

UNDERSTANDING POLLUTION

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8.1 INTRODUCTION

You have studied about the concept of ecosystem and biogeography, the relationship between human and environment in the previous Blocks of this course. Pollution existed since human civilization started using fire; but however, the severity of adverse impact of pollution and alertness towards these issues came to surface in recent times. Industrialization and the use of natural resources like coal and petroleum have aggravated the crisis of pollution. Indoor pollution seems to have been taken for granted by our previous generations. Around the middle of the twentieth century, large-scale expansion of industries and manufacturing, rapidly accelerating urbanization further aggravated and deteriorated the environment. The dawn of atomic weapons and other products of modern technologies intensified the situation to a shocking level. In this Unit, we are going to discuss the meaning and concept of pollution, sources and types of pollution and its effects on the human and their environment.

Expected Learning Outcomes

After studying this unit, you should be able to:

- ❖ define the meaning and concept of pollution;
- ❖ describe the various types and sources of pollution; and
- ❖ explain the effects of pollution.

8.2 MEANING AND CONCEPT

The scientists and scholars have defined the pollution in their own terms. The term pollution is derived from the Latin word “*Pollutionem*” which means to defile or make dirty. Pollution is entry of unwanted elements in the environment. Pollution takes place in the form of solid, liquid and gaseous elements which adversely affects the human and environment. According to E.P. Odum (1971) pollution is “an undesirable change in the physical, chemical and biological characteristics of air, water and soil which affects human beings in various ways”. Mishra (2006) defined pollution as “the introduction of substances or energy which are liable to cause hazards to human health, harm to living resources and ecological systems, damage to structure or amenity, or interference with legitimate use of the environment”.

Major concepts in these definitions says that pollution is created by substances or energy that may be a result of human activities or natural catastrophes. Pollution is an increment added by human to bio-geo-chemical cycles. Examples of natural pollution are volcanic eruptions, forest fires, etc. Today, the problem of pollution has become a major provocation to scientists, environmentalists and humanists as the pollution of various types has gone to such a level that we are not able to inhale fresh air, drink fresh water and eat fresh food. If human beings have to survive, they need to fight and overcome this extensive and lethal trouble before it swallows them and their very persistence.

8.3 TYPES OF POLLUTION

You have now understood about pollution which could be in many forms. The presence of any pollutant, which is an agent or substance that can contaminate the Earth’s sphere, in the environment is called as environmental pollution. According to Odum, the pollutants are of two categories: *Biodegradable Pollutants* and *Non-biodegradable Pollutants*. Biodegradable pollutants are those, which decompose themselves in natural processes during the course of time for example tree leaves, domestic wastes etc. Non-biodegradable pollutants are those, which do not decompose themselves and remains in environment for example plastics, pesticides, nuclear waste, etc. Pollutants can enter into environment through point source which includes sewage wastes, industrial effluents, chimneys, etc., or non-point source that discharge in large scale, for example, agricultural runoff, mining areas, construction sites, etc.

Figure 8.1 shows the four major types of pollutions include:

- Air pollution
- Water pollution
- Soil pollution and
- Noise pollution.

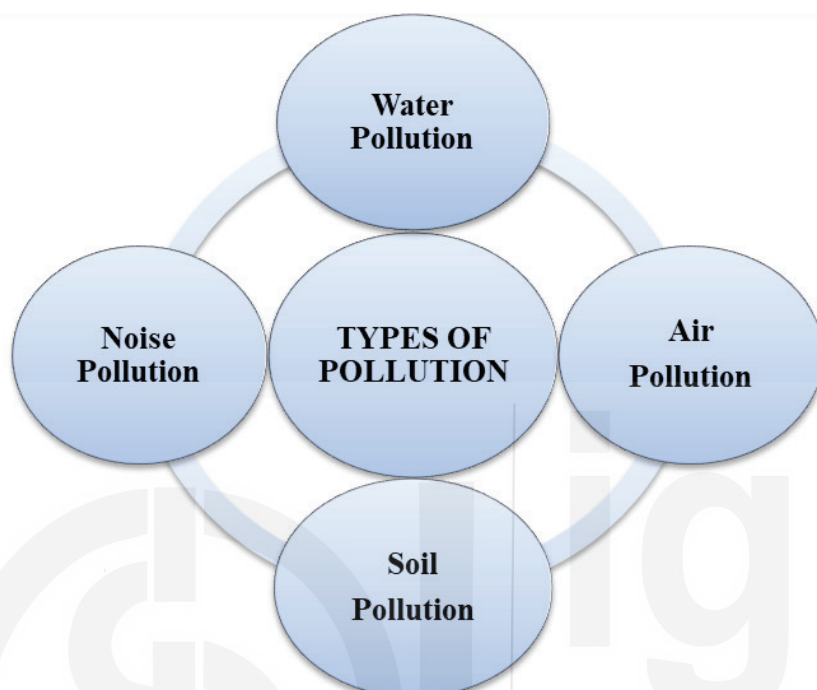


Fig. 8.1: Types of pollution.

Let us discuss each type separately in the following sub-sections.

SAQ I

What is pollution and its type?

8.4 AIR POLLUTION

Do you know, WHO says that air pollution is one of the biggest killer in Southeast Asia. Nobody is safe from air pollution in the world. United Nations warned that out of every ten people on the planet Earth, nine people are now breathing polluted air. Air makes our living planet breathe; it's the fusion of gases that constitute atmosphere, giving life to the plants and animals that make the Earth such a lively place to survive. **Air pollution** refers to physical, chemical or biological modification of the air in the atmosphere. Broadly speaking, it refers to the contamination of air enveloping the Earth's atmosphere. It includes both indoor and outdoor pollution. Air Pollution causes many diseases ranging from skin allergies to death of human beings. It may also harm other living organisms such as animals, vegetation and crops, and may degrade the natural or built-up environment.

Particles that pollute the air are called **pollutants**. Nitrogen oxides, hydrocarbons, sulphur oxides, and dust particles, carbon monoxides are few

examples of pollutants. The sources of pollutants comprise human and natural activities which directly or indirectly emits these pollutants into the air, water, land and vegetation. The vehicles generates the pollutants, burning practices and smoke from forest fire, combustion-fired power plants, marine vessels, wood, coal, fuel or natural gas, burning fire places and stoves, furnaces, fumes from paints, chemical, dust and burning of crop waste are some of the processes that generates pollutants. Of all these pollutants, some are generated by human induced activities whereas some are natural. The natural sources comprising the dry land areas without vegetation, forest fire, volcanic activities, etc. are natural sources which produces these pollutants.

8.4.1 Air Pollutants

Air pollutants are toxic elements which affect the quality of air and these pollutants are generated from various sources. Based on the size of the pollutants, these are classified into two categories. The size of pollutants are measured by;

- a) **Part per million (PPM):** It is based on volume measurement and indicates the volume of pollutants contained in one million volume of air at standard temperature and pressure. The standard temperature is 25 degree Centigrade ($^{\circ}\text{C}$) and pressure is 760 mm.
- b) **Micrograms per cubic meter ($\mu\text{g}/\text{m}^3$):** It indicates the mass of pollutants to the volume of air. One microgram is equal to 10^{-6} grams.

Carbon monoxide (CO), sulphur dioxide (SO₂), nitrogen oxide (NO), hydrocarbons, chlorofluorocarbons (CFCs), and particulate matters are some of the major types and sources of air pollutants. We will briefly explain you some of these air pollutants.

Carbon monoxide (CO): Carbon monoxide is very harmful and poisonous to all the living beings. This major pollutant is concentrated in living set-ups such as urban areas and it is generated from incomplete combustion of fossil fuels and fire power plants. Petrol or diesel vehicles exhaust the gases that contains high toxic CO₂ gas.

Sulphur dioxide (SO₂): It is a responsible compound behind the occurrence of acid rains in urban centres worldwide. About 90 per cent emission of sulphur dioxide comes from burning of fossil fuels, such as coal which contains 6 per cent of sulphur, ore smelters and oil refineries do also emit some amount of sulphur oxides.

Nitrogen oxide (NO): It is emitted from combustion of fuel in petrol or diesel vehicles. The oxides of nitrogen (NO_x) including nitrogen dioxide, nitric oxide, and nitrous oxide are responsible for causing acid rain. It leads to the development of haze like situation in urban areas.

Hydrocarbons: It comprises of various gases such as methane (CH₄), ethane (CH₆), propane (CH₈) and butane (CH₁₀). Hydrocarbon is naturally produced from decompositions of various organic matters and types of plants and trees. Hydrocarbon emitted from vegetation may be a major cause behind the smog in urban areas and large portion of hydrocarbon is generated by human activities.

Chlorofluorocarbons (CFCs): These are organic compounds comprising of chlorine, fluorine and carbon. CFCs can be sustained for long time in the atmosphere for nearly about 50 to 100 years. These are responsible for depletion of ozone layer resulting in the warming of earth's atmosphere and changing climates. They are used in air-conditioning, refrigeration, the manufacture of aerosol sprays and blowing agents in foams, etc.

Particulate matter: It comprises of solid particles, aerosols and these particles do not have any chemical composition and could be complex in nature. It includes smoke, soot, dust, asbestos fibres, pesticides and combination of ammonia, with either sulphuric or nitric acid are also part of particulate matter.

8.4.2 Causes of Air Pollution

- a) **Burning of fossil fuels:** Pollutants like smoke, carbon dioxide (CO₂), carbon monoxide, nitrous oxide emitting from vehicles including trucks, jeeps, cars, trains, airplanes into the atmosphere leads to the emission of enormous amount of pollution.
- b) **Mining activity:** Mining is a process in which minerals below the Earth's surface are extracted. During this process, dust and chemicals are released in the air causing massive air pollution.
- c) **Indoor air pollution:** Household cleaning products, painting supplies emit toxic chemicals in the air and cause indoor air pollution.
- d) **Agricultural activities:** Insecticides, pesticides and other agricultural chemicals generates a huge amount of air pollutants. They emit harmful chemicals into the air and often lead to air pollution. Stubble burning also creates the air pollution soon after the paddy harvest. Farmers burn their crop residue to clear the agricultural fields for sowing next crop also belongs to this category.

8.4.3 Effects of Air Pollution

You will be astonished to know that the air pollution killing about 800 people every hour, accounting for more than 3 times people dying of malaria, tuberculosis and AIDS combined each year. More than 90 per cent of children live in air polluted areas which exceeds the World Health Organization (WHO) guidelines across the world. The air pollution affects not only the health of human beings but also poses danger to other life forms on the Earth.

- i) **Global warming** - It is a process of warming of the Earth's surface leading to the rise in temperature, sea level rise and melting of glaciers. Warming of the land and sea surface are the major cause behind the happening of disasters severely affecting the human beings. These disastrous conditions had already displaced many inhabitants from their native places worldwide. So, we need to take steps for preventing global warming to conserve our precious environment.
- ii) **Acid rain** - Due to burning of fossil fuels, dangerous gases like sulfur and nitrogen oxides are ejected into the atmosphere. The water droplets in the atmosphere combine with these air pollutants which falls in the form

of acid rain on the ground. Acid rain causes immense damage to human beings, animals, natural vegetation and agricultural crops.

- iii) **Respiratory and heart troubles** - Millions of people die due to direct or indirect effects of air pollution. Children are exposed to air pollutants and they commonly suffer from respiratory infections, pneumonia and asthma etc.
- iv) **Depletion of ozone layer** - Ozone layer is depleting due to the presence of chloro-fluoro-carbons and hydrocarbons in the atmosphere. As ozone hole is increasing, the amount of incoming solar radiation is also increasing, which may cause various skin infections and eye problems.

SAQ 2

- a) Name two pollutants of air.
 - b) What are the major causes of air pollution?
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8.5 WATER POLLUTION

You might have known that the water covers 70 per cent of the Earth and only 2.5 per cent is fresh water i.e. drinkable. Water is a very important natural resource for humankind and the environment. As Earth's population continues to grow, people are putting great pressure on the planet's water resources. Let us now understand the water pollution. **Water pollution** occurs when pollutants (chemicals or chemical particles that make water contaminated) are is charged directly or indirectly into the water bodies without proper scientific treatment to get rid of harmful compounds (Eschool today, 2016). So, in simple language, we can say that poorer quality of water is highly unsafe or harmful to humans and other living things referred to as water pollution. Both the anthropogenic and natural phenomena are affecting the quality of water over the surface of the Earth. The human activities such as solid waste disposal, toxic or waste water, sewage flow are polluting the water. Water pollution is affecting rivers, lakes, oceans and quality of drinking water all over the world. It affects not only human beings but also functioning of ecosystems that prevails in the water. It was identified that 80% of the water pollution is caused due to domestic sewage. There are mainly three types of water pollution commonly identified are groundwater pollution, surface water pollution and seawater pollution.

8.5.1 Groundwater Pollution and its Source

The use of ground water has been increasing with the passage of time due to rising water demand. The human concentration in urban centres has created a great pressure on these water sources. The ground water pollution is happening because of harmful human activities such as hazardous waste disposal system, faulty agricultural practices and improper use of fertilizer causing groundwater pollution.

The pollutant which affects the quality of groundwater comprises pathogens, nitrogen, chloride, sulphate, dissolved organic carbon, heavy metals,

halogenated solvents, fuels and lubricants, etc. which are generated from various sources. The sources of pollutant comprises the underground storage tanks, septic tanks, landfill sites, large industrial facilities, fertilizer applications, spills, pesticide applications, hazardous waste sites, surface impoundments, salt water intrusion, sewer lines, shallow injection wells, mining and mine drainage, waste piles, etc All of these are sources which generates the pollutants that affects the quality of ground water. The storage tanks, septic tanks and landfill sites are major sources among all these sources of pollutants.

8.5.2 Surface Water Pollution and its Source

The surface water pollution comprises pollution of major water sources. This includes oceanic and land surface and both are interlinked for the pollution because most of the pollutants are carried by river into the oceans. The rivers, lakes, ponds, etc. are polluted majority because of anthropogenic activities. Human beings discharge the polluted water into it through different modes. Construction activities, construction of dams and reservoirs, recreational works, industrial uses, irrigation, sewers, etc. produces enormous quantity of pollutants that is sufficient to pollute all these sources of water.

Drain water going to rivers directly without or with partial treatment, pesticides, herbicides, and chemicals, bacteria from sewage or livestock operation, food processing waste such as pathogens, heavy metals from industrial effluents and chemical wastes like sulphur dioxide, fertilizers including nitrates and phosphates and silt in storm water run-off of major sources of water pollutants over land areas. .

8.5.3 Seawater Pollution and its Source

Ocean water is polluted because of huge transportation of cargo ships, oil spills, and oil mining and military practices and testing of weapons in the oceans. These anthropogenic activities are creating pollution in the oceans. The natural activities such as volcanic eruption, discharge of massive amount of waste into the oceans that changes the chemical and ecological status of water.

The pollutant metals like mercury, arsenic, chromium, selenium, etc., affect the chemical and biological composition of oceanic water. Sedimentation is another major cause of oceanic water pollution. Research studies noted that nearly 6 million pounds of garbage, mainly plastic end up piling in the oceans every year. Let us know about some of seawater pollutants.

- *Mercury*- It is a major pollutant over the Earth's surface and is widely found in the environment.
- *Arsenic*- It is extensively spread on the Earth's surface and it is found during the dissolution of ores and minerals. It is used in the by- products of mining, coal burning and copper melting.
- *Chromium* - It is found in ores deposited by nature and is an industrial element which is used for protective coating on the other metals. Besides it is also used in cement, paint, paper etc.

- *Selenium* - It occurs in nature as selenite and with combination of sulphide, copper, lead, nickel, silver etc. Selenium has overwhelming effect on both terrestrial and marine life.
- *Sediments* - The erosion in the upper reach of the rivers bring large sum of sediments into the oceans that degrade the quality of water. The sedimentation into the ocean affects the marine life of the ocean. The process of wildfire, deforestation, logging, overgrazing, construction activities, mining operations and landslides produces huge amount of sediments that eventually gets directly or indirectly disposed into the sea or oceans.

8.5.4 Causes of Water Pollution

- a) ***Industrial misuse:*** Industries generate massive quantity of waste which contains toxic chemicals. They contain pollutants such as lead, mercury, sulphur, nitrates, etc. Lots of industries do not have appropriate waste managing system and drain the waste into the fresh waterbodies, rivers, canals and finally into the sea.
- b) ***Mining activities:*** Mining activities release a number of metallic, mining waste and sulphides from the rocks which are the cause of water pollution.
- c) ***Oil leakage:*** Oil leak from the tankers of the ships and large liners in huge quantity enters into the sea and pollute the sea water affecting marine animals and plant life including birds.
- d) ***Leakage from the landfills:*** Landfills are huge mound of garbage. When it rains, the landfills leak and pollute the underground water with huge variety of contaminants.

8.5.5 Effects of Water Pollution

- i) ***Health:*** Intake of polluted water is one of the most important cause of ill-health. Polluted water sources are the cause of the lethal diseases like cholera, dysentery, diarrhea, jaundice, etc. Most of the diseases of the digestive system in India are caused by polluted water. Toxic pollutants mainly consist of heavy metals, pesticides and many other pollutants. The ability of waterbody to support aquatic life, as well as its fitness for other uses depends on many trace elements. Some metals may lead to severe toxic effect on human health, animals and the aquatic life.
- ii) ***Environment:*** All organic materials have been broken down or decomposed by micro-organism and other biological activity (biodegradation). Organic and some of the inorganic compounds show a biochemical oxygen demand (BOD) because oxygen has been used for its degradation process. All aquatic life is almost dependent on oxygen, therefore, aquatic life releases negative or adverse effects in water. The sewage from domestic and animal sources and industrial wastes such as food processing, paper mills, tanneries, distilleries, sugar and other agro-based industries are typical source of pollution (Chand, 2016).

What are the impacts of water pollution on human health?

8.6 Soil Pollution

Soil pollution comprises of presence of human induced chemicals and other modifications in the soil. Human activities of using fertiliser, insecticides and pesticides are major elements which affect the quality of soil. Mining, agriculture and deforestation are important energy intensive activities that impacts the soil directly or indirectly. Modern agricultural production requires the use of excessive quantity of fertilizers and pesticides. The solid wastes, leaching of waste from landfill sites, or direct discharge of waste in the soil leads to soil pollution.

There can be serious consequences of soil pollution. It affects humans, animals, plants and water as well. The effects are very disastrous, if the garbage is not segregated into organic and recyclable waste. Infected soil may lead to many types of cancer, cause problems in the human respiratory system and problems of skin diseases. Landfill sites also cause serious problems like foul smell and becomes the site of breeding of mosquitoes and flies which usually act as vectors for carrying the parasites and virus. It also breeds rodents like rats, insects and mice who in turn spread diseases and often becomes the cause of spreading epidemics. Let us study what are the causes responsible for soil pollution in the environment.

8.6.1 Causes of Soil Pollution

The sources of soil pollution consists of various elements that produce pollutants. These may include petroleum, hydrocarbon from rupture of underground storage tanks, leakage of dry cleaning chemicals, leaching of pollutants from landfill sites, surface water runoff that carries pollutants, percolation into soil from open source insecticides and pesticides etc.

- a) **Surface mining:** Mining of coal and metallic ores provide huge amount of soil pollutants. Industries that mine and process ores, drills for oil and gas or burn coal also generate large volumes of hazardous wastes. Mining produces wastes like sodium, calcium, sulphate, chloride and carbonate, etc. which becomes the cause of soil pollution.
- b) **Deforestation:** Deforestation is felling and clearance of trees and conversion of forested tracts into other type of landuses. The process of deforestation results into many undesirable environmental impacts on soil stability and soil quality. It also increases the instability in soil, increases erosion and brings reduction in biodiversity. Deforestation process decreases the water holding capacity of the soil and loosens the soil particles that also increases the potentiality of soil removal.
- c) **Salinity:** Acids in soil are naturally found, but it is increasing by the use of acid forming fertilizers. The increased soil salinity has negative effect on structure, microbial diversity and plant active soils. The soil salinity can

be measured by electrical conductivity of water saturated soil. Salt affected soil not only adds to environmental pollution but also reduces the quality and productivity of soil.

- d) **Soil erosion:** Soil erosion is a natural process but is largely accelerated by human activities. Removal of top layer of soil is known as soil erosion. Running water and wind are active agents of gradation which causes soil erosion. Different chemicals like preservatives, insecticides, pesticides, fuels, and other industrial and agricultural chemicals absorbed by the soil particles also degrade the quality of soil particles.
- e) **Fertilizers:** It plays a very important role in augmenting agricultural production. Fertilizers comprises of several elements such as carbon (C), hydrogen (H), oxygen (O), nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), sulphur (S), iron (Fe), boron (B), copper (Cu), chlorine (Cl), Manganese (Mn), molybdenum (Mo), zinc (Zn), cobalt (Co), and nickel (Ni). Healthy agricultural production depends on the proper application of all these fertilizers but increase in any one of these leads to will hamper agricultural productivity and ultimately soil pollution.
- f) **Pesticides:** Now a day's extensive use of synthetic pesticides are commonly used for raising agriculture production. Although, the productivity increases but the quality and composition of soil changes.
- g) **Animal waste:** The concentration of animal waste can make the soil polluted and many a times, animal concentration crumbles the soil composition through grazing.

8.6.2 Effects of Soil Pollution

We have segregated the effects of soil pollution mainly into three types as follows:

- i) **Health:** Plants grown on polluted soil transfers the same to the human beings. This may badly affects the health of the people. Soil pollution may cause muscular blockages, skin infections and breakdown of the nervous system. Human beings are affected indirectly by these pollutants. They suffer from problems like food poisoning as they consume vegetables grown from infected soils. High absorption of mercury and lead may lead to kidney and liver diseases.
- ii) **Air and water contamination:** Polluted soil causes air contamination by releasing unstable compounds into the atmosphere. So, more the toxic contaminants in the soil, higher is the level of toxic particles emitted into the atmosphere. Soil pollution can also lead to water pollution if the hazardous heavy metals percolate into the groundwater. It may also pollute storm water runoff, by transporting harmful chemicals into the lakes, streams, rivers or oceans.
- iii) **Increase in soil salinity:** Salinization, is an effect of salt accumulation in the soil. Rising accumulations are linked to soil pollution. Unscientific agricultural practices and irrigation discharge, nitrate and phosphate into the soil contributes to increasing levels of salt in the soil. Increased salinization may not allow the plants to absorb moisture and will cause groundwater pollution.

- a) What is soil pollution?
- b) How salinization effects the soil?

8.7 NOISE POLLUTION

You now really need to understand the research studies which show that the oceans are 10 times noisier today than 40 years ago. It is the troubling noise which may harm the stability of humans or animal life. Noise pollution is mainly caused by loud music, people talking over phone, machines, transportation systems, vehicles, trains, and aircrafts and improper urban planning and designing of structures, etc. Even electrical appliances at home have a beeping noise. Understanding noise pollution is necessary to curb it in time in order to avoid health related problems.

8.7.1 Causes of Noise Pollution

- a) **Inappropriate urban planning:** The crammed houses, large families sharing small space, fight over parking space, and frequent arguments over basic amenities leads to noise pollution which may disrupt the environment and society as well.
- b) **Social occasions:** Noise hit the highest point in most of the social events whether it is parties, marriage, pub, disc or place of worship. In markets, you can see people selling clothes by making loud noise to catch the attention of buyers. People play songs on full volume and dance till late nights which makes the condition of people living nearby pretty worse.
- c) **Industrialization:** Industries use big machines which produce large amount of noise. Various equipment like generators, compressors, grinding mills and exhaust fans also contribute in producing huge noise.
- d) **Household activities:** Electronic gadgets like mobile, television, pressure cooker, mixer grinder, washing machine, vacuum cleaners, cooler, air conditioners are contributors to the noise pollution inside and outside the rooms.
- e) **Transportation:** Huge number of vehicles on roads, airplanes flying over residential areas, underground trains produce a lot of noise. This leads to a condition where in a normal person loses the ability to hear properly because of noise.

8.7.2 Effects of Noise Pollution

- i) **Health problems:** Too much noise pollution in working areas such as offices, construction sites, bars and even in homes may influence our psychological and mental health. Many studies have indicated that the aggressive behavior, disturbance of sleep, constant stress, fatigue and hypertension are closely associated with excessive noise levels. These may further cause chronic health issues for particularly in the elderly population.

- ii) ***Sleeping disorders:*** Loud noise disturbs sleeping pattern and may cause irritation to human beings as well as to the animals and birds. Lack of good night sleep, might lead to problems like fatigue and may affect work performance in the offices and home as well.
- iii) ***Problem of communication:*** High volume of noise may not allow two people to communicate properly. Constant blunt noise can give you severe headache and might upset your emotional balance.

You will study more about air pollution, solid and liquid waste, and loss of biodiversity in coming units of this block.

SAQ 5

What are the things that causes for noise pollution?

8.8 SUMMARY

In this unit, you have studied:

- Pollution can be natural or anthropogenic or both. There are mainly four types of pollution identified which includes air, water, soil and noise pollution.
- The contamination of air through various pollutants like nitrogen oxides, hydrocarbons, sulphur oxides, dust particles and carbon monoxides is referred as air pollution.
- The pollution of air mainly occurs due to burning of fossil fuels, mining, and unscientific agricultural practices. Air pollution not only affects human health but also leads to global warming and acid rains.
- Water is polluted through construction activities, discharge of industrial effluents, untreated or partially treated sewage, chemical wastes, excess utilization of fertilizers and pesticides, leachates from landfill sites, leakage of oils in the oceans, and so on.
- Understanding of noise pollution is also essential. The main causes of noise pollution are faulty urban planning, social occasions, industrialization, household activities, and transportation etc.
- The problems associated with pollution are diverse in nature and some of them are acknowledged. But, still it is important to keep a close control on pollutants. It will ensure the healthy living environmental conditions for future generations.
- Adoption of green technology is an effective solution to the problem of pollution.

8.9 TERMINAL QUESTIONS

1. What is pollution? Explain major types of air pollution?

2. What causes air pollution and water pollution?
3. Why pollution is considered as a problem?
4. What are the causes to the problem of noise pollution?

8.10 ANSWERS

Self-Assessment Questions

1. Pollution is the entry of unwanted elements into the atmosphere. Types of pollution are air, water, soil and noise.
2. a) Particulate Matter, Sulphur Dioxide.
b) Burning of fossil fuel, mining activities, and so on.
3. Drinking of polluted water can adversely harm the digestive system, and cause many diseases like cholera and diarrheic, etc.
4. a) The presence of harmful chemical can modify the texture and structure of soils which causes to soil which cause to soil pollution.
b) The increased level of salts in soils is linked to the soil pollution.
5. Noise pollution is caused mainly by loud music, machines, vehicles, trains and air-crafts, etc.

Terminal Questions

1. The term pollution refers to any substance that negatively affects the environment or the organisms that stay within the natural environment. Different types of pollution includes air pollution, noise pollution, water pollution and soil pollution. Refer to Sections 8.2 & 8.3.
2. Majority of the air pollution is caused by burning of fossil fuels for e.g. fossil fuels, coal, oil, natural gas and gasoline to produce electricity and drive our vehicles. Water pollution is caused by disposal of sewage, waste, industrial residues, open source chemicals, herbicide, pesticides and fertilisers etc. into the water. Refer to Sub-sections 8.4.2 & 8.5.4.
3. Air and water pollution causes damage to crops, vegetation and water bodies. The negative effect of air pollution also includes formation of acid rain that adversely affects trees, river water, wildlife and soils. The negative effects of pollution include changing climates, formation of haze, and smog over cities etc. Refer to Sections 8.4 to 8.7.
4. Refer to Section 8.7.

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