

BIODIVERSITY

Mahesh Kumar Meena*

ABSTRACT

Man, most advanced form of life, before being civilised one is also a animal first, This thing implies that he is also dependent on nature for its needs. So, biodiversity has great role in the life of human beings. First of all, we can say that this whole Universe is interdependent. This can be understood by the example of food chain, nutrient chain and flow of energy within various ecosystem. Another important thing is that every economic need is being satisfied through nature. Human get food, medicine, Livestock, both etc. from nature. Other very important thing is that through the study of biodiversity we can know the process of evolution, how various species developed.

KEYWORDS: *Biodiversity, Ecosystem, Food Chain, Nutrient Chain, Livestock.*

Introduction

The biological diversity or biodiversity is combination of two words. Bio (Life) and diversity (Variety). In simple terms, biodiversity is the number and variety of organism found within a specified geographical region. Biodiversity is our living wealth. It is result of hundreds of millions of constant evolution. Biodiversity can be discussed at three levels:

- Genetic diversity
- Species diversity
- Ecosystem diversity

Genetic Diversity

Genes are the basis of characteristics in organism. Genetic biodiversity refers to the variation of genes within species as human beings. Human beings genetically belong to the group of homosapiens and also differ in their characteristic such as height, colour, physical appearance etc. This is due to genetic diversity.

Species Diversity

This refers to variety of species i.e. number of species found in a defined or particular area. This kind of diversity can be measured in term of its richness, abundance, and types Eg. tigers, lion, wolf, deer etc. Some area are more rich in species than the others. Area rich in species diversity are called hot spots of diversity.

Ecosystem Diversity

One ecosystem is different from the other on the basis of physical characteristics. As physical characteristics are different so is the ecosystem and their adaptation. So, we found different varieties of species in different ecosystem. Though, in the fact, we cannot define boundaries of ecosystems strictly. But, gradually we find that as we move from our ecosystem to another some characteristics diminish and others get increased.

A Generalised Distribution Pattern

The highest biodiversity is found in equatorial region. We may say in tropical areas, specially rain forests of the world. Here, optimum conditions are found because of uninterrupted supply of abundant moisture and water and heat throughout the year. 6000 to 7000 species of flowering plants are found in W. Africa (Congo basin), 20000 species of flowering plants in Malaysia, 40000 species of flowering plants in Brazil etc. As we move from tropical area to the poles biodiversity decreases. At the poles severity of environment increases and that does not support high degree of biodiversity.

* Assistant Professor, Geography, SPNKS Government PG College, Dausa, Rajasthan, India.

Loss of Biodiversity

Since 1600 AD. Many species have become extinct greatest in last one and half century. This has become because of growth of human population and advancement of science and technology and in turn greater use of natural resources.

Some of the basic reason of biodiversity loss can be identified under following headings.

- Habitat loss
- Habitat Fragmentation
- Habitat degradation
- Introduction and invasion of exotics species
- Increased spread of disease

On the basis of severity of loss IUCN (International Union for conservation of nature and natural resources) has classified the threatened species of plants and animals into three categories for the purpose of their conservation:-

- **Endangered Species:** Species, those are in danger in of extinction. These are listed in Red data book. eg. Indian Elephant, Indian Lion, Rhinoceros, Tibetans Anlelop, Red Panda etc.
- **Vulnerable Species:** Species which are likely to be indanger of extinction in near future if the condition are not controlled. Eg.-Yak, Nilgiri Languor, Nilgiri Morten, clouded Leopard etc.
- **Rare Species:** There are species whom population is very less or confined to very limited areas of the world. eg. Amur Leopard, Pika, White rumped Vulture, Spider Monkey etc.

Conservation of Biodiversity

All form of life are so closely interrelated/interlinked that disturbance in one gives rise to imbalance in the others. If species of plants and animals become endangered, they cause degradation in the environment that may threaten the existence of human beings itself.

So, there is an urgent need of harmony and sustainability. For this environment friendly techniques are need of hour. This can be achieved through the participation of local communities and individuals, and following steps can be taken:-

- Cutting of trees (deforestation) be avoided.
- Planting of trees (A forestation) should be adopted.
- Hunting and killing of animal which is banned be strictly enforced.
- Illegal trade in animal products should be checked.
- Alternative sources of energy should be encouraged.
- In situ and Ex. situ protection of animal and plants be practiced.
- Regular monitoring and surveys should be conducted.
- Mass awareness programmes should be conducted.
- NGO's and various other organisation be encouraged to undertake conservative works.

Biodiversity Conservation Efforts at Intuitional Level

A convention was signed in 1992 at Rio de Janeiro (CBD). This was a legally binding agreement. The Govt. of India along with 192 countries signed this CBD. Only four member states of the united nation are not parties to the CBD, namely, Andorsa, South Sudan, U.S.A. and Vatican city. The world conservation strategy has suggested the following steps for biodiversity conservation:-

- Efforts should be made to preserve the species that are endangered.
- Prevention of extinction requires proper planning and management.
- Varieties of food crops, forage plants, timber trees, Livestock, animals and their wild relations should be preserved.
- Each country should identify habitats of wild life relations and ensure their protection.
- Habitat's where species feed, breed rest and nurse their young ones should be safe guarded and protected.
- International trade in wild plants and animals be regulated.

Cartagena Protocol

This protocol was adopted on 29 Jan. 2000. It is a supplementary agreement to CBD on bio safety. This protocol protect biological diversity from the potential risk posed by living modified organism (LMO) resulting from modern biotechnology. It establishes an advanced informed agreement (AIA) procedure for ensuring that countries are provided with the information necessary to make informed decisions before agreeing to the import of such organism into their territory. This protocol contains precautionary approach and reaffirms the precaution language in principal-15 of Rio declaration on environment and development. This protocol also establishes a Bio safety clearing house to facilitate the exchange of information on LMO and assist countries in the implementation of protocol.

Nagoya Protocol

If this was also a supplementary agreement to CBD. It was satisfied by 97 parties (96 UN Motion and UN). This Protocol creates legal certainty and transparency for both the providers and the users of genetic resources. So, the motto of this agreement was fair and equitable sharing of benefit arising from utilization of resources. In Nagoya Conference in COP-10 meeting. The parties agreed that previous biodiversity targets have not been achieved. So, we need to come up with new plan and targets. A set of 20 global targets under the strategic plan for biodiversity 2011-20 was adopted this was named as Aichi Targets. The decade 2011-20 was named as Biodiversity decade.

These 20 Targets were grouped under the five strategic goals.

- Address the underlying cause of biodiversity loss by maintaining biodiversity across govt. and society.
- Reduce the direct pressure on biodiversity and promote sustainable development.
- Improve the status of biodiversity by safeguarding the ecosystem, species and genetic diversity.
- Enhance the benefit to all from biodiversity and ecosystem service.
- Enhance implementation through participatory planning, knowledge management and capacity building.

Biodiversity Conservation Efforts in India

India was signatory to CBD in 1992. But in India, we have been serious regarding this much before the International effort. Here, we have the following acts:

- Forest [Conservation act, 1927]
- Wild life [Protection act] 1972 (amended in 1991).

This act was aimed at (i) preservation and conservation of forest and (ii) to meet the basic needs of people living in and around the forest areas. Under wild life protection act protected area like national parks and wild of sanctuaries have been created. Biosphere reserves have been created since 1986.

Besides these efforts have also been made for protection of particular species, like:

Project Tiger 1973, Project Elephant 1992, Hangul (Reindeer) Project 1970, Dachigam Black Dear Project 1970 (Kedarnath) Red Panda Project 1996, Tortoise Conservation 1975 (Bhitarkanika), Rhino Project 1987, Manas, Kajiranga, Alligator Project 1975, Tikarpara etc.

References

1. Bailey, R.G. (1996): Ecosystem Geography, USDA, Forest Service, New York: Springer
2. Clements, F.E and Salford, V.E. (1939): Bio-Ecology, New York: John Wiley and Sons
3. Robinson, H. (1982): Biogeography, McDonald, London
4. Singh, Ravindra (2008): Environmental Geography, Prayag Pustak Bhawan, Allahabad
5. Singh, Ravindra (2011): Biogeography, Prayag Pustak Bhawan, Allahabad.

