

ENVIRONMENT AND ECOLOGY

“The natural surroundings like air, water, land, atmosphere, etc. are also part of physical environment but they are commonly known as natural environment”.

Environment

People surrounding the components of environment are known as **human environment**. It is also known as **Social environment** and includes elements like the religious and emotional relation.

Types of Environment

There are mainly three types of environment:

The Physical Environment

It is also known as **abiotic environment and natural environment**. The meaning of abiotic or physical environment comprises non-living elements like land, water, atmosphere, conditions that lead to the formation of soil (temperature, pressures, etc.). The physical or abiotic environment also includes the climatic factors such as sunbeams, rainwater, precipitation, moisture, pressure and wind speed.

The Biotic Environment

It is also known as **biological environment and organic environment**. In the opposite side of the physical environment, the biotic or biological environment is responsible for the living beings. The biological environment is the environment, which evolves the living part of the earth.

Social or Cultural Environment

This type of environment involves the culture and life style of the human beings. The social or cultural environment means the environment, which is created by the man through his different social and cultural activities & thinking. The historical, cultural, political, moral, economic aspects of human life constitute to the social or cultural environment.

Atmosphere

Atmosphere is relatively thin layer of odourless, tasteless and colourless gases (air) and dust surrounding the earth. It's dry gas comprises 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.03% carbon dioxide and tiny proportions of neon, krypton, helium, methane, xenon, hydrogen and ozone, together with water vapour, which values between 0 and 4%.

Atmospheres also consist of Particular Matter (PM), which are solid particulates or liquid droplets suspended in the atmosphere. Increasing environment concerns are making classification and role of particular matter is important.

Classification of Particulate Matter

It can be classified as

Dust Particles of different size and irregular shapes, which either are suspended or floating through the air.

Smoke Incomplete combustion of coal and wood suspends very fine particles into the air.

Soot Badger size carbon particles impregnated with tar, suspended into the air.

Aerosols Suspended minute particles acting as a dust veil, they cover the amount of solar radiation reaching the earth, therefore counteract greenhouse gas effect.

Haze caused by very fine dust in atmosphere.

Mist Suspension of liquid droplets formed after condensation of vapours.

Fumes Condensation of gaseous particles.

Know It!

- Carbon sink is natural or artificial reservoir that accumulates and stores some carbon containing chemical compounds for an indefinite period.
- A person breathes 22000 times a day inhaling about 16 kg of air.
- Respirable Suspended Particulate Matter (RSPM) are the particulates having diameter less than 10µm. These are very small particles and as such could be inhaled. Concentration of RSPM is highest in Vadodara

Modification of Atmosphere

Atmosphere changes induced by man may be grouped into three categories

1. Introduction of solids and gases not normally found in the atmosphere (pollutants) e.g., ozone hole.
2. Changed in proportions of the natural component gases of the atmosphere e.g., global warming due to greenhouse gases increase
3. Alternation of Earth's surface in such a way as to affect the atmosphere e.g., effect of cryospheric change on global weather. Atmospheric pollution will be discussed along with environment pollution.

Hydrosphere

It is the part of environmental ecology related with surface waters. Water is found in All three states in environment and all of its three forms influence immensely the environmental ecology of Earth's system. Water vapours (gaseous) take part in greenhouse effect and are source of various weather system e.g., tropical cyclone, hurricane, monsoons etc. surface water and ocean water in liquid form influence biodiversity and is vital to survival of human race. Ice sheets, separately known as Cryosphere, in solid form, influences weather system and is source of large climate variation.

Hydrospheric Environmental Issues

Following are environment issues occurring in domain of hydrosphere

Sea Level Change

By change in sea level, we mean the fluctuations in mean sea level I.e., the average level of sea surface. Fact is established by series of continuous records of tidal oscillations over a considerably long period of time. Considered geographically, sea level or land facing subsidence. But sea level change, qualified environmentally, pertains to rise of sea level due to climate change.