



## CHAPTER 16

### ENVIRONMENTAL ISSUE

**Pollution** is any undesirable change in physical, chemical or biological characteristics of air, land, water or soil. Agents that bring about such an undesirable change are called as **pollutants**.

#### **Air pollution and its Control**

We are dependent on air for respiratory needs. Air pollutants cause injury to all living organisms. They reduce growth and yield of crops premature death of plants. Air pollutants also deleteriously affect the respiratory system of humans and of animals. Air pollution primarily results from burning of fossil fuel, e.g. coal and petroleum. In industries and automobiles. They are harmful to humans, animals and plants, and therefore must be removed to keep our air clean.

There are several ways of removing particulate matter, most widely used of which is the **electrostatic precipitator**, which can remove over 99 percent particulate matter present in the exhaust from a thermal power plant.

#### **WATER POLLUTION**

It is the degradation of water due to addition of substances (inorganic, organic, biological, radiological), factors (e.g. heat) and deprivation that makes it health hazard, unfit for, human use and growth of aquatic biota. Water pollutants belong to three categories (i) **Biological**. Various pathogen. (e.g., viruses, bacteria, protozoa, helminthes, algae) (II) **Chemical**. Organic wastes, organic (e.g. DDT, BHC) (III) **Physical**. Hot water, oil spills.

**SOURCES OF WATER POLLUTION.** They are of two types:

- a) **Natural Sources of Water pollution.** Clay and silt from soil erosion, leaching of minerals, falling of organic matter from the banks.
- b) **Anthropogenic or man-made sources of water pollution.**

Domestic sewage is the most common source of pollution of water bodies, reduces dissolved oxygen but increases biochemical oxygen demand of receiving water. Domestic sewage in nutrients, especially, nitrogen and phosphorus, which cause eutrophication and algal bloom.

Industrial waste waters are often rich in toxic chemicals, especially heavy metals (e.g., copper, zinc, lead etc.) and organic compounds. Industrial waste waters harm living organisms.



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**Solid wastes:** Solid wastes are discarded or left over solid materials. The various source of solid wastes are Municipal wastes, Industrial wastes, Mining wastes, Electronic wastes hazardous wastes, defunct ships. Soil pollution primarily results from agricultural chemicals (e.g., pesticides) and leachates from solid wastes deposited over it.

Two major environmental issues of global nature are increasing greenhouse effect, which is warming Earth, and depletion of ozone in the stratosphere. Enhanced greenhouse effect is mainly due to increased emission of carbon dioxide, methane, nitrous oxide and Chlorofluorocarbons (CFCs), and also due to deforestation. It may drastically change rainfall pattern, global temperature, besides deleteriously affecting living organisms. Ozone in the stratosphere, which protects us from harmful effects of ultraviolet radiation, is depleting fast due to emission of CFCs thus increasing the risk of skin cancer, mutation and other disorders.

