

# CLASS X - GEOGRAPHY

## MANUFACTURING INDUSTRIES

### Module 4

#### **Industrial Pollution and Environmental Degradation**

**Air pollution.** Smoke is emitted by chemical and paper factories, brick kilns, refineries and smelting plants, and burning of fossil fuels in factories that ignore pollution norms. Air-borne particulate materials contain both solid and liquid particles like dust, sprays, mist and smoke.

**Water pollution.** Major water pollutants are dyes, detergents, acids and salts. Heavy metals like lead and mercury, pesticides and fertilizers and synthetic chemicals with carbon, plastics and rubber, etc. discharged in the water bodies without treatment pollute these water bodies.

**Noise pollution.** The generators, compressors, machines, furnaces, looms, exhaust fans, etc. used by industries create a lot of noise. Noise can raise blood pressure and can have physiological effects as well.

**Land pollution.** Land and water pollution are closely related. Dumping of industrial wastes especially glass, harmful chemicals, industrial effluents, packing, salts and garbage into the soil.

**Thermal pollution.** Wastes from nuclear power plants, nuclear and weapon production facilities cause cancer and birth defects.

#### **Measures for Controlling Environmental Pollution and Degradation:**

- a) Industries should be located with careful planning and better design.
- b) Quantity of smoke can be reduced by using oil instead of coal.
- c) Non-conventional sources of energy should be used instead of fossil fuels.
- d) Modern equipment should be used which controls, filters and separates harmful materials from the waste.
- e) Waste water should be properly treated before discharging into rivers.
- f) Land filling method should be adopted for dumping of waste.
- g) Polluting industries should be located away from towns and cities.

#### **Measures to control air pollution:**

1. Particulate matter in the air can be reduced by fitting smoke stacks to factories with fabric filters, electrostatic precipitators etc.
2. Equipment's to control aerosol emissions can be used in industries, e.g., electrostatic precipitators, scrubbers and inertial separators.

3. Smoke can be reduced by using oil or gas instead of coal in factories.

**Water pollution caused by industries can be controlled by:**

1. Minimizing the use of water for processing by reusing and recycling.
2. Harvesting of rain-water to meet water requirements of industries and other domestic purposes.
3. Treating hot water and effluents before releasing them in rivers and ponds in the following ways: Primary treatment by mechanical means such as screening, grinding, flocculation and sedimentation. Secondary treatment by biological process. Tertiary treatment by biological, chemical and physical processes. This involves recycling of waste water.

**Pro-active approach adopted by the National Thermal Power Corporation (NTPC) for preserving the natural environment and resources.**

1. Optimum utilization and up-gradation of equipment by adopting latest techniques.
2. Minimizing waste generation by maximizing ash utilization.
3. Providing green belts for nurturing ecological balance.
4. Reducing environmental pollution through ash pond management, ash water recycling system and liquid waste management.
5. Ecological monitoring, reviews and online data base management for all its power stations.

**Steps to minimize the environmental degradation caused by industrial development:**

1. Minimizing use of water for processing by reusing and recycling in two or more successive stages. Harvesting of rain water to meet domestic and industrial water requirements.
2. Treating hot water and effluents before releasing them in rivers and ponds.
3. Particulate matter in the air can be reduced by fitting smoke to factories with electrostatic precipitators, fabric filters, scrubbers and inertial separators. Smoke can be reduced by using oil or gas instead of coal in factories.
4. Machinery and equipments can be fitted with silencers to prevent noise pollution.

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