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SABUJEEMA

An International Multidisciplinary e-Magazine
Volume 1| Issue 5 | August, 2021

ENVIRONMENTAL DEGRADATION

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Sabujeema Sabujeema
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sabujeema-international multidisciplinary-e-magazine

ENVIRONMENTAL DEGRADATION

[Article ID: SIMM0105]

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INTRODUCTION

Environmental degradation comes about due to erosion and decline of the quality of the natural environment. It is caused directly or indirectly by anthropogenic activities that extract various environmental resources at a faster rate than they are replaced, and thus depleting them. On this regard, degradation means damage or reduction in quality of environmental features, primarily influenced by human activities. Some natural events such as landslides and earthquakes may also degrade the nature of our environments. Continued environmental degradation can completely destroy the various aspects of the environment such as biodiversity, ecosystems, natural resources, and habitats. For instance, air pollution can lead to the formation of acid rain which can in turn reduce the quality of natural water systems by making them acidic. This is a typical example of environmental degradation. Environmental degradation is therefore a concept that touches on a variety of topics namely deforestation, biodiversity loss, desertification, global warming, animal extinction, pollution, and many more.

CAUSES OF ENVIRONMENTAL DEGRADATION

1. Overpopulation and Over-exploitation of Resources

As the human population keeps on enlarging, there is a lot of pressure on the utilization of natural resources. This often causes over-exploitation of the natural resources, and contributes to environmental erosion. According to a study by the UNEP Global Environment Outlook, excessive human consumption of the naturally occurring non-renewable resources can outstrip available resources in the near future and remarkably destroys the environment during extraction and utilization. Overpopulation simply means more pollution and fast extraction of natural resources compared to how they are being replaced.

2. Ruinous Agricultural Practices

Intensive agricultural practices have led to the decline in quality of most of our natural environments. Majority of farmers resort to converting forests and grasslands to croplands which reduces the quality of natural forests and vegetation cover. The pressure to convert lands into resource areas for producing priced foods, crops, and livestock rearing has increasingly led to the depreciation of natural environments such as forests, wildlife and fertile lands.

Intensive agricultural practices destroy fertile lands and nearby vegetation cover due to the accumulation of toxic substances like bad minerals and heavy metals which destroy the soil's biological and chemical activities. Runoffs of agricultural wastes and chemical fertilizers and pesticides into marine and freshwater environments have also deteriorated the quality of wild life habitats, natural water resources, wetlands and aquatic life.

3. Landfills

One of the calamitous effects of landfills is the destruction of nearby environmental health together with its ecosystems. The landfills discharge various kinds of chemicals on the land adjacent to forest, various natural habitats, and water systems such as underground and surface water which makes the environment unappealing to the survival of trees, vegetations, animal and humans.

It even interferes with the animals interactive food chains because the chemicals contaminate plants, and waters which are consumed by the animals. Besides the foul smell from the landfills and periodic burning of the wastes make living in such environments unbearable.

4. Increase in Deforestation

The act of deforestation (cutting down of trees) has impacted on the world in terms of depreciating the natural environment and wildlife. It has also impacted on humans on the account of changes in environmental support processes such as weather conditions. Some of the reasons for deforestation include farming, construction, settlement, mining, or other economic purposes. For more than one hundrend years, the number of trees on the planet has plummeted, resulting in devastating consequences such as biodiversity loss, soil erosion, species extinction, global warming, and interference with the water cycle.

5. Environmental Pollution

Most of the planet's natural environments have been destroyed and a large portion is under huge threat due to the toxic substances and chemicals emitted from fossil fuel combustions, industrial wastes, and homemade utilities among other industry processed materials such as plastics. Land, air, and water pollution pose long-term cumulative impacts on the quality of the natural environments in which they occur.

Seriously polluted environments have become insignificant in value because pollution makes it harsh for the sustainably of biotic and abiotic components. Pollution impacts the chemical compositions of lands, soil, ocean water, underground water and rocks, and other natural processes. Air pollution from automobiles and industries that results in the formation of acid rain which in turn brings about acidic lake is a good example of how the environment is degraded by pollution.

6. Improper Land use Planning and Development

The unplanned conversion of lands into urban settings, mining areas, housing development projects, office spaces, shopping malls, industrial sites, parking areas, road networks, and so on leads to environmental pollution and degradation of natural habitats and ecosystems. Mining and oil exploration, for instance, renders land unusable for habitation and causes other forms of environmental degradation by releasing toxic materials into the environment. Improper land use has led to the loss and destruction of millions of acre of natural environments across the globe.

EFFECTS OF ENVIRONMENTAL DEGRADATION

1. Impact on Human Health

Human health is heavily impacted by environmental degradation. Reduction in water quality is responsible for more than two million deaths and billions of illness annually

across the globe. Due to environmental degradation, the results include water scarcity and decline in quality foods. Reduction in air quality is responsible for more than 300,000 deaths annually and millions of chronic diseases.

Landfills increase the risk of hazardous materials getting into the food chain which causes biomagnification and the ultimate risk of developing chronic diseases. Altogether, the toxic wastes and harmful chemicals from factories, agriculture and automobiles cause illnesses and death in children and adults.

2. Poverty

In the majority of developing countries, poverty is attributed to poor crop harvests and lack of quality natural resources that are needed to satisfy basic survival needs. The inadequacy basic survival resources and lack of quality of food is the direct result of environmental degradation in the regions. Most vulnerability situations brought about by water shortages, climate change, and poor crop yields in developing countries are tied to environmental degradation. Hence, the lack of access to adequate basic needs such as water and food directly induce poverty.

3. Atmospheric Changes

Environmental degradation can alters some of the natural process such as the water cycle and the normal processes of animal and plant activities. Also, environmental degradation aspects such as deforestation and mining destroy the natural land cover. This, together with air, water, and land pollution pose several atmospheric alteration threats. The alterations include global warming and climate change which can increase the risks of climatic natural disasters, and ozone layer depletion which increases the risk of skin cancer, eye disease, and crop failure.

4. Loss of Biodiversity

Degradation of the environment has recorded a continued destruction of wild forests and the damage of natural ecosystems that has greatly contributed to the mass extinction of species. The number of threatened species persists to multiply worldwide whereas some have completely gone extinct. This is because of the human activities such as acidifying water systems, over-exploitation of natural resources, overpopulation, and the deliberate and indirect destruction of natural systems necessary for the survival of different species. These anthropogenic activities simply alter the natural process combined, thus, destroying the natural ecosystems supporting biodiversity.

5. Scarcity of Natural Resources

Environmental degradation through aspects such as over-exploitation of natural resources, pollution, and deforestation can contributes to the scarcity of resources particularly arable land, water, genetic resources, medicinal plants, and food crops.

OZONE LAYER DEPLETION

Ozone layer depletion is one of the most serious problems faced by our planet earth. It is also one of the prime reasons which are leading to global warming. Ozone is a colourless gas which is found in the stratosphere of our upper atmosphere. The layer of ozone gas is what which protects us from the harmful ultraviolet radiations of the sun. The ozone layer absorbs these harmful radiations and thus prevents these rays from entering the earth's atmosphere. Ultraviolet

radiations are high energy electromagnetic waves emitted by the sun which if enters the earth's atmosphere can lead to various environmental issues including global warming, and also a number of health related issues for all living organisms. Thanks to the ozone layer which protects us from these harmful rays.

The main things that lead to destruction of the ozone gas in the ozone layer. Low temperatures, increase in the level of chlorine and bromine gases in the upper stratosphere are some of the reasons that leads to ozone layer depletion. But the one and the most important reason for ozone layer depletion is the production and emission of chlorofluorocarbons (CFCs). This is what which leads to almost 80 percent of the total ozone layer depletion.

GREENHOUSE EFFECT

The greenhouse effect is caused by the interaction of the sun's energy with greenhouse gases such as carbon dioxide, methane, nitrous oxide and fluorinated gases in the Earth's atmosphere. The ability of these gases to trap heat is what causes the greenhouse effect.

Greenhouse gases are made of three or more atoms. This molecular structure makes it possible for these gases to trap heat in the atmosphere and then re-emit it towards the surface which further warms the Earth.7This continuous cycle of trapping heat leads to an overall increase in global temperatures. This process, which is very similar to the way a greenhouse works, is why the gases that can produce this effect are collectively known as greenhouse gases.

The principal forcing gases of the greenhouse effect are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Fluorinated gases

The main feedback gas of the greenhouse effect is:

- Water vapor

Carbon dioxide, methane, nitrous oxide and the fluorinated gases are all well-mixed gases in the atmosphere that do not react to changes in temperature and air pressure, so the levels of these gases are not affected by condensation.4 Water vapor on the other hand, is a highly active component of the climate system that responds rapidly to changes in conditions by either condensing into rain or snow, or evaporating to return to the atmosphere. Thus the impact of the greenhouse effect is primarily circulated through water vapor, and it acts as a fast feedback.

Carbon dioxide and the other non-condensing greenhouse gases are the key gases within the Earth's atmosphere that sustain the greenhouse effect and control its strength. Water vapor is a fast-acting feedback but its atmospheric concentration is controlled by the radiative forcing supplied by the non-condensing greenhouse gases.

In fact, the greenhouse effect would collapse were it not for the presence of carbon dioxide and the other non-condensing greenhouse gases. Together the feedback by the condensing and the forcing by the non-condensing gases within the atmosphere both play an important role in the greenhouse effect.

Disposal Steps for Hazardous Waste Generator Companies

If a company is a hazardous waste generator, this is what it has to do to keep in line with the current regulations:

- First, identify the hazardous waste generated by the company;
- Count the total weight of the hazardous materials produced in a month. Determine in which of the three generator categories the company falls in: Large Quantity Generator (more than 1,000 kilograms), Small Quantity Generator (100 – 1,000 kilograms) or Conditionally Exempt Small Quantity Generator (less than 100 kilograms);
- Large and Small Quantity Generator should notify the EPA of hazardous waste activities.
- Companies should manage toxic waste categories according to specific regulations for each category.
- Hazardous waste should be transported from the company's site to an off-site waste management facility. Proper forms and reports are required.
- Handling toxic waste includes recycling, treating or disposing of the materials.

The simplest way to ensure environmentally responsible disposal of hazardous waste is to contact an environmental recovery or waste disposal team. They are well-versed in the local, state, and federal regulations, so they will handle and dispose of hazardous waste materials in accordance to the law.

Understanding the Four Characteristics of Hazardous Waste

When it comes to hazardous waste disposal and management, understanding the waste your organization generates is imperative. Hazardous waste is heavily regulated, and thus cannot just be tossed out with your everyday trash. To know if you're handling hazardous waste, the first step is to assess its characteristics.

When categorizing hazardous waste, the EPA breaks it down by four characteristics:

- ignitability, or something flammable
- corrosivity, or something that can rust or decompose
- reactivity, or something explosive
- toxicity, or something poisonous

These high level categories each have their own characteristics that further help you as a generator define with what your are dealing.

IGNITABILITY

There are three types of ignitable forms:

- Liquids with a flash point–the lowest temperature at which fumes above waste ignite–of 60 degrees Celsius or 140 degrees Fahrenheit. Examples include alcohol, gasoline, and acetone.
- Solids that spontaneously combust.
- Oxidizers and compressed gasses.

CORROSIVITY

Corrosive substances, such as hydrochloric acid, nitric acid, and sulfuric acid, have the ability eat through.

CONCLUSION

Enviormental degradation needs to be stopped with unique methodologies so that conservation and awareness of mother nature is given more perspective area in future with broader aspects. Everyone must come forward for this initiative.