

CHAPTER - 12

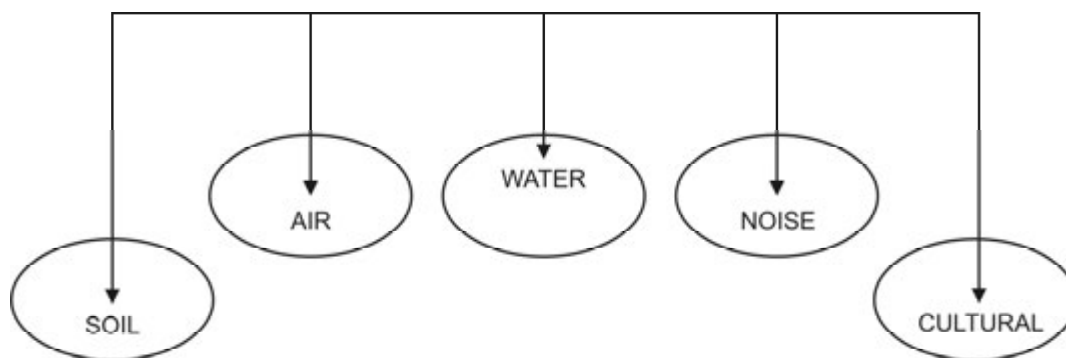
GEOGRAPHICAL PERSPECTIVE ON SELECTED ISSUES AND PROBLEMS

GIST OF THE LESSON:

Pollution: Harmful change for animals and plants in the environment is called *pollution*. Different components of environment have a definite composition. When some other element is added to these components their basic composition is altered. This change is called pollution.

ENVIRONMENT: The external conditions surrounding an organisms or a community are its environment. The environment has two components- one is natural (physical) environment and the other is human environment.

Types of Pollution



Types and sources of pollution

Pollution Types	Pollution involved	Sources of pollution
Air pollution	Oxides of sulphur (so ₂ , so ₃), oxides of nitrogen, carbon monoxide, hydro-carbon, ammonia, lead, aldehydes asbestos and beryllium.	Combustion of coal, petrol and diesel, industrial processes, solid waste disposal, sewage disposal etc.
Water Pollution	Odour, dissolved and suspended solids, ammonia and urea, nitrate and nitrites, chloride, fluoride, carbonates, oil and grease, insecticide and pesticide residue, tannin, coliform MPM (bacterial count) sulphates and sulphates, heavy metals e.g.- lead, arsenic, mercury, manganese, etc., radioactive substances.	Sewage disposal, urban runoff, toxic effluents from industries, run off over cultivated lands and nuclear power plants.
Soil pollution	Human and animal excreta viruses and bacteria, garbage and vectors therein, pesticides and fertilizer- residue alkalinity, fluorides, radio- active substances.	Improper human activities, disposal of untreated industrial waste, use of pesticides and fertilizers.
Noise pollution	High level of noise above tolerance level.	Aircrafts, automobiles, trains, industrial processing and advertising media.

AIR POLLUTION: Addition of any undesired smell, solid, gas or dust to air and any unnecessary interference in living conditions due to this is called *Air pollution*.

Harmful effects of air pollution

- **Effect on weather and climate:** Chemical pollution of air is one of the causes of depletion of ozone in the atmosphere. The ozone layer saves us from the harmful ultra- violet rays of the sun. Higher amount of carbon dioxide and some other gases leads to a rise in temperature also. This has created the danger of melting of ice sheets and glaciers in polar and mountainous region.
- **Effect on the health of people:** Air pollution can lead to several ailments affecting lungs, skin, eyes and throat. High levels of air pollution, especially when poisonous gases are present in the atmosphere, can kill thousands of people. About 2,500 people died in Bhopal city in 1984 due to mixing of poisonous gas MIC in the air thousands became handicapped for life.
- **Effects on animals and plants:** Air pollutants have damaging effects on the leaves and trunks of the trees and plants by retarding their growth.
- **Effects on structures like buildings:** Theair pollutants like sulphur dioxide, smoke, sand and dust particles cause damage to various materials. Buildings turn black due to air pollution. Acid rain creates small hollows in the marble slabs. The colour and shine of world famous Taj Mahal is badly affected by air pollution.

Control of air pollution

- ❖ Use of lead- free petrol
- ❖ Complete checkon burning of fossil fuels
- ❖ Use of more fuel- efficient engines
- ❖ use of filters in smoke stacks
- ❖ Locating factories away from dense settlements
- ❖ Use of pollution-free energy resources
- ❖ High smoke stacks
- ❖ Restricting use of harmful chemicals

WATER POLLUTION: Such changes in the quality of water due to human or natural activities that render water un-suitable for human consumption or for other organisms, agriculture, fisheries and entertainment.

CAUSES OF WATER POLLUTION

- ❖ Chemicals used in agriculture
- ❖ Detergents
- ❖ urban waste
- ❖ Religious and cultural gatherings along river banks

- ❖ Inadequate sewage systems and toilets
- ❖ half-burnt and un-burnt dead bodies
- ❖ Natural factor
- ❖ Drilling in sea for petroleum
- ❖ Nuclear waste

Quality Criteria for fresh water: The Central Pollution Control Board of India has divided water into five groups:

- I. The first group of water can be consumed without purification, just by removing germs.
- II. Water of the second group is considered safe for bathing.
- III. Water of this category can be consumed after purifying it through methods and making it germs-free.
- IV. The fourth group of water is suitable for fisheries. It is suitable for wildlife also.
- V. The fifth group of water can be used for irrigation, industrial air conditioning and controlled disposal of waste.

On the basis of above criteria, the water of most Indian rivers belongs to the (iii), (iv) and (v) groups. Clean drinkable water is becoming rare in Indian rivers. According to the some studies “seventy per cent of total available water in India has been polluted”.

Some extremely polluted stretches in the Ganga and Yamuna River.

<i>River and state</i>	<i>Polluted stretches</i>	<i>Nature of pollution</i>	<i>Main Polluters</i>
Ganga (Uttar Pradesh) Bihar and West Bengal	a) Downstream of Kanpur b) Downstream of Varanasi c) Farraka Barrage to Allahabad	1) Industrial pollution from towns like Kanpur 2) Domestic wastes from urban centers 3) Dumping of carcasses in the river	Cities of Kanpur, Allahabad, Varanasi, Patna and Kolkata release domestic waste into the river.
Yamuna (Uttar Pradesh)	a) Delhi to confluence with Chambal b) Mathura and Agra	1) Extraction of water by Haryana and Uttar Pradesh for irrigation. 2) Agricultural run-off resulting in high levels of micro-pollutants in the Yamuna. 3) Domestic and industrial waste of Delhi flowing into the river	Delhi dumping its domestic waste.

Harmful Effects of Water Pollution

- ✓ Spread of diseases
- ✓ loss of plants and animals
- ✓ loss of soil fertility
- ✓ Eutrophication

Control of Water Pollution

- ✓ Management of garbage
- ✓ Sewer systems and toilets
- ✓ Electric crematoriums
- ✓ Treatment of industrial and Urban waste water
- ✓ Implementation of laws

NOISE POLLUTION: An undesirable sound which is unbearable, irritating and affects the human brain is known as *Noise Pollution*.

The sound of five **decibel** (it is the SI unit of measuring noise) is low, up to 25 **decibel** is normal and the sound which is more than 25 **decibel**, is called *Noise*.

Harmful Effects of Noise Pollution: People headache, deafness, irritation, and difficulty in talking and listening to others due to noise. This disturbs the concentration and working capacity of people and leads to discomfort, fatigue and lack of sleep. Too much noise can lead to health problems like high blood pressure.

Control on Noise Pollution:

- Checking the sources of noise.
- There is a need to enact laws and strictly implement them.
- Ban should be imposed on use of old and noisy machines and equipment's.
- Reducing the bursting of crackers on festivals like Diwali.

Urban waste disposal: Overcrowding , congestion, inadequate facilities, poor sanitary conditions, significant quality of solid waste pieces of metals, polythene bags, broken glass ware plastic containers ashes garbage and CDs make solid waste.

Sources of urban waste:

- Household establishments: thrown in public lands, private contractor sites.
- Industrial establishments: thrown in low lying public grounds.

Effects of solid waste:

- Health hazard due to obnoxious smell, flies and rodents.
- Disease like typhoid, diphtheria, diarrhea, malaria, cholera
- They are spitted through rain water
- Industrial waste dumping in the rivers cause water pollution

Ex. Ganga, Yamuna.

RURAL- URBAN MIGRATION:

Reasons:

1. Demand for labour in urban areas.
2. Low job opportunities in rural areas.
3. Un-Development of rural areas.

Effects:

1. Lack of male population in rural area.
2. Over crowd in metropolitan cities.
3. Pressure on infrastructure of cities.
4. Cause of slum in metros.

PROBLEMS OF SLUM AREAS:

- Least choice
- Dilapidated houses
- poor hygienic conditions
- Poor ventilation
- Lack of drinking water, light, toilet facilities
- Overcrowded, narrow streets, low paid workers
- Prone to diseases, alcoholism, vandalism, apathy, social exclusion

LAND DEGRADATION: Land degradation is generally understood either as a temporary or a permanent decline in productive capacity of the land.

Causes:

- **Caused by natural agents:** Gullies, ravenous land, deserted, coastal sands, barren rocky areas, steep sloping land, and glacial areas.
- **Caused by natural as well as human factors:** Waterlogged and marshy areas, land affected by salinity and alkalinity, land with or without scrub.
- **Caused by human action:** Pressure on agriculture due to population, degraded shifting cultivated areas, degraded land under plantation crops, degraded forests, degraded pastures, mining and industrial waste lands.

One mark questions.

Q1. Which stretch of Yamuna River is most polluted?

Ans. Delhi to Etawa.

Q2. Which diseases are caused due to air pollution?

Ans. Respiratory, Nervous and Circulatory systems related diseases.

Q3. Name the diseases caused due to polluted water?

Ans. Diarrhea, intestinal worms and hepatitis.

Three marks questions.

Q1. Write any six problems of slums of metropolitan cities in India-

- Ans. (i) Lack of proper accommodation, light and sanitation facilities
(ii) Lack of safety measures from fire and earthquake.
(iii) Over crowded with population.
(iv) Lack of medical facilities.
(v) Narrow streets and lack of proper ventilation.
(vi) Spread of epidemics in slums.

Q2. Write four problems regarding urban waste disposal in India.

- Ans. (i) Lack of proper place for dumping of urban waste material.
(ii) Throwing of industrial waste into rivers, which in turn increases water pollution.
(iii) Soil pollution is caused due to uncontrolled chemical seepage in the ground.
(iv) Fear of spreading diseases due to air pollution and bad smell from urban waste.

Q3. Mention major problems associated with urban waste disposal in India.

Ans. Explain

1. Growing population
2. Slow administrative action
3. Growing consumerism.
4. Casual attitude towards cleanliness.
5. Unscientific disposal Management.
6. Problem of Water pollution.
7. Loss of health

Five marks question

Q1. Describe the problem of Slums in India.

Ans. Explain:

1. Dilapidated house
2. Poor hygienic conditions
3. Lack of light & drinking water facilities.
4. Lack of toilet facilities.
5. Poor ventilation
6. Low paid and high risk works.
7. Lack of proper education
8. Malnutrition and Under Nutrition
9. Vulnerable to crime & drug abuse.
10. Vulnerable to social exclusion.