



Economics Notes PDF

On

Environment and Sustainable Development

(Class - 12)

WHAT IS THE ENVIRONMENT?

The environment is the sum total of all the biotic elements like plants and animals and abiotic elements like the air, water, soil, and minerals that make up our surroundings and impact our existence and the quality of our life.

FUNCTIONS OF ENVIRONMENT

- **Offers Resources:** The environment offers resources for production. It includes physical resources like minerals, wood, water, soil, and others which can be used as inputs for production. Normally, two types of resources are provided by the environment, namely:
 - Renewable Resources: Renewable resources are those that can be used indefinitely without getting depleted or exhausted. For example, air, sunlight etc.
 - Non- Renewable Resources: These are the resources that deplete over time as a result of extraction and use. For example, coal, fossil fuels etc.
- **Environment Sustains Life:** It includes resources like sun, soil, water, and air which are essential for the sustenance of human life. The absence of these elements implies no existence of life.
- **Environment Assimilates Waste:** Production and consumption generate waste that the environment absorbs.
- **Enhances the Quality of Life:** The environment enhances the quality of life through its aesthetic and scenic beauty.

Carrying capacity implies two things:

(i) Resource extraction should remain below the rate of resource regeneration.

(ii) Generation of wastes should remain within the absorption capacity of the environment.

If these two conditions are not fulfilled, then an environmental crisis occurs.

Absorptive capacity:

Absorptive capacity of the environment means the ability of the environment to absorb degradation.

Global warming:

It is a gradual increase in the average temperature of the earth's lower atmosphere.

Global warming is caused by man-made increase in carbon dioxide (CO₂) and other greenhouse gases through the burning of fossil fuels and deforestation.

Ozone depletion:

It refers to reduction in the amount of Ozone (a protective layer) in the stratosphere.

The problem of Ozone depletion is caused by high levels of CFC used as cooling substances in air conditioners and refrigerators or as aerosol propellants and bromofluoro-carbons used in fire extinguishers. As a result of depletion of the ozone layer, more ultra violet (UV) radiation comes to earth causing damage to living organisms. The threat to India's environment poses a dichotomy-threat of poverty-induced environmental degradation and, at the same time, threat of pollution from affluence and the rapidly growing industrial sector.

STATE OF INDIA'S ENVIRONMENT

- India is rich in natural resources and biodiversity. But, the development activities have led to increased pressure on limited natural resources.
- The major environment-related issues are
 - Land Degradation
 - Air Pollution

- Biodiversity Loss
- Management of Freshwater
- Solid Waste Management.

A. Land Degradation in India:

Land in India suffers from varying degrees and types of degradation stemming mainly from unstable use and inappropriate management practices.

The factors responsible for land degradation in India are:

- Loss of vegetation occurring due to deforestation.
- Unsustainable fuel wood and fodder extraction.
- Shifting cultivation.
- Reduction into forest lands.
- Forest fires and overgrazing.
- Non-adoption of adequate soil conservation measures.
- Improper crop rotation.
- Indiscriminate use of agro chemicals such as fertilisers and pesticides.
- Improper planning and management of the irrigation system.
- Extraction of ground water in excess of the regained capacity.
- Open access resource.
- Poverty of the agriculture-dependent people.

B. Air Pollution:

It occurs owing to the presence of pollutants in the air. These are contributed by:

- Smoke is emitted by the industries, particularly those using coals as energy.
- Poisonous gases emitted in the process of chemical treatment of materials.
- The emission of gases by motor vehicles is assuming alarming proportions due to the exponential rise in the number of vehicles.

C. Biodiversity Loss:

India is the owner of 2.5% of the world's geographical area. India holds 17% of human and 20% of livestock population on its land. In order to hold livestock and humans in the country, the country needs 0.47 hectare of land to meet the basic needs but it has only 0.08 hectare of land which causes felling of forests and soil erosion. 5.3 billion tonnes of soil are eroded every year. As a result, the quantity of nutrients lost due to erosion each year ranges from 5.8 to 8.4 million tones.

D. Management of FreshWater:

Water is an equally important element of life and its pollution is equally serious. Water becomes polluted when chemicals and other waste materials are dumped into it. Polluted water is the principal cause of diseases like diarrhea and hepatitis. Thus, the management of fresh water is essential to sustain life.

E. Solid Waste Management:

Huge piles and dump of wastes in rural and urban areas leads to various diseases and health problems. Improper segregation of household waste, littering on the roads, etc pose a serious threat to the environment, hence there is an urgent need of management of solid waste.

SUSTAINABLE DEVELOPMENT

It is that process of development which meets the needs of the present generation without reducing the ability of future generations to meet their own needs.

Main features of sustainable development:

- (i) Sustained rise in Real per Capita Income and Economic welfare.
- (ii) Rational use of natural resources.
- (iii) No reduction in the ability of the future generation to meet their own needs.
- (iv) Check on pollution.

STRATEGIES FOR SUSTAINABLE DEVELOPMENT

a. Use of Non-Conventional Sources of Energy:

The dependency on thermal and hydro energy has adverse effects on the environment. Thermal power plants release a lot of carbon dioxide into the environment and can also cause water pollution. Hydroelectric projects damage the forests and natural flow of water. Sources like wind power and solar rays are better sources of energy for the environment.

b. LPG, Gobar Gas in Rural Areas:

Rural households in India generally use wood, dung cake (upla) or other biomass as fuel. This practice has several adverse implications like deforestation, reduction in green cover and air pollution. To rectify the situation, subsidised LPG is being provided. Besides it, gobar gas plants are being encouraged through easy loans and subsidies. LPG is a clean fuel. It does not create any household pollution and also wastage is minimised. For gobar gas plants, cattle dung is fed in the plant to function which produces gas and slurry is used as organic soil fertilizer.

c. CNG in Urban Areas:

The use of Compressed Natural Gas (CNG) in public transport has significantly reduced air pollution.

d. Wind Power:

In areas, where speed of wind is usually high, windmills can provide electricity without any adverse impact on the environment. The turbines moves with wind and electricity gets generated. Its initial cost remains high but it can be recovered easily.

e. Solar Power:

Through Photovoltaic Cells In India, solar energy is used in different forms for agriculture products, daily use products and even to warm ourselves in winters. Through photovoltaic cells, solar energy can be converted into electricity. This technology is extremely useful for remote areas and for places where supply of power lines is either not possible or proves very costly. This technique is also totally free from pollution.

f. Mini-Hydel Plants:

Streams in India can be used to generate energy by installing mini-hydel plants. These streams can move turbines which generate electricity. This power can be used to meet local requirements. They are eco-friendly and do not alter the land use pattern.

g. Bio Composting:

In order to increase production, we have started using chemical fertilisers which are adversely affecting the water bodies, ground water system, etc. But again farmers in large numbers have started using organic fertilisers for production.

In some parts, cattle are maintained only because their waste production is very useful in the form of fertilizer. Earthworms can convert organic matter into compost faster than the normal composting process.

h. Traditional Knowledge and Practices:

India is a country where people have been closely connected to their environment. All our traditional practices have been eco-friendly. When we started to drift away from traditional systems and heritage, we caused damage to our environment. Adopting simple and traditional practices not only helps us lead a healthy life but also protects us from the side effects of modern products and services.

i. Bio pest Control:

With the advent of the Green Revolution, the country entered into the use of chemical pesticides to produce more which laid the adverse impacts on soil, water bodies, milk, meat and fishes. To meet this challenge, better methods of pest control should be brought. One step is pesticides based on plants like neem. Even many animals also help in controlling pests like snakes, peacocks, etc.

j. Shift to Organic Farming:

Shifting from conventional farming to organic farming also helps in sustaining the environment as through organic farming the nutrients of the restored back, which is not the case in conventional farming.

CONCLUSION

Hence, the only moment is a combination of different elements that provide various resources to living things and non-reliving things. Preserving these resources is the responsibility of human beings. The increase in population, the evolution of industries, an increase in pollution, etc., leads to deforestation and the Indian economy's degradation. This has to be changed and needs to implement several strategies and measures to develop the environment and protect the environment for future generations and the government.

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