



## Biodiversity; Relevance and Challenges For Humanity

Dr. Anil Kumar  
Sangwan

Lect in Geography, GSSS Atela Khurd District Bhiwani (Haryana)

### ABSTRACT

*Biodiversity is made of two words i.e. Bio means life and diversity means variety or difference meaning variety of living organisms. It is both a measure of variety of life and an indicator of overall health of our planet the Earth. The most unique feature of the Earth is the existence of life and most beautiful feature is its diversity. Approximately 9 million types of plants, animals, fungi and about 7.5 million people inhabit the Earth.*

*Biodiversity is not spread equally around the globe. Some areas possess rich species and some have not. These species or living organisms play central role in the environment. Biodiversity is of different type like Ecological diversity, Genetic diversity, Species diversity and Functional diversity. Biodiversity is the foundation for human health but its continuing loss threaten directly to human health.*

### KEYWORDS :

### INTRODUCTION

The Planet the 'Earth' only supports the life in the universe out of 8 planets. That's why the most unique feature of the Earth is the existence of life and the most beautiful feature is its diversity. Approximately 9 million types of plants, animals, fungi and about 7.5 billion people inhabit the Earth. Twenty three years ago, at the first Earth Summit in Rio de Janeiro the majority of the nations declared that human actions were dismantling the Earth's ecosystems, eliminating genes, species and biological traits at an alarming rate. This observation led to the question of how such loss of biological diversity will alter the functioning of ecosystems.

Biodiversity is made of two words i.e. Bio means life and Diversity means variety. It means variety and difference in living organisms. Biodiversity is both a measure of the variety of life and an indicator of the overall health of our planet. Among the countless celestial bodies arrayed across the vastness of outer space, only our tiny planet Earth is known to support different life. It supports on the slopes of high mountains, on the floors of the oceans, in scorching deserts and at the frigid poles. This life on Earth comes in many shapes, forms and sizes ranging from blue whales and redwoods to butterflies and tiny microbes.

Biodiversity is not spread equally around the globe. Some areas possess a richer variety of species than others. Biological diversity is of fundamental importance to the functioning of all natural and human-engineered ecosystems. Living organisms play central roles in the environment, and diversity specifically is important in the cycles (Carbon, Nitrogen and so on) of major elements require numerous interacting species.

### Biodiversity is of different following types:-

**Ecosystem or ecological diversity:** It is the variety of biological communities such as forests, deserts, grasslands, streams, lakes, oceans, coral reefs, wetlands that interact with one another and with their physical and chemical (non-living) environments. A biological community is defined by the species that occupy a particular locality or interaction between those species. A biological community together with its associated physical environment is known as an ecosystem.

**Genetic diversity:** It is the variety in the genetic makeup among individuals within a species. Genetic diversity is the "raw material" that permits species to adjust to a changing world whether these changes are due to natural factors or are caused by human factors. It refers to the variation at the level of individual genes and provides a mechanism for populations to adapt to their ever-changing environment.

**Species Diversity:** It is the variety among the species or distinct types of living organisms found in different habitats of the planet. Species diversity is a measure of the diversity within an ecological community that incorporates both species richness (the number of species in a community) and the evenness of species' abundance.

Species diversity is one component of the concept of biodiversity and is influenced by species richness.

**Functional Diversity:** It is the biological and chemical processes of functions such as energy flow and matter cycling needed for the survival of species and biological communities. It refers to the diversity of ecological processes that maintain and are dependent upon the other components of diversity. It includes the many ecological interactions among species e.g. competition, predation, parasitism, mutualism, etc. as well as ecological processes such as nutrient retention and recycling. It also includes the varying tempos and intensities of natural disturbances that many species and communities require if they are to persist.

### Importance of Biodiversity -

Biodiversity is the foundation for human health. By securing the life sustaining goods and services which biodiversity provides to human being. The conservation and sustainable use of Biodiversity can provide significant benefits to our health. On the other hand, the continuing loss of Biodiversity of a large scale represent a direct threat to our health and well being. Thus without Biodiversity no human population can exist.

It seems equally ironic that whilst poverty reduction is rightly on everybody's mind, few recognize that the livelihood of the poorest 1.2 billion people on Earth depends either entirely or at least partly on wild resources. According to a World Bank study, for example, more than two billion people rely on traditional medicine. Thus, biodiversity conservation, and more specifically species conservation, must also be seen as an essential part of the maintenance of a healthy human environment and as crucial to the economic well-being of all societies. Threats that put species in danger are by this logic also a danger to humanity.

The rich variety of genes, species, biological communities and life-sustaining biological and chemical processes that give us food, wood, fibers, energy, raw materials, industrial chemicals and medicines all of which pour hundreds of billions of dollars into the world economy each year. It also provides us with free recycling, purification and natural pest control services.

### The following points state the importance of biodiversity:-

- It supports food security, dietary health and livelihood sustainability
- It provides important resources for medical research.
- It provides importance resources for traditional and modern medicine.
- It plays a role in the regulation and control of infectious diseases
- It has social, cultural and spiritual importance within communities

- Conservation of biodiversity is essential for climate change adaptation.
- It helps in generation and fertility of soils.
- It helps in maintenance of soil quality.
- It helps in maintenance of air & water quality
- It helps in pest control
- It helps in pollination
- It helps in crop production
- It helps in climate stabilization
- It helps in prevention and mitigation of natural disasters
- It helps in provision of food security
- It helps in provision of health care – medicines
- It helps in income generation
- It helps in spiritual and cultural value

### Challenges to Biodiversity –

Biodiversity is the life insurance of life itself. But extinction is a part of nature. In fact, an estimated nine (9) percent of species become extinct every million years or so. Now, 65 million years after that last of the dinosaurs disappeared in the most recent extinction episode, it is happening again. But this time, species are becoming extinct at a rate roughly 10,000 to 25,000 species are disappearing each year and dozens each day. This is not due to environmental changes, it is due to the very actions of our own species. . . . man. So we have to change our actions to stop the following types of biodiversity loss;

- The exploitation of natural resources, such as the world's oceans and forests faster than they can be renewed, i.e. overharvesting of trees for timber and oceans for food.
- Overpopulation – the world's population is estimated to be over 7.5 billion
- Draining wetlands, clearing forests and grasslands for agricultural purposes, towns and cities
- Ruining habitats by fragmentation, due to road construction and development
- The introduction of harmful species into foreign ecosystems, e.g. the introduction to black rats to Antigua and Barbuda, which has left the Antiguan Racer Snake as critically endangered.
- Releasing toxic pollutants into waterways and lands
- Climate change – continued rise of global temperatures
- Poaching as well as the unsustainable hunting and illegal trade of wildlife.

Preservation of biodiversity is not necessarily about preserving everything currently in existence. It's more a question of 'walking lightly' on the Earth — a balance of respecting the natural changes that occur and of protecting species and environments from wanton extinction and destruction.

Biodiversity is under threat worldwide. For example the global mammalian extinction rate of 0.35% of species lost per century since 1600 AD.

### Endangered Family of Species –

Kite, eagle and sparrows are at the risk of becoming extinct which flew in a flock earlier and were beneficial for maintaining ecological balance, eco-system and food chain. But today they are on the edge of extinction because of which our bio-diversity is going to be effected.

According Wild Life Trust of India (W.T.I.) 134 vultures has been killed in last three months. Vultures are an endangered species, having faced a 95% population decline in the decade 1993 to 2002. Main cause of this decreation is diclofenac-a banned veterinary drug, despite being banned diclofenac is still being used to treat domestic live stock. Vulture die immediately after consuming carcasses of such animals. In different parts of country poisonous carcass is used to kill stray dogs and animals but scavengers become the victim. Here we can take the case of Shivsagar of Assam, where 55 vultures were found dead on 24 January, 2015.

### “Biodiversity is Nature's Insurance Policy against Disasters”

Biodiversity is the life insurance of life itself. The intra-specific diversity is the insurance for specific survival in difficult time. The inter-specific diversity is the guarantee for ecosystem functioning and services. The variation of functional ecosystem is the life insurance for sustainable development.

### Conclusion

Given good will, an effective instrument for fostering sustainable development. Terrorism is now the focus of global attention. Modern biotechnology is a potent instrument for modifying micro-organisms to be deadly to humans, crops and of the environment. If national and International summits does not create the necessary good will, the prospects for sustainable development are bleak. Even human survival as a species may become doubtful.

It is not possible to be brought about by policies only but it must be taken up by society at large as a principle guiding the many choices each citizen makes every day, as well as the big political and economic decisions that affect biodiversity. It is clear that environmental degradation tends to impose the largest costs on those generations that are yet to be born. We can only improve sustainable life when it will put an emphasis on conservation of biodiversity by involving citizens and stakeholders. Ultimately, the vision will become reality only if everybody contributes to a world where economic free-

## REFERENCES

- 1 Tewolde Berhan Gebre Egziabher, GM, Environmental Protection Authority, Ethiopia. | 2 Stephan Schnierer, Southern Cross University, Limore, Australia. | 3 Claude Martin, DG, WWF International | 4 International working Group on Biodiversity, F.A.O. (WHO) | 5 E. Somanathan, Bio-Diversity of India. | 6 www.planningcommission.nic.in | 7 Amarujala Newspaper, 16 March, 2015. |