

# ENVIRONMENT AND SOCIETY



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## ENVIRONMENT, SOCIAL ISSUES AND BIODIVERSITY

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### ABSTRACT

Environment is the sum total of conditions in which an organism has to maintain its life process in order to survive. It consists of matter and energy. The interaction of matter and energy forms a system of abiotic (non-living) and biotic (living) components. All organisms including humans are parts of biotic components. Society is a group of people who share a common economic, social and industrial infrastructure or an organization of people who share a common cultural and social background having many issues. Human beings live both in natural and social world. Biodiversity simply means the existence of a wide variety of plant and animal species in their natural environments. The current advancement shows strong impacts on the natural as well as social issues and both these influence the biodiversity of a particular region.

**Keywords:** Ecological balance, Flora, Fauna, Biodiversity, Ecosystem, Eco-friendly, Resources.

### ENVIRONMENT

The biotic components include plants (flora), animals (fauna) and microbes while abiotic components include water, light, radiation, temperature, humidity, atmosphere, soil and so on. The systems of abiotic and biotic components together constitute an ecosystem. All organisms are dependent upon the environment from which they derive their food, energy, water, oxygen, shelter and other requirements. The environment is therefore 'a sum total of water, air, land and the inter-relationships that exist among them and with the human beings, other organisms and materials.' The environment is not static. The biotic and abiotic components are in a flux and keep changing continuously. The organisms can sustain the changes in environment within

a certain range of tolerance. There is a balance between organisms and abiotic components called the ecological balance. The ecological balance is a stable state between all plants and animals in an ecosystem. The ecological balance is sustained by the cyclic flow of materials from abiotic environment to the biotic environment and then back to the abiotic environment. Both these processes must be maintained in the ecosystem.

There is following four spheres that exist in environment:

- a) Lithosphere (Land):** This is the outer layer of the earth e.g. rocks, sediments and soils.
- b) Atmosphere (Air):** This is the layer of gases that surrounds our planet, held in place by earth's gravity.

**c) Hydrosphere (Water):** This is the layer of water that covers our planet e.g. oceans, lakes, rivers, streams, ice sheet, snow and water in the soil.

**d) Biosphere:** This is the tiniest layer, comprising organic matters i.e. plants and animals. This layer covers much of the land surface and extends into the atmosphere and deep into the water bodies. Human beings are part of the biosphere and exist by interacting with the other three spheres.

In order to protect the environment, humans must have:

1. To balance the ecosystems.
2. To minimize the indiscriminate exploitation of natural resources.
3. To maintain the quality of environment.
4. To follow updated eco-friendly technology with minimum harm.
5. To promote education related with environment.
6. To renovate, recycle and reuse of waste materials.
7. To formulate and implement strong rules regarding pollution.

### **SOCIAL ISSUES**

The social issue is related mainly with development, which has to be visualized in a holistic manner where it brings benefits to all, not only for the present generation but also for the future generations. There is an absolute need to inter-link the social aspects with development and environment. Important social issues are as following:

1. From unsustainable to sustainable development
2. Urban problems related to energy
3. Water conservation
4. Resettlement and rehabilitation of people
5. Environmental ethics

6. Climate change, global warming, acid rain, ozone layer depletion
7. Wasteland reclamation
8. Consumerism and waste products
9. Environment Protection Act
10. Environmental Legislation
11. Wildlife Protection Act
12. Forest Conservation Act
13. Enforcement of environmental legislation
14. Public environmental awareness

### **BIODIVERSITY**

The system of abiotic and biotic components together constitutes an ecosystem. In order to maintain this system, an ecosystem needs three kinds of diversity namely biological, genetic and functional. Biological diversity refers to the richness of species in a particular area; genetic diversity refers a way for a particular species to adapt itself to changing environments while functional diversity equates to the biophysical processes that happen within the area.

Biodiversity or biological diversity refers to the variety of life on Earth comprising millions of plants, animals, microorganisms and the genes they contain. It simply means the existence of a wide variety of plant and animal species in their natural environments. The biodiversity has already been detailed and described at several angles from time to time by a number of scientists such as Glowka *et al*, (1994), Kaushik *et al*, (2008), Odum (1971), Subba Rao (2001) and Verma (2016 and 2017).

The biodiversity is usually described at three levels namely genetic, species and ecosystem and all these three work together to create the unique path for life on the earth. The genetic diversity is the diversity of the basic units of hereditary information (genes) within a species, which are passed from one generation to next. The genetic diversity results in variations hence the basic source of biodiversity and the amount of genetic variation is therefore the basis of speciation.

The species diversity refers to the variety of species within a region. It is the variability found within the population of a species or between different species of a community. The species is the real basic unit used to classify the organisms and its diversity is the most commonly used level for describing the biodiversity.

The ecosystem diversity is the diversity of habitats, which include the different life forms within. Diversity at the level of community and ecosystem exists along 3 levels. First is alpha diversity (within community diversity), second is beta diversity (between communities diversity) and the third is gamma diversity (diversity of the habitats over the total landscape or geographical area).

Richard (2015) told that genetic diversity plays an important role in the survival and adaptability of a species. Thus, different levels of biodiversity: ecosystem, species and genetic, all have huge potential and a decline in biodiversity will lead to serious economic, ecological and socio-cultural losses. If we want our human race to survive then we must protect all biodiversity because biodiversity has existence value.

### SUSTAINABLE DEVELOPMENT

The conservation of environmental resources refers to management of human use of biosphere so that it yields maximum sustainable benefit to the present generation while maintaining its potential to meet the requirements of the future generations. This newer concept of development has come to be known as “Sustainable Development”, which is defined as '**development that meets the needs of the present without compromising the ability of future generations to meet their own needs**'. It also looks at the equity between gender and ages, races and classes, countries and continents. It includes social development and economic opportunity on one hand and the requirements of environment on the other. It is based on improving the quality of life for all, especially the poor and

deprived within the carrying capacity of the supporting ecosystems. It is a process which leads to a better quality of life while reducing the impact on the environment.

The sustainable development is a very complex and broad concept that incorporates following principles, which are directly or indirectly applicable to developmental activities: (a) economic sustainability, (b) ecological sustainability, (c) social sustainability and (d) cultural sustainability.

In fact, true sustainable development is the optimum use of natural resources with high degree of reusability, minimum wastage, least generation of toxic byproducts and maximum productivity. The sustainable development has multi dimensional concept incorporating the interactions among society, economy and environment. It has both intra-generational and inter-generational equities. It has following approaches:

1. Developing appropriate technology- eco-friendly, resource efficient, culturally suitable and locally adaptable.
2. Reduce, reuse and recycle (3R) approach-reduces pollution and waste generation.
3. Providing environmental education and awareness – changing attitude of the people.
4. Utilization of renewable resources – attain sustainability.
5. Conservation of non renewable resources – by recycling and reusing.
6. Population control- is our utmost need.

### ENVIRONMENTAL ETHICS

Environmental ethics is a branch of ethics and a form of philosophy which deals with the studies of relation of human beings and the environment. It includes a moral consideration of human approach to natural resources and believes that human as well as other living creatures as parts of society. Moral principles that try to define one's responsibility towards the environment are called 'environmental ethics' or 'environmental philosophy' which considers the

ethical relationship between human beings and the natural environment.

In order to save the earth and natural environment, each one should follow some guidelines at personal or individual level as under:

1. We should not deplete or degrade the earth's physical, chemical or biological assets, which support all life activities.
2. When there is an utmost need to alter nature, we should choose methods that do the least possible harm to us and other living things.
3. Before we alter nature, we should assured ourselves that our action will cause short term small environmental effects.
4. Love and honour for the earth.
5. No right to drive other species to extinction.
6. Be respectful to plants and animals which provide food and other things to us.
7. Limit the human population.
8. Avoid the wastage of natural resources.
9. Consumption of natural resources in moderate amount so that all may share this treasure.
10. Promotion of future generation to live in clean and safe environment.

### CONCLUSION

Today, the world has assumed the form of a 'global village' due to the metaphoric shrinkage of the geo-political boundaries of nation-states through the use of Information and Communications Technology (ICT). But increased and indiscriminate exploitation of natural resources by human beings in an irresponsible manner is creating an imbalance in the nature.

Since human beings are deriving all the benefits from nature and their anthropogenic activities are largely responsible for ecological imbalance and loss of biodiversity hence they should take proper care for the maintenance of ecological balance, good environment and preservation of biodiversity in all its forms.

Humans should understand that 1) existence of nature is not only for humans but for all living beings, 2) development should be inclusive incorporating the welfare of all living creatures, 3) our economic growth should encourage the earth-sustaining development, 4) the earth resources are limited and have to meet the needs of all and 5) a healthy economy depends upon healthy environment and developed society. The eco-friendly and sustainable positive efforts will definitely provide good health, inclusive and sustainable development with clean environment as well as safety to the future generation (Verma 2019).

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