

# **Chapter Twenty Five**

## **ENVIRONMENTAL POLLUTION, WEATHERING AND DISEASES:**

### **ENVIRONMENTAL POLLUTION:**

Environmental pollution occurs when poisonous substances are released into the environment in harmful quantities.

- Items which cause the pollution of the environment are called pollutants. - There are two types of pollutants and these are: (1) Biodegradable pollutants. (2) Non degradable pollutants.

- Bio gradable pollutants are those that can be broken down into harmless substances, due to the activity of micro-organisms.

- Examples of such pollutants are leaves, refuse and dead animals.

- Non-degradable pollutants are those pollutants which cannot decompose (breakdown), or which decompose very slowly.

- For this reason, they remain in the environment permanently or for a long time period.

- Examples of such pollutants are glass, plastic and rubber.

**TYPES OF POLLUTION:** These are air pollution, water pollution, land pollution and noise pollution.

### **Air pollution:**

This occurs when items such as gases, smoke or dust are released or put into the air. It can also be caused when the exhaust of automobiles enters into the atmosphere, and gases which normally cause air pollution are mostly from industries. Air pollutants are those items, which when present in the air cause it to become polluted.

**Some air pollutants:** Some of them are:

- |   |  |
|---|--|
| (1) Sulphur dioxide (SO <sub>2</sub> ). | (2) Nitrogen dioxide (NO <sub>2</sub> ). |
| (3) Carbon Monoxide (CO).               | (4) Particulates.                        |
| (5) Mercury.                            |  |

## **Effects of air pollution:**

- It gives rise to the health problems such as cough and respiratory track diseases.
- It causes a reduction in crop yield as well as the retardation of plant growth.
- It reduces visibility and damages property.
- It affects the weather and the climate.

## **Control of air pollution:**

By discharging waste gases high into the atmosphere.

- By passing waste gases from factories and the exhaust from automobile, through filters to remove some of their pollutants before they are discharged into the atmosphere.
- New machines which do not pollute the environment must be developed by scientists and engineers.
- Government must pass and enforce laws, to stop or reduce pollution causing activities.

## **Water pollution:**

- This is caused when waste materials are discharged or put into water bodies, in large quantities.
- Water pollutants which are items whose presence in water bodies cause them to become polluted, include the following:
  - (a) Waste from industries.
  - (b) Hot water from industries.
  - (c) Agric waste such as fertilizers and pesticides.
  - (d) Untreated sewage.
  - (e) Oil from leaking or sinking oil tankers or ships.
  - (f) Hot water from factories when dumped into water bodies causes a type of pollution called thermal pollution.

## **Effects of water pollution:**

- Polluted water can cause diseases.
- It can cause the death of the creatures which live in the water, such as fishes.
- Some water pollutants enter into the bodies of aquatic creatures such as fishes, and finally end up in the bodies of man after eating them.
- It prevents the water from being used for activities such as swimming and drinking.

### **Control of water pollution:**

- Sewage must first be treated (i.e. to remove most of the harmful items it contains), before it is dumped into water bodies.
- Excess amount of agro chemicals must not be used.
- Wastes from industries must not be dumped into water bodies.
- Hot water from industries must first be cooled, before they are dumped into water bodies.

### **Land pollution:**

- This is caused when items which do not easily decompose or rot, are left on the land, or when chemicals which are harmful to soil organisms are introduced into the soil.
- It can be caused by using chemicals such as pesticides and weedicides or by dumping non-degradable pollutants on the land.

### **Effects of land pollution:**

- Some land pollutants enter the plant and kill them or affect their growth, leading to poor yield.
- Some land pollutants absorbed by plants finally end up in the bodies of man and animals, after eating them causing them to fall sick.
- It leads to land degradation.
- Refuse dumps can serve as the home of germs and dangerous animals such as snakes.

### **Control of land pollution:-**

- By recycling waste such as metals or plastic.
- By controlling the use of agro or agro chemicals.

- By making laws to stop the dumping of waste on land.

### **Sound/ Noise pollution:**

This is caused by loud noise from radio sets, vehicles, industries etc.

Noise makes people feel uncomfortable.

### **Effects of sound/ noise pollution:**

- It causes people to feel uncomfortable.
- It can damage the ear and cause deafness.

### **Control of noise/ sound pollution:**

- Equipments or items such as sound system and radio sets, must not be opened loudly.
- Industries which create a lot of noise must not be located in residential areas.
- Excess hooting, noisy vehicles and machines must be avoided.

### **Weathering:**

- This refers to the breaking down of rocks into smaller particles.

**Types:** There are three types of weathering and these are:

- (i) Physical weathering.
- (ii) Chemical weathering.
- (iii) Biological weathering.

### **Physical weathering:**

- This is the type of weathering which occurs as a result of changes in temperature.
- The rocks expand on hot days and contract on cold days.
- This expansion and contraction causes cracks in the rocks, causing them to break down.

### **Chemical weathering:**

- This is caused by rain water which is a weak form of acid, and referred to as carbonic acid.

- When rain water or carbonic acid falls on the rocks, it dissolves or destroys the cementing material which binds the rocks together, leading to their breakdown.