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Need and strategy for conservation of biodiversity in India

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Abstract

Biodiversity is the lifeblood of any ecosystem because the more biodiversity is in the ecosystem, the healthier that ecosystem is and the more in balance. Generally, biodiversity refers to the diverse presence of plants, plants and animals in any ecosystem. Due to this, the food chain and energy flow continue smoothly and whenever its diversity decreases, the energy flow and food chain are bound there and due to this many animals and plants of that ecosystem are destroyed, due to which the animals and humans living there have to face a lot of problems. At present, due to industrialization and urbanization, materialistic thinking is being promoted in the world as well as in the India. Due to this, the tendency of luxury is also increasing among the people, so man is becoming more comfortable, due to which natural resources are being exploited rapidly, biodiversity has been threatened, along with this, conservation of biodiversity is absolutely necessary for the future generations of the India to get a healthy environment. What are the reasons for the decline of biodiversity in India? Several efforts are also being made by the Government in India to conserve biodiversity. All of them are described in this article. Before writing this article, researcher studied many books, papers, journals and research papers and tried to know what is the concept of biodiversity? Why is it necessary for India? How can it be preserved in India? Again, this article has been created with the aim of increasing awareness in this regard among the people and spreading its concept to the people in a simple form.

Key Words

Biodiversity, Ecosystem, Resources, Conservation, Urbanization, Industrialization.

Concept of Biodiversity

Biodiversity expresses the biological diversity or biological richness of the whole earth or a region, that is, the species of different plants and animals of an area together form biodiversity, in which the area in which the number of trees, plants and animals and their species is high, the more rich that area is considered to be rich in terms of biodiversity. The less it is, the more it is poor in terms of biodiversity.

The term biodiversity was first used by biologist Thomas Eugene Lavzay in 1980, he used the term biological diversity for it. In 1985, W. Roshan first used the term B or biodiversity, according to which the different types of characteristics found in all the trees, plants and animals of the earth are called biodiversity. But the work of giving the basis to the concept of biodiversity was first done by E. O. Wilson, so he is called the father of biodiversity. (Maurya S.D. Maurya And Maurya R.K.2018)

Definitions of Biodiversity

1. Biodiversity is the diversity found in all sources such as interregional, terrestrial, oceanic and other aquatic ecosystems between organisms as well as all the ecosystem groups of which these are a part. (Earth Summit – Rio de Janeiro, 1992)
2. Biodiversity or biological diversity is defined by the interactions between all organisms found in different types of ecosystems and the processes that take place between them. (E. O. Wilson)
3. Biodiversity measures the level of diversity of a particular genetic, species and ecosystem.(UNEP)

Types of Biodiversity

There are three types of biodiversity:

1. **Genetic Variation**: Genetic variation found in species is called genetic diversity, it is the result of different types of adaptations of organisms in different habitats. Due to this, there is a difference in the color, height, qualities etc. of a species living in different ecological zones.
2. **Species Diversity:** The diversity found in species is known as species diversity, any particular community or ecosystem has organisms of the same species of different sizes, heights, colors, forms.
3. **Ecosystem Diversity:** Ecosystem diversity is the diversity in the ecosystems found on the earth in which species live, this diversity is reflected in biogeographic areas such as lakes, deserts, estuaries, tropical areas, etc. Due to this, there has been a diversity in trees, plants and animals.

Biodiversity in India

India occupies only 2.4% of the world's area but has seven to eight percent of the world's biodiversity, about 45000 species of plants are found in India, which is 7% of the total plant species of the world, out of which 1336 species are on the verge of extinction. Similarly, about 15000 flower species are found in India, which is 6% of the world's flower species, out of which 1500 species are threatened with extinction.

The India contains 91,000 species of animals, 6.5% of the world's fauna, of which 65,000 species of insects, 2,456 fish species, 1,230 bird species, 372 mammals, 440 reptiles, 200 amphibians and 500 molluscs species. There are 400 species of sheep, 27 breeds of cattle and 22 species of goats found in the India. The above description shows that India is a museum of species. That is why almost most types of species are found here. The reason for this is that all types of climate, elevation or geographical areas are found in India which are found in different climatic regions. (Forest Report-2019, GOI)

Need for Biodiversity for India

India is a huge country with about 134 crore people, it is 2.4% of the total area of the world. In terms of area, it is the seventh largest country in the world. In terms of population, it is second only to China. Some of the key points that refer to the need for biodiversity in India are given below.

1. **Ecosystem Need:** No flora or organism develops without reason in the ecosystem, everyone has its own importance because all are dependent on each other, one does not exist without the other, the more diversity there is in the ecosystem and the greater the ability of species to live in adverse conditions, as well as the more stable that ecosystem is, hence the biotic in the India. Variety is extremely important.
2. **Economic Need:** Generally, biodiversity is a storehouse of resources, different needs of humans along with different organisms are also fulfilled due to biodiversity. Its usefulness is helpful in the manufacture of food items, clothes, house construction, medicine manufacturing, cosmetics etc. About 134 crore people live in India, so that so many people can meet the basic needs of life, it is very important to maintain biodiversity.

3. **Scientific Need:** Biodiversity helps us in researching the development of organisms and flora, each species tells us how life began and how it will develop in the future. The level of biodiversity is a good measure of our relationship with other living species.

The Main Causes of Loss of Species Diversity in India

Due to the increasing materialistic life philosophy in the India, many species have reached the verge of extinction for example tiger, cheetah, crocodile, musk deer, tortoise, vulture, swans, etc.:

1. **Habitat Destruction:** Due to increasing population, urbanization and industrialization, the habitats of plants and animals are being destroyed as cities and agricultural areas are gradually expanding and concrete jungles are emerging. Due to this, trees and plants are being cut and as a result, the habitat of animals is also decreasing, due to which biodiversity in the India is decreasing.
2. **Habitat Fragmentation:** Due to population, a network of new cities, roads and railways is being formed every day, due to which the habitats of the ecosystem are being fragmented and due to this biodiversity is also decreasing. Because animals naturally feel safe in large habitats and when their habitats become smaller, there is movement of humans inside them, which is a threat to their safety.
3. **Environmental Pollution:** Due to the increasing environment and global warming, many species of trees and plants are being destroyed and due to this, the animals living on the related plants are also ending in the absence of their ecosystem, so environmental pollution is a major threat to biodiversity.
4. **Invasion of Plants of Foreign Origin:** At present, the whole world has become a global village. Due to this, the species of trees and plants are also spreading globally, due to which many species that have come to India from other parts of the world have destroyed or reduced the indigenous species here, due to which the biodiversity in the India is also decreasing rapidly.
5. **Over Exploitation:** To meet the needs of the growing population, the exploitation of forest resources is taking place, due to which many tree and plant species of the country and the species of animals dependent on it are being destroyed, due to which the biodiversity in the country is decreasing.
6. **Hunting:**In the country, many hunting people and smugglers kill rare creatures and sell their leather, horns and other parts at expensive prices and many enthusiasts also buy them, due to which many creatures are being eliminated. Similarly, the wood of trees like sandalwood is also in great demand in the market, due to which many people cut it and sell it at expensive prices in the market, it is among the main reasons for the decline of biodiversity.
7. **Forest Destruction:** Due to the increasing population, the agricultural area is expanding day by day, due to which the areas which were earlier under forests are now being used in agriculture and housing use, due to which the forest area is decreasing across the country, consequently biodiversity is decreasing.
8. **Overgrazing:** Due to overgrazing of animals in different parts of the country, many tree plant species are also disappearing and due to this, other animals dependent on these plants are also decreasing, this is also one of the reasons for the decline in biodiversity in the country.
9. **Use of Pesticides:** After the Green Revolution, the use of fertilizers and pesticides in agriculture and plantation agriculture has increased rapidly, due to which many tree plant species are being destroyed and due to this many animals which eat leaves of plants containing pesticides are eliminated. Creatures like eagles etc. are almost finished. Maurya S.D.& Maurya R.K.

Efforts to Conserve Biodiversity in India

India is one of the few countries in the world that started efforts since 1972 to conserve biodiversity, for this, many efforts are being made for the conservation of forests and animals in the country.In addition, a number of schemes are in operation across the country for conservation of species.

Conservation of Forests

Forest conservation is a complex relationship of forests with life and environment.Forests directly and indirectly benefit us and other animals a lot, so conservation of forests has an important role in biological and human development, that is why the India Government had made a forest conservation policy in 1952 for the whole country, which was revised in 58, this policy was amended again in 1972. In the year 1988, a new forest policy was implemented in the country. As per this policy, the Government is emphasizing on sustainable forest management which will conserve and develop forest resources and on the other hand the needs of the local people will also be fulfilled. The main objectives of this forest policy are as follows:

1. Forest will be planted on 33% of the country, whereas at present only 22% of the area is forested.
2. To maintain the ecological balance, emphasis should be laid on planting forests in ecologically undisturbed areas.
3. Conservation of natural heritage, biodiversity and genetic flower of the country.
4. Preventing soil erosion and desertification and making efforts for flood control.
5. Expansion of forest cover by social forestry and afforestation on vacant lands.
6. Increasing the productivity of the buns, providing timber, fuel, fodder, food etc. to the people dependent on the bano.
7. To create awareness among people for planting trees and to run a mass movement for the protection of trees.

To fulfill this objective, the concept of social forestry was also adopted, forestry has come on the cheek, management and protection of the purpose of helping in environmental, social and rural development and the planting on the Saravan. Under this, the villagers should put bunds on the bunds of fields and vacant land along the roads, railway tracks and canals, or use their fruits, wood etc.

In the India, emphasis is being laid on the creation of three types of protected areas for the conservation of forests and wildlife (Forest Policy: 2018 Government of India)

1. **National Park:** It is a fully protected area by the Government, in which there is complete control over human activities. Its limit is fixed. At present, there are 102 national parks in the country, in which there is also a ban on grazing of animals, cutting of trees etc.
2. **Sanctuaries:** These are partially protected areas where there is no restriction on grazing of animals or felling of wood for fuel etc. There are over 515 sanctuaries across the country.
3. **Biosphere Reserves:** It is also a protected area, its size is quite large, a biosphere reserve can include national parks or sanctuaries. Its central part is called the buffer zone which is completely protected, no human work is allowed in it, while the other is the outer area, in which a little wood cutting, grazing of animals can be done with permission.

At present, 102 national parks, 515 wildlife sanctuaries and 21 biosphere reserves have been created in the country, the total area is 1.57 crore hectares.

Conservation of Organisms

Many efforts are being made by the Government for the conservation of organisms in the country along with forests, in this sequence, the Wildlife Act 1972 was passed, which makes the legal framework for the conservation and protection of wildlife:

1. To provide protection to endangered species listed in the Schedule.
2. Creation of safe habitats for wildlife and their protection.

At present, there are many projects going on for the conservation of wildlife across the country, some of them are important.

1. **Tiger Conservation Project:** This project was started in 1973, under which many protected areas were created for the conservation of tigers in the country, in which Dudhwa National Park and Corbett National Park in Uttar Pradesh, Gir Sanctuary in Gujarat, Nandankanan Sanctuary in Orissa are prominent.
2. **Elephant Conservation Project**: This project was started in 1992 from Singhbhum district of Jharkhand, the objective of this project was to increase the number of elephants decreasing in the country, under which the first sanctuary was established in Kottur in Kerala. Under this, sanctuaries were also established at Lemo Arrow and Badal Khol in Chhattisgarh. Apart from this, many other elephant conservation areas have been established by the India Government.
3. **Crocodile Conservation Project:** This project was started in 1974, so far 16 crocodile breeding centers have been established in the country, a similar crocodile breeding center is established in Kukrail area in Lucknow.
4. **Musk Deer Conservation Project-** This project was started in 1970 from Kedarnath Sanctuary in Uttarakhand. The Dachigram Sanctuary of Jammu and Kashmir has also been created for the conservation of musk deer.
5. **Turtle Conservation Project-** In 1975, the scheme for conservation of turtles was started by the Government of Orissa, first it was started in Bhitarkanika Sanctuary, later it was extended to many other sanctuaries.

Conclusion

In this article, we have explained the basic concept of biodiversity and simplified analysis of its definition given by various scholars and its different types. Subsequently, an authenticated description of the status of biodiversity in India has been given. Again, the need for biodiversity has also been highlighted in the India. Finally, while mentioning the main reasons for the loss of biodiversity in the India, the efforts being made by the India Government for its conservation are also given in detail. It is believed that this article will prove to be an important link in the series of biodiversity studies.

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