

Environmental Studies: A Multidisciplinary Subject its Scope and Importance Subject-Environment Studies
Subject Code-BHMA-205

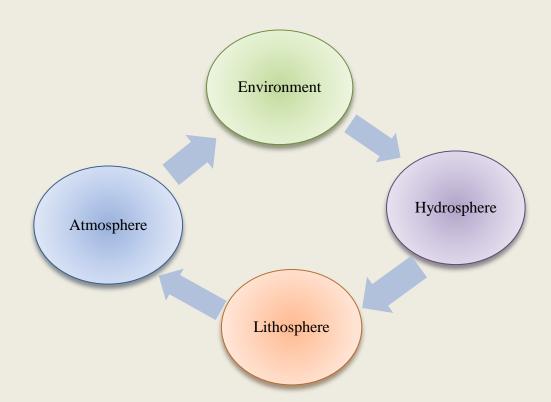
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INTRODUCTION:

The word environment is derived from the French word 'Environner' which means to 'encircle or surround'

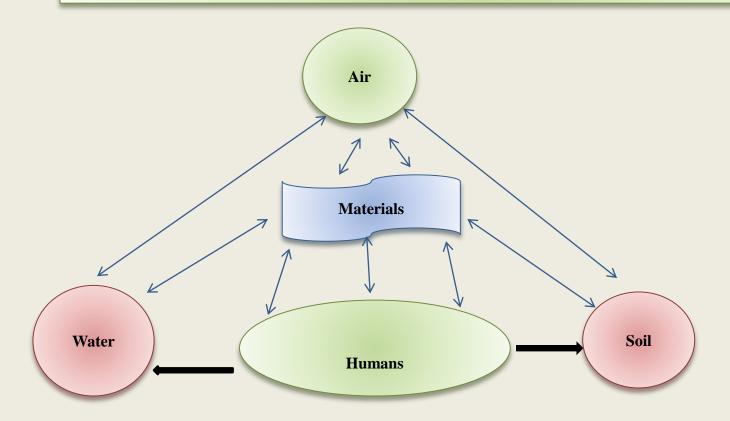
- ❖Thus our Environment can be defined as "the social, culture and physical conditions that surround, affect and influence the survival, growth and development of people, animals and plants.
- This broad definition includes the natural world including all factors (living and nonliving) that affect an individual organism or population at any point in the life cycle, set of circumstances surrounding a particular occurrence and all the things that surrounds us.

Segments of Environment:



ENVIRONMENT SCIENCE:

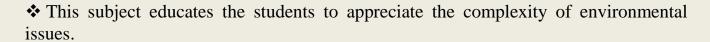
An interdisciplinary branch of science that investigates questions related to the human population, resources and damages caused by pollution and disturbance.



Concept of Environment and their interaction with surrounding

Why Environmental Studies are multidisciplinary in nature?

- ❖It comprises various branches of studies.
- ❖It is the science of Physical phenomena in the environment
- ❖It studies about the sources, reactions, transport, effect and fate of physical and biological species in the air, water, soil and effect of human activity upon these.



- ❖By studying Environmental science, students may develop a breadth of the interdisciplinary and methodological knowledge in the environmental fields that enable them to facilitate the solution of Environmental problems.
- *Keeping in view the complex nature of environment, knowledge and information from various disciplines of science, social science, law and engineering have to be included in Environmental Studies.



Life Sciences
Biology, Biochemistry,
Microbiology,
Biotechnology

Physical Sciences

Physics, Chemistry, Earth
Science, Atmospheric
Science, Oceanography

Environmental Studies

Mathematics, Statistic, Computer Science etc

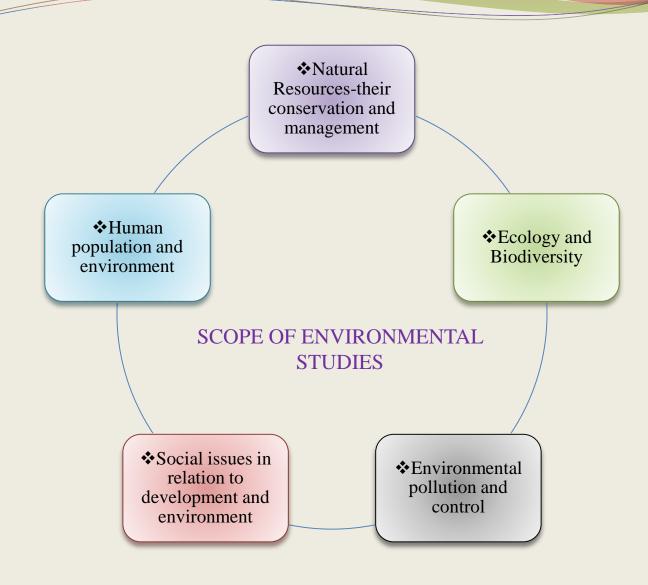
Economics, Politics, Sociology, Law, Education, Management, Mass Communication, Philosophy and Ethics, History, Sociology Civil Engineering,
Chemical
Engineering,
Hydraulics,
Nanotechnology etc

Multidisciplinary nature of environmental Studies

- ➤ Life Science including botany, zoology, microbiology, genetics and biochemistry help in understanding the biotic components and their interactions.
- > Genetics and biotechnology are emerging as useful tools for finding solutions to environmental problems.
- For understanding the physical and chemical structure of abiotic components of environment along with mass and energy transfers we have to make use of the basic concept of physics, chemistry, geology, atmospheric science, oceanography and geography.
- Mathematics, statistics and computer science likewise serve as effective tools in environmental modeling.
- > Subjects like economics, management and sociology provide the inputs for dealing with the socio-economic aspects associated with various development activities.
- ➤ Civil Engineering, hydraulics, chemical engineering and nanotechnology provide the technical solutions to environmental pollution control and waste treatment that are extremely important for protection of the environment.

- > Environmental Laws provide the guidelines and legal measures for effective management and protection of the environment.
- Environmental Education and mass communication are two important subjects that are important for environmental awareness.
- Environmental ethics provide the guidelines for a sustainable life style.
- ➤ History: History of Air pollution and air pollution approach.
- ➤ Sociology: Sociological impacts of air pollution.

Thus it is a multi-disciplinary subject where we deal with different aspects using a holistic approach.



Several branches in this field that are broadly categorized as:

☐ Research and Development (R&D) in Environment:

Skilled environmental scientists have an important role to play in examining various environmental problem in a scientific manner and carry out R & D activities for developing cleaner technologies and promoting sustainable development.

☐ Gren Advocacy:

With increasing emphasis on implementing various Acts and Laws related to environment, need for environmental lawyers has emerged, who should be able to plead the case related to water and air pollution, forest. Wildlife etc.

☐ Green marketing:

While ensuring the quality of products with ISO marks, now there is an increasing emphasis on marketing goods that are environment friendly. Such products have eco-mark or ISO 14000 certification. Environmental auditors and environmental managers would be in great demand in the coming years.

□Green media:

Environmental awareness can be spread amongst masses through mass media like television, radio. newspaper, magazines, advertisements etc. for which environmentally educated persons are required.

Environment Consultancy:

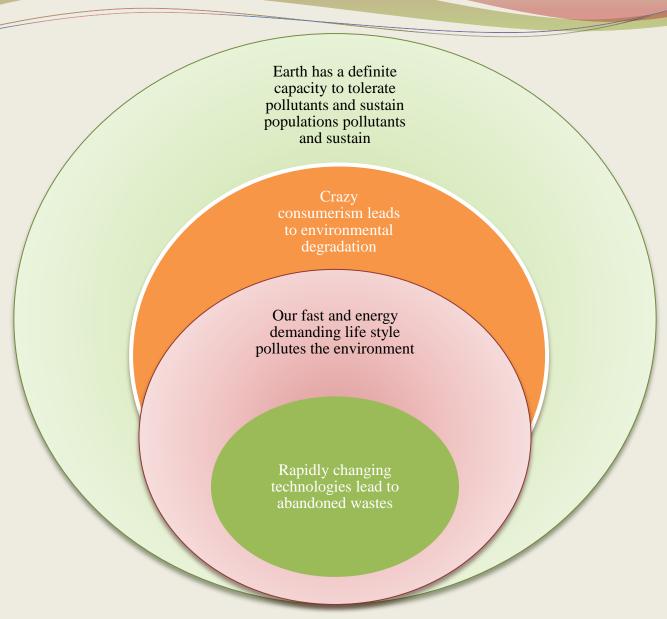
Many non-government organization (NGOs), industries and government bodies are engaging environmental consultants for systematically studying and tackling environment related problems.

Importance of Environmental study:

Environment study is based upon a comprehensive view of various environmental systems. It aim to make the citizens competent to do scientific work and to find out practical solutions to current environmental problems. The citizens acquire the ability to analyse the environmental parameters like the aquatic, terrestrial and atmospheric systems and their interactions with the biosphere.

- World population is increasing at san alarming rate especially in developing countries.
- The natural resources endowment in the earth is limited.
- The resources are over-exploited and there is no foresight of leaving the resources to the future generations.
- The unplanned exploitation of natural resources lead to pollution of all types and at all levels.
- The pollution and degraded environment seriously affects the health of all living things on earth , including man.
- The people should take a combined responsibility for the deteriorating environment and begin to take appropriate actions.

- Education and training are needed to save the biodiversity and species extinction.
- The study enables the people to understand the complexities of the environment and need for the people to adapt appropriate activities and pursue sustainable development, which are harmonious with the environment.
- The study motivates students to get involved in community action, and to participate in various environmental and management projects.
- Thus Environment studies take a multidisciplinary approach to the study of human interactions with the natural environment. It is a key instrument for bringing about the changes in the knowledge, value, behaviours and lifestyle required to achieve sustainability and stability within and among countries.



Need for Public Awareness

- As earth natural resources are dwindling and our environment is being increasingly degraded by human activities, it is evident that something needs to be done.
- ❖We often feel that managing all this is something that the government should do., but there is no way in which the government can perform all these clean-up functions
- ❖It is the prevention of environment degradation in which we must all take part that must become a part of all our lives
- ❖This can only be made possible through mass public awareness. Mass media such as newspaper, radio, television, strongly influence public opinion.

Activities such as:

- ✓ Join a group to study nature, such as WWF.
- ✓ Being reading newspaper articles and periodicals such as "Down to Earth", WWF-I, newsletter, sanctuary management etc.
- ✓ Practice and promote issues such as saving paper, saving water,reducing use of plastics, practicing the 3Rs principle of reduce, reuse,recycle and proper waste disposal
- ✓ Join local movements that support activities such as saving trees in your area, go on nature treks, recycle waste, buy environmentally friendly products.
- ✓ Practice and promote good civic sense such as no spitting or tobacco, no smoking in public, no urination or defecating in public places.
- ✓ Take part in events organised on world Environment Day, Wildlife Week etc.
- ✓ Visit National Park of Sanctuary or spend time in whatever nature you have near your home.

Career Field in Environmental Sciences

Career Field				
a) Oceanographer	Biological oceanographer and marine biologists study plants and animals in the marine environment. They are interested in a number of marine organism and how these organisms develop, relate to one another, adapt to their environment, and interact with it.	Biology		
b) Climatologist (Atmospheric or space Science)	Study of atmosphere and weather patterns over time. This field of science focuses on recording and analyzing weather patterns throughout the world and understanding the atmospheric conditions that cause them.	Climatology, Meteorology, Atmospheric Science		
c) Environmental Risk Assessment Manager	Compiles environment risk assesments in support of regulatory submissions. Prepares input for post-submission regulatory inquiries	Environmental Safety		
d)Environmental Scientist and Specialist, including Health	Conduct research, using knowledge of various scientific disciplines, may collect, synthesize, study, report and recomment action based on data derived from meaasurements or observations	Environmental Science		

e) Environment Science Teacher	Teach courses in environmental Science, supervise students in laboratory and field work, advise students on academic and vocational curricula and on career issues.	Environment Science
f)Geographic information System(GIS) Specialist	Assist scientists, technologists, maintaining, modifying or using geographic information systems (GIS) database. Design or prepare graphic representation of GIS data, using GIS hardware or software applications. Analyze GIS data to identify spatial relationships or display result analyses.	GIS, Geography surveying, Environmental Sciences
g)Environmental Consultant	Provide advice to company and other organizations on a wide range of environment issues such as green manufacturing, hazardous-waste remediation, environment disasters, sustainability initiatives, compliance.	Environment Science
h) Environmental Planner (Environmental Restoration Planners, Urban and Regional Planners)	Collaborate with field and biology staff to oversee the implementation of restoration projects and to develop new products. Process and synthesize complex scientific data into practical strategies for restoration, monitoring or management.	Environmental Science,

i) Environmental Research Analyst (Environmental Scientists and Specialists, including Health)	Environmental research analysts spend much of their types compiling data, researching, and analyzing data. They typically spend time working both in laboratories and in the field, and their laboratory tasks involve scientific analysis of soils, hydrology, geology, air pollution, mineralogy, and more.	Environmental Science or Engineering
j) Energy Analyst (Energy Auditor)	As an energy analyst, you measure energy efficiency, analyze data on energy use, develop an energy model for buildings, recommend improvements, and assist contractors with technical support for installations	Environmental Science or Engineering
k) Environmental Lawyer	Environmental law is a broad area of law that encompasses a range of issues surrounding the environment including water and air quality, hazardous waste, species protection, agriculture, wetlands, biodiversity, waste management, green initiatives, sustainability strategies and alternative energy sources. They represent clients in legal issues related to environmental law. It is a large and complex specialty within the practice of law.	Environmental Science and Law degree

CONCLUSION:

Environment should not be taken as a fashion. It is real life situation. Only when each one of us is aware about earth, its working principles, its influence on us impact on it, we would be able to think in eco-friendly way for achieving the goals of environmental protection, the efforts by government alone are not enough. The mindset of people, their life-style and approach are very important and for this environmental awareness and education would play the most important role.

Thus participation of youth and small children in various environmental campaigns has increased over the years, which is a welcome sign. It is because the younger generation that is growing in a technologically advanced era has to face the consequences of degrading environment that has to be tackled well in timer with a 'Green Mind'.

Thank You