Saarth
E-Journal of Research

ISSN NO: 2395-339X

Environment and Pollution Remedy

Prof. Rupal G. Brahmbhatt*

Environment means the sum total of all surroundings consisting of living organisms, including all the natural forces and other living beings which have been provided the conditions for living, development and growth. This also creates chances for danger and damages is collectively called environment.

There is a lot of talk about environmental degradation around us. Lot of seminars and conferences are being held every year and new areas like CDM (Clean Development Mechanism) and Carbon credits are being created to prevent further damage and to encourage protection of the environment.

There is deforestation happening all over the world, to harness forest resources, to clear land, for wood and for various other reasons. Deforestation had caused major problems for one simple reason; it decreases the number of trees and which cleans the environment. It provides oxygen and also affects rain patterns. This is the major reason for aggressive forestation so as to make up for this loss. The decrease in the forest cover also creates soil erosion which binds the land together so that it is not washed away during floods and other natural calamities.

Chemical effluents are another by-product of industries which is a strong threat to the environment. The effluents released from leather and tanning industries, petroleum industries and chemical manufacturing industries which create major waste and they are released directly into nearby rivers without treatment. This pollutes the rivers and affects the aquatic life. Regulatory authorities have formed rules for effluent treatment of the wastes but the implementation is poor.

Due to increased spending power amongst the youth and the working population the number of cars on the road has increased. The amount has grown exponentially in countries like India, Brazil and China. Further, this directly affects the humans through air pollution. The hydrocarbons released from the vehicular pollution are the cause of creation of lower level ozone that is harmful to humans.

Urban heat island is caused by unprecedented construction activities in an urban area because of which that area remains relatively warmer than the surroundings. This phenomenon causes the trapping of pollutants. Urban Heat island is an effect caused due to trapping of solar radiation by concrete and cement which are materials which trap heat extremely well. Construction causes removal of vegetative cover which usually allows for better exchange of heat. The circulation of air is affected due to urban heat island because it traps the pollutants released in urban areas and does not allow for mixing of the air which eventually decreases the air quality.

Secondary pollutants are not directly emitted but they are created as a result of primary pollutants react amongst themselves. There is a creation of ozone from reaction between non burnt hydrocarbons and Nitrous Oxides.

***Prof. Rupal G. Brahmbhatt , Ahmedabad**

Saarth
E-Journal of Research
ISSN NO: 2395-339X

These gases and other reactions led to the formation of ozone holes.Excess usage of fertilizers, overgrazing and shifting agriculture are degrading land and creating soil erosion that leads to silting in major rivers and reservoirs. Soil degradation is a continuous cycle and it ultimately leads to desertification and degradation of land quality by allowing the direct action of eroding agents on cultivable land.

The increasing population creates a pressure on the entire environment in terms of food, lodging and water. It's difficult for the environment to sustain the amount of waste that is being generated out of such huge population. All major activities are carried out to support this growing population, and whilst this is unavoidable, what is required is the proper planning that should come with this explosion.

Air pollution

Air pollution is the release of biological molecules and other harmful substances in to earth's atmosphere which causes diseases, allergies and death to the human beings and other living beings.

The burning of fossil fuels is the major source of air pollution. Sulphur dioxide is emitted from the burning of coal, petroleum and other factory combustible. Pollution emitted from vehicles like trucks, cars, trains, airplanes has caused immense pollution. Ammonia is released in to the atmosphere by way of usage of heavy pesticides and fertilizers in the agriculture field. Further the harmful chemicals that are released into the air also cause water pollution.

The biggest reason by far for all kinds of environmental degradation is the excessive amount of gases, harmful to the environment, which is released by the various industries. Prime amongst these gases are C02 (Carbon Dioxide), S02 (Sulphur Dioxide) and NH3 (Ammonia). Further, there are many more and these are the main culprits for ozone holes and global warming. Further large amount of carbon monoxide, hydrocarbons, organic compounds are released into the air which is depleting the air quality. Though laws have been formed with regards to the air pollution but the implementation is weak.

Mining industries have created a lot of air pollution recently because it releases particulate matter, which qualifies as Respirable Particulate Matter (RPM). It is a particulate matter which can enter our lungs and can eventually harm the entire respiratory system. This is responsible for direct harm to humans as it also comes from the indoor sources of pollutions like traditional choolahs.

Extraction from mines renders the land unusable for habitation and if rehabilitation work is not carried out, the piece of land is sure to lose all its value and become unusable. Land classification is one of the major activities that help in proper land use, and it should be followed with utmost care. Considerable areas of Indian mines have been rendered useless due to consistent mining activities.

Several respiratory problems and heart ailments have known to be developed due to the air pollution. Several deaths have been reported due to direct or indirect

Saarth
E-Journal of Research
ISSN NO: 2395-339X

effects of air pollution. Children exposed to air pollution suffer from pneumonia and asthma. Global warming is also the result of air pollution. With increase in air pollution the average temperatures have risen globally. This has resulted in the melting of the ice in the Polar Regions. Sea levels have increased due to melting of ice across the world.

Eutrophication is a condition where high amount of nitrogen present in the pollutants develops on the sea surface which creates algae which adversely affects fish, aquatic plants and other species. The presence of algae in various ponds and rivers is because of these phenomena.

Companies like Philips, Kent and Blue air have come up with air purifiers to clean the surrounding air. The sale of these air purifiers in these polluted cities is encouraging with its use being done in office as well as residential. Bharat stage emission standards' are emission standards instituted by the Government of India to regulate the output of air pollutants from internal combustion engine equipment, including motor vehicles. The standards and the timeline for implementation are set by the Central Pollution Control Board under the Ministry of Environment & Forests and climate change.

All new vehicles manufactured after the implementation of the norms have to be compliant with the regulations. Since October 2010, Bharat Stage (BS) III norms have been enforced across the country. In 13 major cities, Bharat Stage IV emission norms have been in place since April 2012.In 2016, the Indian government announced that the country would skip the BS-V norms altogether and adopt BS-VI norms by 2020. The phasing out of 2-stroke engine for two wheelers, the stoppage of production of Maruti 800 & introduction of electronic controls have been due to the regulations related to vehicular emissions.

The list of world’s top 20 cities for air pollution rank wise is below.

Water Pollution

Water pollution is the contamination of water bodies (e.g. lakes, rivers, oceans, aquifers and groundwater). This form of environmental degradation occurs when pollutants are directly or indirectly discharged into water bodies without adequate treatment to remove harmful compounds.

Sewage disposal is a major contributor to water pollution. According to a 2013 figures from the World Health Organization, some 780 million people (11 percent of the world's population) don't have access to safe drinking water, while 2.5 billion (40 percent of the world's population) don't have proper sanitation (hygienic toilet facilities); although there have been great improvements in securing access to clean water, relatively little progress has been made on improving global sanitation in the last decade. Sewage disposal affects people's immediate environments and leads to water-related illnesses such as diarrhea that kills 760,000 children under five each year. (Back in 2002, the World Health Organization estimated that water-related diseases could kill as many as 135 million people by 2020. In developed countries,

Saarth
E-Journal of Research

ISSN NO: 2395-339X

most people have flush toilets that take sewage waste quickly and hygienically away from their homes.

Half of all ocean pollution is caused by sewage and waste water and each year the world generates perhaps 5–10 billion tons of industrial waste. Much of the waste is pumped untreated into rivers, oceans, and other waterways. In the United States alone, around 400,000 factories take clean water from rivers and most of them pump polluted waters back in their place. However, there have been major improvements in waste water treatment recently.

As population has grown, so has the demand for housing, food and cloth. Therefore as more cities and towns are developed it has also increased the need to use more fertilizers to produce more food. Inadequate sewer collection and treatment, landfills as more garbage is produced, increase in chemicals from industries to produce more materials all collectively are leading to water pollution.

The laws for treatment of effluent water have been enacted by the states but the implementation is very weak. Further, as the cost increases for doing the treatment, the promoters are not willing to adopt it.

The below mentioned monitored river stretches are polluted. Fifty percent of underground water sources in Indo- Gangetic plains is contaminated. Further, fifty percent of lakes and wetlands is lost between 1911 to 2014 in India.

References

Wikipedia – Air Pollution

www.conserve-energy-future.com – causes and effects of air pollution.

Wikipedia - List_of_most_polluted_cities_by_particulate_matter_concentration

Wikipedia – Water Pollution

World Health Organisation – Diarrhoeal Disease

Hindustan Times News – Out of world's top 20 polluted cities in India only three-in China

Wikipedia - Bharat Stage emission standards