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Nature and Scope of Environment Geography & Environmentalism

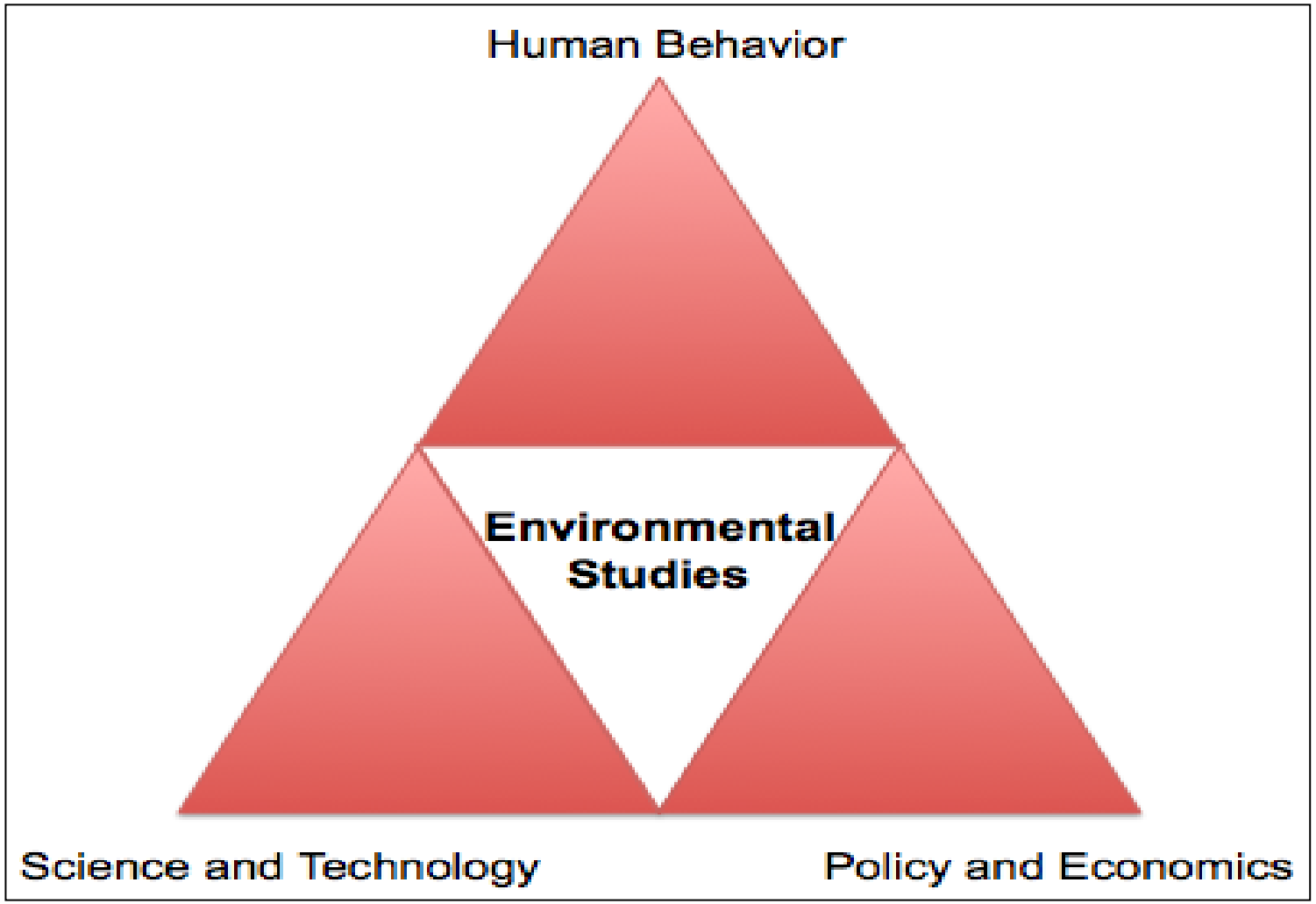
Introduction

1. ‘Environment refers to the sum total of conditions which surrounded man at a given point in space and time’ (C.C. Park, 1980).

2. Environmental studies is the interdisciplinary academic field which systematically studies human interaction with the environment in the interests of solving complex problems.

3. It is a broad field of study that includes also the natural environment, built environment, and the sets of relationships between them.

4. The field encompasses study in basic principles of ecology and environmental science, as well as associated subjects such as ethics, policy, politics, law, economics, philosophy, environmental sociology and environmental justice, planning, pollution control and natural resource management.



Area of discussion of environmental studies

Concepts of Environmental Studies

1. Environmental study is basically the **study of total environment** of the earth as a living planet having both physical and biotic components.
2. The **fundamental study unit of environmental study** is the life layer of the earth having ***atmospheric, lithospheric and hydrospheric*** components, which is responsible for the support of all types of life.
3. This life supporting layer is very commonly known as ***biosphere***, is characterized by the operation of several physical and biological processes., mutual interaction and interdependence of abiotic and biotic components of the biospheric ecosystem, production and consumption of ***ecological resources***, various ***positive and negative responses of interactions between different components of the environment*** resulting into stability or instability of biospheric ecosystem at different levels (local, regional and global)

4. ***Environmental degradation and pollution*** arising out of increasing pressure of economic and technological man on the environment and man's renewed efforts and struggle to stabilize the disturbed ecosystem, to conserve and manage the ecological resources and the ameliorate environmental degradation and pollution through different pollution-control and abatement programmes.

5. There are certain basic principles which govern the basic aspects of environmental studies viz. natural processes, both physical and biological in the life supporting layer (biosphere) and relationships between man and environment and ***man and environmental processes*** , integrated functional unit of the biotic and abiotic components of the environment (ecosystem), functioning of ecosystem, ***ecological evolution and succession, climatic changes and ecological modification***.

1. Environmental system or ecosystem is the fundamental ecological unit for the study of the environmental study:

The planet earth is the ***only living planet*** that has atmosphere, environment and living organisms including plants, animals and micro-organisms. Since the environment is both physical and biological concept, it encompasses both the non-living (abiotic) and living (biotic) components of the planet earth.

Environment is the comprehensive term which in general refers to surroundings .The earth is the only known planet having different kinds of life forms where in there are ***complex sets of interrelationships between the physical and biological components***.

Various linkages between physical and biological components at different levels maintain the unity of the biospheric ecosystem.

- **2. The biospheric ecosystem is governed by discernible processes:**
- The dynamic evolving earth system in general and the biospheric system in particular are governed by discernible processes, both physical and biological. The physical or biological processes operate through a set of cycles, the broadest being geocycle. In fact the ***endogenetic and exogenetic processes create different types of habitats on the earth surface for living organisms on the one hand and sometimes destroy the habitats on the other hand.*** The driving force of the endogenetic processes comes from within the earth. Endogenetic forces create different types of relief features of various magnitudes on the earth's surface. Exogenetic forces originate from the atmosphere and are engaged in continuous process of denudation of surface irregularities caused by endogenetic processes.

3. There is continuous creation, maintenance, destruction and recreation of surface materials of the earth

Various physical, chemical and biological processes are continuously engaged in the creation, maintenance, destruction and recreation of surface materials of the earth's surface (both organic and inorganic). The process involved in the creation of the earth materials (inorganic) is known as ***'geologic cycle'*** which includes a set of several sub cycles. The ***earth materials are not only created but also maintained, change in their properties transferred from one place to another and even destroyed by geologic cycle*** but these materials are even passing through the aforesaid pathways remain initially uncontaminated and are very useful for man, they became contaminated and are seldom available for human use because either they are dispersed to such locations which may not be reached by man for fairly long period of time or they become so deformed and contaminated that they are not reusable. Sometimes, some renewable natural resources are so contaminated that they become non-renewable.

4. Physical and biological processes operate according to the law of uniformitarianism:

Physical and biological processes operate according to the law of uniformitarianism. James Hutton's law of uniformitarianism having two basic principles of '***the present is key to the past***' and 'no vestige of a beginning: no prospect of an end' postulated in 175 and related to '***cyclic nature of earth's history***' states that '***all the physical law and processes that operate today, operated throughout geologic time, although not necessarily always with the same intensity as now***'. In other words, the very nature of the operation of physical processes remains almost the same throughout geologic history of the earth though their frequency and magnitude may vary. So, the biological processes which operate today might have operated in the past though with varying degree of relationships between biological communities and physical or natural environment and between organisms.

5. Natural environmental system is governed by homeostatic mechanism:

Physical and biological processes of the natural environmental system operate in such a way that any change in any part of the environment at any place in a specific time period is suitably compensated by negative feedback mechanism in a natural condition. Thus the natural environmental system has ***'inbuilt self regulating mechanism' known as homeostatic mechanism*** through which any change in the natural ecosystem is counterbalanced by responses of the system to the change and ultimately ecosystem stability or environmental equilibrium is restored. Sometimes this situation also leads to the evolution of new species.

6. There are temporal and spatial variations in species:

There are ***temporal and spatial variations in species***. The Darwin's theory of evolution of species states that there is progressive evolution of species through the processes of ***natural selection and adaptation*** to environmental condition which lead to ***gradual modification and diversification of species*** over a long period of time.

7. Ecosystem diversity and complexity enhances and maintains ecological stability:

The stability of ecosystem refers to balance between production and consumption of each element of the ecosystem. In other words ecosystem stability means ***balance between input and output of energy and normal functioning of different biogeochemical cycles*** and stable condition of concentration of all elements.

The scope of the study of environmental study may be grouped into 9 major subfields-

- The geoecosystem or simply ecosystem as study unit
- The functioning of ecosystem including circulation of energy and matter and ecosystem productivity
- Temporal changes in ecosystem : evolution of plants and animals; and ecological succession
- Spatial ecological changes; distribution and dispersal of plants and animals
- Global environmental problems
- Environmental hazards and disasters
- Man and environmental processes
- Environmental degradation and pollution and
- Environmental management

Environmentalism

- This approach is based on the basic tenet of **'earth made man'** and pays more attention on the complete control of physical environment on man and his activities. In fact, according to ***deterministic perspectives of man-environment relationships***, man is subordinate to natural environment as all aspects of human life viz. physical (health and comfort), social, economic, political, ethical and aesthetic etc. not only depend but are dominantly controlled by physical environment.
- Though this deterministic or environmentalistic approach blossomed in the writings of E.C. Semple (1910) in the second decade of the 20th century but its seeds were already sown in the second half of the nineteenth century. In fact the publication of **'The Origin of Species' of Charles Darwin** in 1859 laid the foundation stone of the concept of environmental influences on man and other organisms.

- The concept of environmentalism culminated in 1910 when American geographer E.C Semple published her book **'Influences of Geographic Environment'** wherein she opined that 'man is product of the earth's surface. This means not merely that he is a child of the earth, dust of her dust, but the earth has mothered him, fed him, set him tasks, directed the thoughts, confronted him with difficulties that have strengthened his body and sharpened his wits, given him his problems of irrigation and navigation and at same time whispered hints for their solutions' (E.C. Semple 1910, pp.1-2)
- Deterministic approach was fully organized on scientific plane by **E. Huntington**. His **'Civilisation and Climate' (1915)**, '**The Human and Habitat' (1927), 'Season of Birth' (1938)** etc. clearly demonstrate the influences of physical environment on man. His postulation that '*climate not only influences human life but also his birth*' proves that he was strong advocate of environmentalism.