

Effect of Solid Waste on Climate Change- A Review

Assistant Professor Vikrant Kumar, Assistant Professor Mohd Nayeem Ali,

Assistant Professor Anjali Jakhar

Department of Agriculture I
Shri Ram College, Muzaffarnagar (UP)

Abstract- Environmental science plays an important part in our daily life. It helps in solving the various issues which are arising in the environment very rapidly and without the checks. It is a burning topic at present. The objectives of the study are to know the global warming, climate change, environmental pollutions and solid waste management. This research is fully based on the secondary data. In this research I analyses the causes and their effects of environmental issues on human beings as well as on plants. I relies that these environmental issues has become a threat to everything and everyone on earth. In environmental issues, each country's own contribution to worldwide emissions is small so that to solve global environmental problem one needs coordinated actions between countries.

Index Terms- global warming, pollution, Climate Change, Environment etc.

I. INTRODUCTION

The word environment has been derived from the French word 'Environmer' meaning thereby the surroundings or which encompasses the living organism and human beings viz. air, water, food, and light. In other word it is the sum total of the air, water, land and their relationship with organisms and human beings. The changing nature of environment may benefit or harm the living organisms which are present in it. That is why some of the species have vanished from the earth, for example, the dinosaurs. This change is natural. But man is also responsible for changing the face of the earth for his timely benefits, which has resulted in disasters. Such as the socio-economic problems can be understood and managed through the studies of education, sociology and economics. Laws help in enforcing environmental laws formulated by the government from time to time. Environmental science plays an important part in our daily life. It helps in solving the various issues which are arising in the environment very rapidly and without any checks. It is a burring topic at present. Main global environmental issues:

The importance of environmental study in solving the environmental issues shall be clearer on the following points:-

- Global warming
- Climate change
- Environmental pollution

II. DATA BASE AND RESEARCH METHODOLOGY

The present study was entirely based on the secondary data. Therefore required data is collected from the different

research, books, articles and published journals on the above topic. In the present research I tried to evaluate the causes, effect.

Global Warming

Global warming means the rise in the global temperature to a level which affects the life forms. The earth's atmosphere contains group of gases known as 'Greenhouse Gases'. The prominent greenhouse gases which are responsible for the increase in mean global temperature are water vapours, carbon dioxide, methane, nitrous oxide, CFCs etc. The concentration of carbon dioxide in the atmosphere was 311p.p. mv in 1957 which increased to 340p.p. mv in 1990 and 370p.p. mv in 2000. The destruction of forests and degradation of soils added an estimated 6 billion tones of carbon dioxide to the atmosphere. Methane is 50 times more powerful in trapping heat than carbon dioxide. Global warming has been nuisance to environmentalist in recent years. It has been affecting earth's oceans habitats and biodiversity over the years. Scientist have conducted experiments to understand the causes and effects of global warming and they have searched for solutions.

Effects of Global Warming

- There will be a major shift in fish population from tropical to sub-tropical marine regions.
- The plants and animal will be affected and this will disrupt the ecosystem.
- Human health may also be affected as rising temperature expand the areas vulnerable to tropical diseases as malaria and dengue.

Control and Remedial Measures

- International co-operation for reduction of greenhouse gases.
- Minimizing the use of nitrogen fertilizer in agriculture for reducing N₂O emissions.
- Learn to adopt and accept the changing climate.
- Developing substitutes for chloro fluoro carbons.

III. CLIMATE CHANGE

The variation in climate during historical time dating back to few thousand years, collectively called climate change. There are variations in occurring within a period of less than 30 to 35 years, a period used to calculating values of climatic norms. These variations are too rapid to be regarded as climatic change. A number of agriculture records kept in Europe since the middle ages have been used to infer the climate. Because wheat and wine are sensitive to temperature their crop histories provide valuable information on past climates.

Causes of Climatic Change

The climatic state at any given period depends on three crucial factors:

- The manner in which this energy is distributed and absorbed over the Earth's surface.
- The nature of the interaction processes between the various component, which make the climatic system.

Solar Output Variation

As the sun is the main source of the earth's energy, variation in solar output must be considered a likely cause of climatic change.

Human Activity

Humans of late have become one of the most important agents of climatic change. These changes manifesting either in increase of temperature, decrease of temperature, increase precipitation, desertification, acid rain, etc. all have different reasons. Global warming and climate change threaten the very existence of mankind; understanding the affects of each and implementing measures to save this planet are of dire urgency. Global warming has become a threat to everything and everyone on earth climate change is caused by many natural and manmade processes that continue to affect our environment.

Pollution

Environmental pollution is a serious problem. Pollution may be defined as an undesirable change in the physical, chemical or biological characteristics of air, water and land that may have lethal attack human life, the lives of other species, living conditions and cultural monuments or that may or will waste or deteriorate raw materials resource.

Air Pollution

Air pollution results from gaseous emission from industries, thermal power stations etc. most of the particle of air pollutants are product of burning of fuels. The presence of substance in the air in quantities which can affect animal or plant life, human health and welfare, or can unreasonably interfere with life or property. Common pollutants include carbon dioxide, carbon monoxide, lead, nitrogen oxides, ozone smoke and sulphur dioxide.

Water Pollution

It is the major problem of developing countries. Rivers emerging in India, China, Brazil, Indonesia, Mexico are facing water pollution. Ocean water are also facing this problem. Ocean water is also facing this problem. The problem of water pollution has affected the ground water.

Noise Pollution

Any unwanted sound is called as noise and the exposure to loud sound is annoying and harmful, the physiological manifestation of noise pollution are increase in rate of heart beat, constriction of blood vessels, and dilation of pupil of the eye. If a person is exposed in a situation of 90 dB over 8 hours it will cause headache.

Radioactive Pollution

Manmade sources of radioactive pollution are mining and refining of radioactive materials, production and explosion of nuclear weapons nuclear power plants and fuels and preparation of radioactive isotopes. All organisms including human are affected by radiation.

Soil Pollution

The soil pollutants include fertilizers, industrial wastes, mining wastes, salts, radioactive compounds, plastics, pesticides etc. Poisonous wastes render soil unfit for crop production. Increases in the concentration of salts adversely affect the soil productivity.

Solid Waste Management

Any useless, unwanted discarded material that is not a liquid or gas is referred as solid waste or refuse. The refuse materials such as newspaper, cotton pieces, food stuff, skin clothes, leather, old dress, fish etc. anything of solids produced by the humans is going to become a waste some time somewhere and somehow. It means waste material is produced as a result of human activity.

Types of Solid Waste

Solid waste can be classified into different types depending on their source.

- Industrial waste as hazardous waste.
- Biomedical waste or hospital waste as infections waste.

Municipal Solid Waste

Consists of house hold waste, construction and demolition debris, sanitation residue and waste from streets. This garbage is generally mainly from residential and commercial complexes.

Hazardous Waste

Industrial and Hospital waste is considered hazardous as they may contain toxic substances. Certain types of household waste are also hazardous.

Hospital Waste

Hospital Waste is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities in these fields or in the production or testing of biological.

Health Impact of Solid Waste

- Solid wastes from households are a serious health hazard and lead to the spread of infectious diseases.
- Plastic waste is another cause for ill health.
- Bone and muscle disorders resulting from the handling of heavy containers.

Recycling

Recycling refers to the removal of items from the waste stream to be used as raw materials in the manufacture of new products. Reduce the waste generation at sources reuse it by making some other useful product out of the waste.

What you can do to reduce solid waste?

- Carry your own cloth or jute bag when you go shopping.
- Reduce the use of proper bags also.
- Dig a compost pit in your garden and put all the biodegradable materials into it.

What you should not do?

- Do not throw broken objects into the garbage without wrapping them first.
- Do not allow water to collect in your garbage in.
- Do not place needles and syringes in the garbage or leave them lying around.

Ozone Hole

Ozone is the most important constituent of earth's atmosphere, through its share is very little ozone occurs naturally in the stratosphere, extending from 16-40kms. This upper layer is also known as ozone layer.

Significance

It is beneficial for the organism on earth because it strongly absorbs or prevents the ultra violet rays of sun and protects the life on earth.

The ozone layer is a layer in Earth's atmosphere which contains relatively high concentration of Ozone (O₃)

An interesting and profound aspect of ozone depletion is that it is a global problem caused by human activities. Many people hole was first discovered over Antarctica in 1985 and then above zone in 1990. The decline in spring time ozone layer thickness is known as Ozone hole. Since the 1950s, CFCs have been used in refrigerators in aerosol spray cans as cleaning solvents and as foam blowing agents. CFCs use in spray cans for hairspray, deodorant and paint was restricted in United States, Canada, Norway and Sweden. The Production of CFCs has steadily increased from the 1960s to the mid 1980s except for the ten years period directly after CFCs in aerosols were banned. The growing use of CFCs and the hypothesis that CFCs cause Ozone depletion prompted many nations of the world to sign the Vienna convention for the protection of the Ozone layer in 1985.

Causes of Depletion

- **Natural Factors:** Eruption of volcanoes large scale forest fire lightning.
- **Industrial Compounds:** like chloro-fluoro carbons, carbon Tetrachloride, Halons, Methyl-Chloroform are main responsible factors.

Effects of Ozone Layer Depletion on Earth Effects on Human and Animal Health

- UV radiation is known to damage the cornea and lens of eye.
- UV-B radiation can adversely affect the immune system.
- It results in sun burn & snow blindness.

Effects on Terrestrial Plants

- UV-B could affect the plant community

Effects on Aquatic Eco-system

- UV-B can cause damage to early development stages of fish, shrimp, Crab, amphibians and other animals.

Effects on Climate Change

- It causes global climate change by causing Greenhouse effect.
- The climate impact of changes in Ozone concentration varies with the altitude at which these ozone changes occur.

IV. CONCLUSION

Greenhouse gases act like a blanket for the troposphere and make the stratosphere colder. In other words, global warming can make ozone depletion much worse right when it is supposed to begin its recovery during the next century. By standing the ozone hole phenomenon scientist have

environmental change on a global scale and have an impact on the Earth's future in the case of the ozone layer, steps have been taken to avoid further environmental problems by regulating human activities. Because the effect of releasing CFC is global issue, international protocols have been established in a cooperative effort for planet's future. Currently we do not understand the details well enough to provide a full explanation or to predict what may occur in the future. As with the increasing amount of CO₂ in the troposphere and how it relates to global warming. Intact, global warming, ozone layer depletion, pollution and solid waste all pose a serious threat to the quality of life on Earth. They are separate problems but as has been seen these are links between each. The use of CFCs not only destroys the ozone layer but also leads to global warming. To solve global environmental problem one need coordinated actions between countries. It is shown that such a policy will generally affect the outcome of international negotiations about reduced emissions.

REFERENCES

1. Ashani PV. Solid Waste Management
2. Shanghai Manual. A guide for Sustainable Urban Development in the 21st century.
3. EMP Report of Dibang Multipurpose Project.
4. Fergusson A. Ozone depletion and climate change published by the authority of the Minister of the Environment, 2001.
5. Sivasakhivel T, KK Kumar Reddy SK. Ozone layer depletion and its effects, International journal of Environmental Science & Development, 2011.
6. Middlebrook AM, Tolbert M A. Strospheric Ozone Depletion-Global Change Instruction Program, 2000.