picture. Air quality and exposure meddlers, epidemiologists and public health specialists, economists and statisticians assessed a wide range of health benefits and “ savings,” including people’s willingness to pay for better health and a potentially longer life. Communications and social participation specialists worked to understand peoples’ perceptions and get at indirect costs because, as Munson explains, “ not only do people who get sick lose days from work, but also mothers stay home to take care of the children who get sick. It was an important transcriptional experience, says Munson. Bringing together different disciplines to provide a holistic picture ?? an approach central to cheesecloth research ?? proved very successful. And a strong connection was forged between the institutions and between government and research institutes. The research concluded that reducing PM 0 would yield the greatest health and financial benefits: each micrograms per cubic centimeter reduction would be worth about CSS\$1 00 million a year. Reducing both ozone and IMO by just 10% would result in average “ savings” offs\$760 million a year.

In human terms that would translate into, for example, 33, 287 fewer emergency room visits for respiratory distress in 2010 and 88 fewer hospital admissions for the same problem. In addition, says Mums, it would lead to 266 fewer infant deaths a year an important consideration not valued. “

Clearly this justifies relatively high expenditures to further reduce polluting emissions,” Munson says. Much to the project’s credit, this detailed information provided the scientific underpinning of PAIRED 2002-2010, which calls for close to US\$15 billion of public and private investments in air quality improvement projects.

The information has also been made available to the international community through a number of publications. What do Mexicans think? If people largely cause air pollution, they must also be involved in cleaning it up. Certainly the original PAIRED program recognized this and included various formal and informal programs to inform people about the problem and invite them to action. “ It recognized that a cultural change was needed to modify the society-city-environment relation,” says Munson. But in a city as large and as socially and culturally diverse as Mexico, that proved no easy task.

The research team surveyed close to 4, 000 residents in all sectors or delegations of the city. Completed questionnaires showed that close to 30% believe the government’s motives in seeking to reduce air pollution are silvering. More than 30% also think that the government’s online air quality reports are false. ([http://148. 243. 232. 103/amicable/](http://148.243.232.103/amicable/)) In fact, says Munson, ‘ We found that most people don’t even consult the official information.