



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2017; 3(6): 61-63  
www.allresearchjournal.com  
Received: 02-02-2017  
Accepted: 08-05-2017

**Nidhi Kumari**

Plant Pathology Laboratory  
University Department of  
Botany BRA Bihar University  
Muzaffarpur, Bihar India

**MD. Nizamuddin Ansari**

Tissue Culture Laboratory  
B.R.A Bihar University  
Muzaffarpur, Bihar India

**Chandan Kumar Singh**

Tissue Culture Laboratory  
B.R.A Bihar University  
Muzaffarpur, Bihar India

## Impact of environmental pollution on human health resources, vegetation and its control measures

**Nidhi Kumari, MD. Nizamuddin Ansari and Chandan Kumar Singh**

### Abstract

Environmental pollution is causing various hazardous effects on Human health, vegetation and mankind resources. Pollution is unwanted introduction of various contaminants into the various types of environment, has played havoc with life and environment both. It is widely said that environment is life and pollution is death. An attempt for insight study about the affects of environmental pollution in the perspective of air pollution, water and land/soil pollution. Study finds that these kinds of pollution are not only seriously affecting the human by diseases and problems but also the animals and trees/plants. Air pollution has been a menace in recent. Transportation, Industry, Power generation, Space heating, Surface burning etc. emit wide array of toxic substances including gases, particulates and radioactive material in the atmosphere which ultimately affect our food supply, health, plant, human life and economy (Hesketh, 1973).

**Keywords:** Environmental pollution human health resources, various hazardous effects on Human health

### Introduction

Environmental pollution is any discharge of materials or energy into water, land, air that cause acute or chronic detriment to the earth's ecological balance that lowers the quality of life. Some form of pollution exert a destructive effect on humans animals, plants and vegetation by impairing their health or making them more venerable to diseases. (Patra and swarup, 2000) [6] Pollution can be made by human activity and by natural activities as well. (Fereidoun *et al.*, 2007) [3].

There are several types of pollution and while they may come from different sources, and have different consequences understanding the basics about pollution can help individual to become environmentally conscious and minimize their contribution to these dangers. Major concern is regarding air, water, soil pollution causing widespread deterioration to environment hampering human health, vegetation and resources.

### Sources of Air Pollution

- a) **Mobile Sources:** Such as car, buses, trains, planes etc.
- b) **Stationary Sources:** Such as power plants, oil refineries, industrial factories.
- c) **Area Sources:** Such as agricultural area cities and wood burning fire places.
- d) **Natural Sources:** Such as wind-blown, dust, wildfires and volcanoes.

Major air pollutants liberated from the above sources include carbon monoxide, Nitrogen dioxide, Sulfur dioxide, Lead ozone, Suspended particulate matter (S.P.M.).

### Effects of Air Pollution

Oxygen is very essential for life for humans, animals ranging from microbes to large mammals.

**Correspondence**

**Nidhi Kumari**

Plant Pathology Laboratory  
University Department of  
Botany BRA Bihar University  
Muzaffarpur, Bihar India

**Table 1:** Various types of air pollutants and their environmental and human health risk

S. No	Pollutant	Environmental Risks	Human health Risks
1.	Carbon monoxide (CO)	Contributes to smog formation	Exacerbates symptoms of heart disease, vision problem and reduce physical and mental capabilities in healthy people.
2.	Nitrogen oxide (NO and NO <sub>2</sub> )	Damage to foliage, contributes to smog formation.	Inflammation and irritation of breathing passages.
3.	Sulfur dioxide (SO <sub>2</sub> )	Major cause of haze, contributes to acid rain formation, which subsequently damage foliage, buildings and monuments, reacts to form particulate.	Breathing difficulty causing asthma, heart disease.
4.	Ozone (O <sub>3</sub> )	Interferes with the ability of certain plant to respire, leading to increased susceptibility to other environmental stressors.	Reduced lung function, irritation and inflammation of breathing passages.
5.	Suspended particulate matter	Contributes to formation of haze as well as acid rain, which changes the pH balance of waterways and damages foliage, buildings and monuments. The particulate pollutants disturb photosynthesis by reducing the quantum of light and raising surface temperature of leaves causing plant injury. (Roa, M.V. and P.S Dubey 1988) [7].	Irritation of Breathing passage causing asthma & irregular heart beat. Some are carcinogenic.
6.	Lead (Pb)	Loss of biodiversity, decreased reproduction neurological problems in vertebrates.	Adversely effect learning disabilities in young children, cardio vascular effects in adults.

### Sources of Water Pollution

- a) **Sewage (waste water):** Is the discharge of waste water from domestic and industrial processes.
- b) **Agricultural Pollution-** Fertilizers, pesticides and animal waste from farms contributes to agricultural sources of water pollution.
- c) **Oil Pollution:** Oil spillages affect water quality in a number of ways, making drinking water unsafe and can destroy ecosystem that sustain them.
- d) **Radioactive Substance:** Radioactive substances are used in nuclear power plants, industrial medical and other household machineris. If not properly disposed, it can result in serious water pollution incidents.
- e) **River dumping:** Household use after, garden cutting, waste of markets, electronic waste are dumped into river causing water pollutions.
- f) **Marine dumping:** Eighty percent of marine pollution originates on land along the coast or far inland. Streams and rivers carry contaminants such as chemicals, nutrients and heavy metals reaching ocean. Marine debris, particularly plastic is blown away by wind or washed away in storm via drains and sewages.

**Effects of water pollution:** There is a greater association between pollution and health problem. Pathogens (waterborne) are spreading disease directly among humans. Heavy rainfall and floods are related to extreme weather and creating different diseases for developed and developing countries (Bari T, Ahmad SM, *et al* 2014) [1]. Many water borne infections diseases are linked with fecal pollution of water sources and results in fecal-oral route of infection. Many people are at greater risk of disease due to improper sanitation, hygiene and water supply. Poor quality water destroys the crop production and infects our food which is hazardous for aquatic life and human life. (Khan MA, Ghouri AM. 2012) [5].

Many Bacterial disease like diarrhoea, Cholera, Viral diseases (like Hepatitis, Gastroenteritis), Parasitic diseases such as Amoebic dysentery, Giardiasis are all contaminated water borne diseases affecting health and may cause death also.

**Land pollution:** Land pollution has led to a series of issues that we have come to realize in recent times, after decades of negligence.

### Source of land pollution

- 1) **Deforestation and soil erosion:** When forests are cleared for development and to meet the demand for wood supply, the soil is loosened in the process. Without the protection of the trees, the land becomes barren over time and starts to erode.
- 2) **Agricultural chemicals:** Use of harmful pesticides and insecticides can cause the land to become barren.
- 3) **Industrialization:** Overwhelming number of industries, unsafe disposal practices for chemicals used in manufacturing are polluting land.
- 4) **Mining:** Large open spaces due to mining compromises the integrity of land. Mining also results in harmful chemicals such as uranium, being disturbed and released into the environment.
- 5) **Human Sewage:** Untreated human waste can produce toxicity to soil, impairing soil quality.
- 6) **Landfills:** The garbage found at landfills is filled with toxins that eventually seep into the earth.

### Effects of land pollution

Land pollution can cause many things to the human body. Long term health effects can include chronic respiratory disease, lung cancer, heart disease and even brain damage. Three common ways that humans are exposed to soil materials.

1. Ingestion
2. Respiration
3. Skinpenetration (Brevik2013). Lead toxicity has been implicated in development deficit in children.

Soil pollution may affect plant metabolism and reduce crop yields and cause trees and plants that may absorb soil contaminants to pass them up the food chain. Soil polluted by acid rain disrupt soil chemistry and hampers photosynthesis. Soil pollution increase the salinity of the soil making it unfit for vegetation.

**Result and Discussion:** The environmental consequences of rapid industrialization have resulted in countless incident of land, air and water resources sites being contaminated with toxic materials, threatening human and ecosystems with serious health risks. Major efforts should be undertaken to reduce environmental pollution. Reduce, Reuse, Recycle method should be propagated among population. Major reforms to control air pollution such as measures to reduce vehicular pollution, development of more energy efficient transport system, regulation and reduction of pollution from stationary sources, toxic-air pollutants measures to reduce transboundary air pollutants such as ozone and those that cause acid deposition. Major reforms to control water pollution such as water resource program and policies measures to reduce water pollution from direct point-source

and non-point sources, policies to achieve water quality essential for maintaining species population and diversity, including measures to protect lakes wetlands and instream flows, policies to reduce the generation and promote the reuse and recycling of hazardous wastes.

Major reforms to control land pollution are as follows. Management of land as finite resource not as a commodity, land use planning that reflects conservation and wise management of resources, identification and regulation of areas of critical concern, reclamation of lands damaged by surface mining, waste disposal, overgrazing and farming.

These reforms should be practiced as further depletion on natural environment resources and additive affects to environment pollution will cause permanent damage that will be destructive to mankind.

**Table 2:** Various control measures of air, water and land pollution

S. No	Control measures of Air pollution	Control Measures of water pollution	Control Measures of Land pollution.
a.	Planting trees.	Comprehensive water management plan.	Wastage and rubbish should be disposed off by using natural or scientific method.
b.	Using less pollution fuels.	Construction of proper storm drains, setting ponds.	Using proper method of disposing industrial waste.
c.	Using mass transport.	Rain water harvesting structure.	Avoid using more fertilizer and pesticides.
d.	Reducing vehicle exhaust.	Maintenance of drain line.	Trees should be planted everywhere.
e.	Industrial area should be cited far away from residential area.	Effluent & Sewage treatment plant.	More and more land should be brought under farming.
f.	Use of tall chimneys reduce concentration of air pollutants at ground level.	Regular monitoring of water & waste water.	Avoid plastic and littering.
g.	By using biological filter and bio scrubbers.	Avoid over dosage of pesticides & fertilizers.	Educate & convince people.
h.	Using Gaseous pollutants control by absorption, adsorption, condensation, combustion.	Pre-treatment of industrial waste water before leaving to water bodies.	Reuse & Recycle.

### Conclusion

The causes for environmental problems are many. Environmental education is the best programme to deal with the environmental problems. It is most fundamental in our efforts to combat and control pollution, overpopulation and misuse of natural resources.

Present knowledge is sufficient to start taking action, but stronger-foundation is needed to insure that pertinent long-term choices are made that will meet the demand of an interactive and rapidly evolving world.

### References

1. Bari T, Ahmed SM, Yusufzari *et al.* Assessment of heavy metals in surface water of River Panjkora Dir Lower, KPK Pakistan. *J Bio and env. Sci.* 2014; 5:144-52.
2. Brevik EC. Soils and human health: An Overview, 2013, 29-56.
3. Fereidoun H, Pouria H *et al.* The effect of long-term exposure to particulate pollution on the lung function of teheranian and zanjalian students. *Pakistan Journal of Physiology.* 2007; 3:1-5.
4. Hesketh HE. "Understanding and controlling Air pollution". *Ann. Arbor. Sci. Publ. Michigan,* 1973.
5. Khan M, Ghouri A. Environmental pollution: Its effect on life and its remedies. *Journal of Arts, Science and commerce.* 2012; 2:276-285.
6. Patra R, Swarup D. Environmental pollution and its impact on domestic animals and wild lif. *Indian Journal of Animal Science.* 2000; 75:231-240.

7. Rao MV, Dubey PS. Plant response against sulphur dioxide in field conditions. *Asian Environment,* 1988.