Bio means life and diversity means variations. So in general term biodiversity means range of variations among all forms of life whether plants and animals. It is very complex in nature. Till today we do not know how many species of plants and animals exist in this living world. Some Scientists say that it is in between 10 to 80 millions. Out of that only 1.7 millions have been identified and given scientific names. So from this it can be imagined how complex is the biodiversity of the world. Biodiversity can be expressed in terms of genetic and species diversity. The genetic diversity leads to formation of new species in the process of natural selection through chromosomal mutation in the process of Sexual Reproduction. The species diversity may be within the species (Intra-specific) or in between the species (Inter-specific). Lot of variations are observed in any biological ecosystems.

Loss of Biodiversity

Any biological system or ecosystem is dynamic in nature. It is never static. It changes continuously. So at any point of time there may be continuous growth. After some time the system reaches its peak and then vanishes. It is the law of the nature. Darwin's theory of evolution of species says that one species is lost when it can not cope up with the new surroundings. Another species is created. But this process is very slow and takes millions of years. But due to excessive action of the human being this process is exaggerated now. For example according to a survey from tropical forest 5 plant species are lost in each hour. The species extinction has grown to such an extent that the survival of human being is at risk.

Due to excessive exploitation of the natural resources, loss of biodiversity is taking place at an alarming rate. Some of the major reason of loss of biodiversity are:

1. Deforestation is the major cause of loss of biodiversity.
2. Shifting cultivation in Forest area leads to destruction of Forest biodiversity.
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3. Increase in livestock population.
4. Destruction of mangrove forest for shrimp cultivation.
5. Diversion of forest land for industry.
6. Loss of evergreen forest area for conversion to tea cultivation.
7. Illicit removal of trees from forests.

Biodiversity Conservation:

The World Conservation Strategy gives three basic objectives for natural resources conservation. They are:

a. Preservation of genetic diversity
b. Maintenance of essential ecological process
c. Sustainable use of natural resources

The United Nations' Organization (U.N.O.) conference on environment and development was held at Rio, Brazil in 1992. It emphasized the conservation of rich biodiversity of the world. The biodiversity of plant species maintains the rainfall level. It regulates climate and environment stability. Broadly the biodiversity conservation may be categorized into two types:

1. In-situ Conservation:- This method emphasizes that the biodiversity is conserved in its natural state. So that there is healthy competition among the species.

2. Ex-situ Conservation:- This method says that the conservation process is done outside the natural habitat of the plant or animal population. Some population of animals or group of plants are maintained in captivity or in cultivation. The establishment of different Botanical Garden and Zoological Parks are examples of this method. The biggest ex-situ conservation of animals is the Nandankanan Zoological Park at Barang near Bhubaneswar. This method is very cost effective and constant monitoring is necessary for its maintenance. Some of the major points of biodiversity conservation are:

1. Sustainable use of biodiversity
2. Conservation of medicinal plants
3. Restoration of damaged ecosystem
4. Motivation of local people
5. Utilisation of waste land for indigenous species
6. Awareness among school children through Eco-club

Forest Biodiversity of Kalahandi district

Let us come to the forest biodiversity of Kalahandi district. The district of Kalahandi occupies the south-west portion of Orissa. It is bounded on the north by Bolangir, south by Nowrangpur and east by Kandhamal district and on west Chhattisgarh State.

Forest are renewable resources covering millions of living organisms of both plants and animals living in perfect harmony with nature. The tropical forest are considered as the most biodiversity rich vegetation of the world. These constitute only 7% of total land surface of the world. The Forest of Kalahandi displays a great...
floristic diversity due to wide variation of topography, altitude, climate and soil. Mostly it belongs to Tropical forest both dry and moist. During Summer season, forest become leafless. The presence of 'Sal' in this district is very remarkable. The natural occurrence of both 'Sal' and teak known as ecotone is special characteristic of this district.

According to Champion and Seth classification of Forest type of India, following forest types are seen. Besides there are numerous subtypes also.

(a) **Tropical Moist deciduous Forest:**

This forest type is seen in M.Rampur, Thuamul Rampur and Narla area. Some plant species are Xylia xylocarpa, Alstonia scholaris, Adina cordifolia, Terminalia tomentosa, Pterocarpus marsupium, Syzygium cumini, Terminalia Arjuna, Terminalia hellerica etc.

(b) **Southern dry deciduous forest:**

This type of forest is seen in Kegaon, Kesinga area. Some plant species are Boswellia serrata, Acacia catechu, Cassia fistula, Lagerstroemia parvifolia, Anogeissus latifolia, Aegle marmelos, Delbergia paniculata etc.

(c) **Dry bamboo breaks:**

It is found in Th.Rampur part of Karlapat Kegaon area. The bamboos are found forming a pure crop in steep and dry hills which were subjected to shifting cultivation in the past. The common species is Dendrocalamus strictus.

The Forest of Kalahandi has got South Indian affinity. The rare type of flora and fauna are unique in its habitat. So proper steps may be taken for safeguard of these unique biodiversity to save it from further degradation.

**References :**

2. *Orissa District Gazetteer, Kalahandi District* by Sri Nilamani Senapati, Govt of Orissa.

Manoranjan Pattanayak is working as Forest Range Officer, Kesinga in the District of Kalahandi.