International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Causes of Environmental Pollution and Conservation Management

Dr. K. Kanagarathinam

M.Sc., M.Phil.,M.A.,M.Phil.,MA.,B.Ed.,MBA.,PhD., Assistant Professor Dept.of Environmental Science, Sri Subash Arts & Science College, Pollachi,Coimbatore District -642 002, Tamilnadu –India

ABSTRACT

Pollution of the environment is one of the most serious ecological crisis to which are the pollution of the environment for living organism are air, land or soil and water. In the past, these amenities were pure virgin, undisturbed, uncontaminated and basically most hospitable for living organisms. But the situation is just the reverse today, because progress in science and technology is also leading to pollution of environment and serious ecological imbalance which is in the long run may prove disastrous for mankind. Environmental pollution is the result of urban industrial technological revolution and speedy exploitation of every bit of natural resource. Environmental pollution means the introduction of waste by man into any part of the environment, changes the environment directly or indirectly adversely to affect the opportunity of men to use or enjoy it. Environment pollution means any solid, liquid or gaseous substances present in such concentration as may be or tend to the injurious to environment and human being are known as pollutant and presence of any pollutant in the environment in such proportion and concentration that has bearing on health and environment to termed as environment pollution.

Keywords: environmental pollution, nature sources of Pollution

INTRODUCTION

There are many ways of environmental pollution caused by human activities, most of people unaware about the environmental benefits. Trees can live without human, but human cannot live without, it is university truth. There are so many pollution in the world i.e. air pollution, land pollution, water pollution, Burning fuel, Chimney Smoke, Industrial Waste, Groundwater pollution and sound pollution which are very dangerous category of pollution, due to the pollution human life mostly affected and arises so many health problems and disease.

Objectives of the study

- To analyse an environmental pollution and its causes to human life
- To analyse water and air pollution causes
- To analyse various control activities for environmental pollution

REVIEW OF LITERATURE

Hanlon (2018) In addition to environmental disasters such as oil spills and leakage, general energy consumption has an impact on air quality and health. In particular, the decline in air quality caused by

coal fires and straw burning leads directly to an increase in mortality. Beach, provide the first estimate of the mortality effects of British industrial coal use in 1851–1860. The results indicate that local industrial pollution had a powerful impact on mortality. Raising local industrial coal use by one standard deviation above the mean increased infant mortality by roughly 6–8% and mortality among children under five by 8–15%.

et al. (2020) Farmers often burn straw after a harvest, which is the main cause of seasonal air pollution in developing countries. Based on agricultural straw burning satellite data, use non-local straw burning as an instrumental variable for air pollution to estimate the impact of straw burning on air pollution and health. The results show that straw burning increased particulate matter pollution and caused people to die from cardiorespiratory diseases. Middle-aged individuals and the elderly in rural areas are more sensitive to such pollution. Furthermore, using a difference-in differences approach, the authors find that China's recent straw recycling policy has effectively improved the country's air quality.

Beland and Oloomi (2019) and **Marcus (2021)** quantify the health impact of petroleum pollution on infant health in the United States by using the 2010 oil spill in the Gulf of Mexico and the leakage of underground storage tanks as exogenous events. Exploiting a difference-in-differences design, Beland and Oloomi (2019) find that the oil spill of 2010 raised concentrations of $PM_{2.5}$, NO_2, SO_2, and CO in the affected coastal counties and increased the incidence of low-birthweight and prematurely born infants. Marcus (2021) finds that exposure to a leaking underground storage tank during gestation increases the probability of both low birthweight and preterm birth by 7–8%. In addition, all the studies mentioned above find that prenatal exposure to pollution had a heterogeneous impact on mothers with different individual characteristics (age, race, marital status, etc.). The infants of black, Hispanic, less educated, unmarried, and younger mothers suffer from more pronounced adverse health outcomes (Beland & Oloomi, 2019). Marcus (2021) also finds that the adoption of preventative technologies mitigated the entire effect of storage tank leak exposure on birthweight, and information increased avoidance and moving among highly educated mothers.

Types of Environmental Pollution

The modern lifestyle riddled with large industrial sites, factory farms power plants and countless automobiles produces quite a few types of environmental pollution. The effects of these pollutions are seen in nearly every produces. The effects of these pollutions are seen in nearly every aspect of our lives, contaminating the air, water, soil and even our bodies. Learning about these contaminates, how they are produced and how they affect the environment and our lives, is important in order to reduce or eliminate these harmful substances in the future. Following are different types of environmental pollution.

Air Pollution

Air pollution is basically the presence of foreign substances in air in excessive concentration which adversely the wellbeing of the individual or cause damage to property. Wherever we live, the air is contaminated. The earliest pollutions noted in the atmosphere were of natural origin, like smoke, fumes, ash and gases from volcanoes and forest fire or sand and dust from windstorm , or any other natural sources. But the real problems of air pollution is seen when human induced or anthropogenic sources

started emitting pollutants. Considering all these, specific definitions of air pollution are given or adopted by different organisations and countries.

Air pollution is defined as substance put into air by the activity of mankind into concentration sufficient to cause harmful effect to his health, vegetables, property or to interfere with the enjoyment of his property. Air pollution is the presence in ambient of substances generally resulting from the activity of man, in sufficient concentration present for a sufficient time and under circumstances which inference significantly with the comfort, health or welfare of person or with the full use of enjoyment of property.

Water pollution

Water is the most important continent of the life support system because it is vital for the maintenance of all form of life and on the other hand it helps in the movement, circulation and cycling of nutrients in the biosphere. Tough water like other natural substances has self-purifying capacity during recycling processes but when the foreign undesirable substances are added. It exceeds the tolerance level and self purifying capacity of water when gets polluted. Thus water pollution may be defined as deterioration of physical, chemical and biological characteristics of water through natural and anthropogenic activities to such an extent that it becomes harmful to human beings, plants and animal communities. Water pollution means the presence of any toxic substances in water that degrades the quality to constitute a hazard or impair its usefulness.

Natural sources

Dust from natural sources : These are usually large areas of land with little or no vegetation. Methane : This is emitted by the digestion of food by animals for example cattle.

Radon Gas : Radon is a colourless, odourless, naturally occurring, radioactive noble gas that is formed from the decay of radium. It is considered to be a health hazard. Radon gas from natural sources can accumulate in buildings, especially in confined areas such as the basement and it is the second most frequent cause of lung cancer, after cigarettes smoking, emitted from radioactive decay within the Earth's crust.

Cardiovascular Problem

Carbon binds to haemoglobin modifying its confirmation and reduces its capacity to transfer oxygen. This reduced oxygen availability can affect the function of different organs and especially high oxygen consuming organs such as the brain and the heart resulting in impaired concentration slow reflex and confusion. Apart from lung inflammation systemic inflammatory changes are induced by particulate matter, affecting equally blood coagulation. Air pollution that induces lung irritation and changes in blood clotting can obstruct cardiac blood vessels, leading to angina or even to myocardial infraction symptoms such as tachycardia, increased blood pressure and anaemia due to an inhibitory effect on haematopoiesis have been observed as a consequence of heavy metal pollution (specifically mercury. Nickel and arsenic)

Nervous System Problem : The nervous system is mainly affected by heavy metals (lead, mercury and arsenic) and dioxins. Neurotoxicity leading to neuropathies, with symptom's such as memory disturbances, sleep disorders, anger fatigue, hand tremors, blurred vision and slurred speech have been observed after arsenic lead and mercury exposure.

Urinary Problems

Heavy metals can induce kidney damage such as an initial tubular dysfunction evidenced by an increased excretion of low molecular weight proteins, which progress to decreased glomerular filtration rate (GFR) in addition they increased the risk of stone formation or nephrocalcinosis and renal cancer.

Digestive Problem

Dioxines include liver cell damage, as indicated by an increase in levels of certain enzymes in the blood as well as gastrointestinal and liver cancer.

Digestive Problems

Dioxins induce liver cell damage as indicated by an increase in levels of certain enzymes in the blood as well as gastrointestinal and liver cancer.

Effect on Animal Health

Air Pollution effect on animal health respiratory problems, volatile organic compounds and nitrogen oxides, emitted from industrial process; undergo chemical transformation in the atmosphere in the presence of sunlight to form ozone. Ozone, sulphur dioxide and nitrogen dioxide primarily affect the respiratory system and it is likely that birds are even more susceptible to gaseous pollution injury than mammals due to their higher respiratory rates.

Acid Rain

When contaminations combine with moisture in the air, the result is acidic precipitation also called acid rain. Acid rain can contaminate or kill plants which in turn may be ingested by wildlife. It can also have more dangerous and long term effects. Acid rain leaching into soils can alter the pH levels, making life unsustainable. Likewise changes in acidity in water resources can kill fishes.

Deaths due to cancer

Tropospheric ozone near the Earth's surface cause damage to lung tissue in wildlife, making them more susceptible to disease. Tropospheric ozone is a secondary ozone layer produced from chemical emissions and pollutants, combined with sunlight. As the protective stratospheric ozone layer degrades due to pollution an increase in ultraviolet radiation can increase wildlife death due to cancer.

Conclusion

Above analysis shows, in many ways, environment is polluted in the world. i.e air pollution, water pollution, land pollution etc. Due to this pollution there are so many human health damages caused. Because water and air pollution quickly cause human health effects and so many illness, totally damaging the whole body

SUGGESTION

Basically there are four approaches available for the control of emissions discharged into the atmosphere. They are

Minimising Air Pollution : This is one through allocation of land i.e. by proper planning and zoning of Industrial areas.

Dispersion of Source Locations : Air pollution can be controlled / checked by dispersion of the sources. By using tall stacks for industries or thermal plants the emission or pollution can be discharged at a sufficient height from the ground, where the air movement both horizontal and vertical is more and chance of downward movement of air (i.e. inversion conditions) are less. This will help in dispersion of pollution over a large area in less time and hence dilute the concentration of pollutions near the source.

Reduction at source by process changes : This can be achieved by

1. Substitution of raw materials e.g/. the use of low volatile coal, eliminates smoke and smog.
2. Modification of the process e.g. in case of disposal of combustible refuse, sanitary landfill can be used instead of incinerators.
3. Modification of the process, equipment or repair and maintenance of existing equipment helps in reducing helps in reducing atmospheric pollution.

Controlling air pollution of particulate matter

Following are type ways controlling particulate pollution.

i. Choosing cleaner fuels
ii. Low ash fossil fuels contain less non combustible ash forming mineral matter and thus generate lower levels of particulate emissions
iii. Reduction of ash by coal cleaning reduces the generation of particulate matter emissions.
iv. Programs to reduce emission from wood stoves and fireplaces.
v. Electrostatic precipitators (ESP)
vi. Filters and dust collectors
vii. Wet scrubbers that rely on a liquid spray to remove dust particles from a gas stream.

REFERENCE

1. Abt E, Suh HH, Allen G, Koutrakis P. Characterization of indoor particle sources: A study conducted in the metropolitan Boston area. Environ Health Perspect. 2000;108(1):35–44.
2. Abu-Allaban M, Hamasha S, Gertler A. Road dust resuspension in the vicinity of limestone quarries in Jordan. J Air Waste Manag Assoc. 2006;56(10):1440–4.
3. Abu-Allaban M, Lowenthal DH, Gertler AW, Labib M. Sources of PM(10) and PM (2.5) in Cairo's ambient air. Environ Monit Assess. 2007;133(1-3):417–25.
4. Aburas HM, Zytoon MA, Abdulsalam MI. Atmospheric lead in $PM_{2.5}$ after leaded gasoline phase-out in Jeddah City, Saudi Arabia. Clean Soil Water. 2011;39(8):711–9
5. Adamkiewicz G, Zota AR, Fabian MP, Chahine T, Julien R, Spengler JD, et al. Moving environmental justice indoors: understanding structural influences on residential exposure patterns in low-income communities. Am J Public Health. 2011;101(S1) Suppl 1:S238–45.
6. Agay-Shay K, Friger M, Linn S, Peled A, Amitai Y, Peretz C. Air pollution and congenital heart defects. Environ Res. 2013;124:28–34.

7. Barbato D, Tomei G, Tomei F, Sancini A. Traffic air pollution and oxidatively generated DNA damage: can urinary 8-oxo-7,8-dihydro-2-deoxiguanosine be considered a good biomarker? A meta-analysis. Biomarkers. 2010;15(6):538–45.
8. Battye W, Aneja VP, Roelle PA. Evaluation and improvement of ammonia emissions inventories. Atmos Environ. 2003;37(27):3873–83.
9. Bayraktar H, Turalioğlu FS, Tuncel G. F. S Turaliogçlu, and G. Tuncel. Average mass concentrations of TSP, PM_{10} and $PM_{2.5}$ in Erzurum urban atmosphere, Turkey. Stochastic Environ Res Risk Assess. 2010;24(1):57–65.
10. Beckx C, Int Panis L, Van De Vel K, Arentze T, Lefebvre W, Janssens D, et al. The contribution of activity-based transport models to air quality modelling: a validation of the ALBATROSS-AURORA model chain. Sci Total Environ. 2009;407(12):3814–22.
11. Clark NA, Allen RW, Hystad P, Wallace L, Dell SD, Foty R, et al. Exploring variation and predictors of residential fine particulate matter infiltration. Int J Environ Res Public Health. 2010;7(8):3211–24.
12. Clean Air Asia (2010). Air quality in Asia: status and trends – 2010 edition. Pasig City, Philippines: Clean Air Initiative for Asian Cities (CAI-Asia) Center. Available from: http://cleanairasia.org /portal/system/files/Air_Quality_in_Asia_-_Status_and_Trends_2010_Ed._0.pdf.
13. Clean Air Institute (2012). Air quality in Latin America: an overview. Available from: http://www .cleanairinstitute.org/calidaddelaireamericalatina/cai-report-english.pdf, accessed 29 January 2015.
14. Clemitshaw KC. A review of instrumentation and measurement techniques for ground-based and airborne field studies of gas-phase tropospheric chemistry. Crit Rev Environ Sci Technol. 2004;34(1):1–108.
15. Cohan DS, Hakami A, Hu Y, Russell AG. Nonlinear response of ozone to emissions: source apportionment and sensitivity analysis. Environ Sci Technol. 2005;39(17):6739–48.