

Scope of environmental Studies

The interface of air, water and land, forming life supporting layer, known as biosphere, is the broadest geoecosystem which is the spatial unit for the study of environmental study. The prime concern of environmental study is, thus, to study the components of natural environment separately and together, their linkages at various levels through environmental (physical) and biological processes and human responses to environment.

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

The geoecosystem or simply ecosystem as study unit

1. The functioning of ecosystem including circulation of energy and matter and ecosystem productivity
2. Temporal changes in ecosystem: evolution of plants and animals; and ecological succession
3. Spatial ecological changes; distribution and dispersal of plants and animals
4. Global environmental problems
5. Environmental hazards and disasters
6. Man, and environmental processes
7. Environmental degradation and pollution and
8. Environmental management

The Approaches of Environmental Studies

An approach is a way of getting closer. The study of relationships between man and environment has always been, in one way or another, a focal theme in environmental study. But the facets of man-environment relationship change through time with the development of human society and the dimension of environment.

The man-environment relationships, thus, can be perceived and evaluated in a variety of ways and approaches.

1.Environmental deterministic approach

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 environmentalist 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.

2. Teleological approach

Teleological approach is based on religious faith of man being superior to nature and all other creatures. This approach of man-environment relationship led to excessive and rapid rate of exploitation of natural resources in North America and Western Europe as well as in other parts of the world which were their colonies. A host of scientists and environmentalists have held this religious tradition responsible for present-day ecological crisis.

This approach of man towards nature and environment stimulated Europeans to spread all over the world in search of unexplored land and resources. Consequently numerous colonies were established in all of the inhabited continents. After 1750 there began a race for rapacious exploitation of natural resources and widespread industrialization in Europe and America. The process continued for the last three centuries and created most of the present-day environmental problems.

3. Possibilistic approach

Possibilistic approach to the study of man-environment relationships emerged through the criticism of environmental determinism and overtone of teleological approach. Right from the inception of the school of environmental determinism there was dissenting voice raised by those who believed that 'no doubt physical environment influences man and his activities but there is ample scope for man to change the environment so much so that it becomes suitable for man and his society'.

This concept of possibilism was founded by Febvre who has remarked, 'man is a geographic agent and not the least. He everywhere contributes his share towards investing the physiognomy of the earth with those 'changing expressions' which are the special charge of geography to study'.

Two French geographers, Vidal de la Blache and Jean Brunhes and American geographers Isiah Bowman and Carl Sauer founded the school of possibilism which is based on the philosophy of possibilism in nature at every stage in a given space and time as remarked by Febvre, 'There are no necessities, but everywhere possibilities and man as a master of these possibilities is the judge of their use'.

4. Economic deterministic approach

This approach is based on the basic ideology of the man's mastery over environment and continued economic and industrial expansion through the application of modern technologies.

Economic determinism is based on two fallacious assumptions of

Positive correlation between population of a given region and level of economic development and activity in that region, and

The interactions of people, resources and society being governed by universal economic principles.

This approach believes in man's ability to solve environmental problems arising out of continued economic growth and industrial expansion. It may be pointed out that this extreme concept of economic determinism led to rapacious exploitation of natural resources in the western developed countries and thus created most of the environmental and ecological problems of global dimensions.

5. Ecological approach

Ecological approach to the study of man-environment relationships is based on the basic principles of ecology which is the study of mutual interactions between organisms and physical environment on the one hand and interactions among the organisms on the other hand in a given ecosystem. Thus, man is considered as an integral part of environment.

'The relationship of man with the natural environment should be symbiotic and not exploitative nor suppressive' (C.C. Park 1980)

This school recognizes man, being most skilled and intelligent, as the leader of all biota of the earth. This approach further lays emphasis on wise and restrained use of natural resources, application of appropriate environmental management programmes, policies and strategies keeping in view the ecological principles so that already depleted natural resources are replenished (wherever possible), degraded environment is set right and ecological balance is maintained.

The ecological approach lays emphasis on rational exploitation of resources and optimum utilization through recycling of resources.

6. Geographical Approach

The Geographic Approach refers to using geographic science supported by GIS as a framework for understanding our world and applying geographic knowledge to solve problems and guide human behavior. Understanding our World Geography is the science of our world, describing the physical and cultural patterns and processes of our planet. This science provides humans with awareness of what's going on, predictions of what may happen, and systematic information for planning and decision making. Geography helps us better understand various spatial phenomena and their interrelationships, for example the relationships between land use change, surficial hydrology, flooding, biodiversity, etc. These

understandings are helping society become more conscious and aware of the interrelatedness of our world and how our cumulative behavior is affecting the evolution of the planet.

Today GIS is extending the power of geography by providing digital tools that abstract and organize geospatial data, model geographic processes, and visualize these data and models with advanced computer techniques. GIS is helping us apply geographic knowledge to ledge a host of problems, ranging from organizatioanal inefficiencies to supporting location decisions that require examining many geographic factors. For example, when selecting the route for a new highway, GIS and the geographic approach can be used to consider the physical and human factors that should guide its layout and design: the environment, existing land use, terrain, and social impacts, as well as engineering constraints and costs. Considering all these factors can be over whelming, particularly when trying to make complex tradeoffs. This is where the use of GIS is particularly valuable.

References

[Association for Environmental Studies and Sciences](#)

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