

## Degradation of Biodiversity: The Great Risk

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### ABSTRACT

May, 22 is celebrated as International Biodiversity Day. The year 2010 was declared, on UNO's initiative, the Biodiversity year. This highlights the importance of biodiversity in human life. Every organism in the environment plays an important role in maintaining ecological balance. Plants apart from being used as vegetables, cereals, fruits, medicines make our environment and our earth and water pollution-free and human friendly. They also prevent floods, soil erosion maintaining soil fertility and nutrient cycling similarly, insects and other animals maintain the balance through food web.

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Uncontrolled deforestation, industrialization, urbanization and conversion of natural vegetation-rich areas into agricultural land are the main reasons for threats to biodiversity. Cities are extending towards villages and, thus villages are being swallowed by cities. Overgrazing by domestic animals and poaching for smuggling of rare plants and animals are destroying some habitats and are increasing pressure on other habitats leading to extinction of many species of plants, animals and other organisms. Many species are endangered and many are vulnerable. The **Earth Summit** (1992) of Rio-de-Janeiro (Brazil) in which 150 countries of the world participated greatly emphasized conservation of earth's biodiversity.

Conservation of biodiversity means proper utilization, preservation and protection of natural resources, a sustainable utilization of natural resources. Efforts in this direction have been made in our country at various levels-the state governments, union government, union government and NGOs levels. Declaring certain areas as National Parks, Sanctuaries, and Biosphere Preserves by governments through various acts and ordinances are significant indicators of these efforts.

May, 22 is celebrated as International Biodiversity Day. The year 2010 was declared, on UNO's initiative, the Biodiversity year. This highlights the importance of biodiversity in human life. The term biodiversity refers to all forms of life around on this earth. It includes all biotic components such as plants, animals and other organisms, visible as well as invisible. It is assumed that a

large part of biodiversity still remains unknown and unexplored, reason being that a large number of micro-organisms such as bacteria fungi, etc. have failed to enter the focus of attention of the scientists. For example, as believed by scientists, some knowledge is available about ten lakhs species of insects while, as estimated, there are one to three crores of species of insects on this earth. Same is the case with many plants and animals also.

The variety and variability among ecosystem complexes in general and among all groups of living organisms in particular is termed as **Biodiversity**. Variability among different living organisms from one ecosystem to another or within one ecosystem itself also comes under the meaning of biodiversity. It also means variability of organisms within one biome or from biome to another biome. There can be different levels of biodiversity according to genetic differences within a species or according to differences in different species within a region. Accordingly, there may be genetic diversity and species diversity.

Biogeography dealing with the geographical distribution of plants and animals, phytogeography with the origin distribution and environmental inter-relationships of plants and zoogeography with the origin, distribution and environmental inter-relationship of animals has made a great contribution in the field of the study of biodiversity.

### Importance of Biodiversity:

Human life is unavoidable linked with environmental biodiversity, which affects its

quality and survival in numerous ways, every organisms in the environment plays an important role in maintaining ecological balance. Even in the day-today life, the plants, animals, and various other organisms contribute greatly to the sustenance of human life. Vegetables, cereals, fruits are used by human beings as food. Wild varieties and domesticated varieties both are useful for us. There are many plants which are used by Ayurveda, Homeopathy and even modern system of medicine for preparing various kinds of medicines. Neem, Amla, turmeric, ginger, garlic are commonly used as medicinal plants, Penicillin, cinchona, etc. are also used very commonly as medicines. According to World Health Organization 80% of world population depends on convention system of medicines which uses, by and large, medicinal plants. Research has revealed that phyllanthus (भुई-आँवला) an ordinary plant has the quality of curing hepatitis, dangerous disease and periwinkle (सदाबहार) can cure some forms of cancer. There may be many more such plants in nature. Many plants absorb pollutants from environment and make it pollutant free for human beings. There are plants which absorb pollutants from environment and make it pollutant free for human beings. There are plants which absorb pollutants from the earth making soil and water human friendly. Products from plants as well as animals are used for business and commercial purpose. Food products, medicines, textiles, leather, tusk, silk, horns ivory, etc. all are marketized. All these have great commercial value.

Different forms of vegetation prevent floods, soil, and erosion; maintain soil fertility, nutrient cycling, etc. similarly, insects and other animals maintain the balance through food web. The birds, lizards, rats, cats, frogs, girgit, owl kill and eat insects and make our environment worth living; otherwise the population of these insects would have increased to the extent of human living being impossible. As pointed out by Kaushik and Kaushik (2004) a typical tree provides \$196,2150 worth of ecological services as oxygen, clean air, fertile soil, erosion, water cycling, wildlife habitat, toxic gas moderation, etc. whereas its worth is only about \$590 if sold in the market as timber.

India is one of the world's 17 mega diverse countries. India has only 2.4% of world's land while its biodiversity is 7 to 8% of total world's

biodiversity. There are 45,500 species of plants and 91,000 species of animals in India. India's biodiversity consists of 59,353 species of insects, 2,546 species of fishes, 460 biodiversity consists of 59,353 species of birds and 397 species of mammals.

#### **Threats of Biodiversity:**

Uncontrolled deforestation, industrialization, urbanization and conversion of natural vegetation-rich areas into agricultural land are the main reasons for the threats to biodiversity.

**Urbanization** alone has caused too much destruction of habitats. According to Jagmohan (2005) during 1990-2000 41 crores 30 lacs people had been added to cities. Cities are extending towards villages and, thus, villages are being swallowed by cities. This is leading to continuous destruction of some habitats and increase in pressure on other habitats. **Overgrazing** by domestic animals leads to gradual conversion of vegetation-rich areas into barren lands and deserts.

**Poaching** for skin, ivory, fur, meat leads to loss of animal species. Smuggling of rare plants, tortoise, birds, etc. is doing a great harm to our biodiversity. Increase in consumerism has led to use of leather bags, purse, fur coat, jackets of leather, etc. Various cosmetics are also prepared with plants and animal parts. Exports of many of these items are done from one country to another. If this trend continues the day is not far when the human species will become extinct. Therefore, to save our future generation it is important to initiate and implement conservation strategies to save biodiversity.

Because of under and unwarranted human interference caused by human greed and selfish motive India's biodiversity has suffered a great setback. It is estimated that 659 species in India are endangered or vulnerable which include 96 species of mammals, 76 birds, 25 of reptiles, 40 of fishes, 109 of other various living organisms and 246 species of plants. Seven species of animals and plants have already become extinct, while 51 and 45 species respectively of these are highly endangered. Passenger pigeon is an example of **extinct species** whereas great Indian Bustard and Red Panda are among **Endangered Species**. According to Sharma (2001) 12 out of 19 species of primates is endangered. Nilgiri Langur, and Hoolock gibbon (the only ape in India) are also among them. Twenty eight out of 36 carnivora

species are endangered. Indian wolf, jackal, tiger, Indian lion, leopard, striped hyena are some of them. Several species of turtle, estuarine, crocodile, ghariyal and Indian python are also endangered reptiles. Among flora in India 450 plant species have been categorized as endangered. Scientists say that if it goes as it is then by 2050 thirty percent of living organisms will have become extinct. They also estimate that 1,40,000 species of living organisms are becoming extinct every years.

With this aim in view a “**Convention on Biological Diversity, the Earth Summit**” was organized at Rio-de-Janeiro in 1992. In this convention 150 countries of the world signed an agreement on conservation of biodiversity. India was also a participant in that which signed that agreement too, which is in force with effect from 29<sup>th</sup> Dec., 1993. India has passed a Biodiversity ordinance in 2002 which aims at conservation of biodiversity of our country.

#### **Conservation Efforts:**

Conservation of biodiversity means proper utilization, preservation and protection of natural resources, a sustainable utilization of natural resources. Efforts in this direction have been made in our country at various levels-national, state and

N.G.O.s level. For protecting wild life (flora and fauna), different species of plants and animals the government has declared certain areas as **National Parks, Sanctuaries, and Biosphere Reserves**. The states and the union government of India have made a number of wildlife acts from time to time. Assam Rhinoceros Preservation Act (1954), Endangered species Acts (1954), Indian Board for Wild Life (IBWL, 1952), Wildlife (protection) Act, 1972, etc. are some of these. Besides these there have been special projects for endangered species such as Project Tiger (1973), Gir Lion Project (1972), Crocodile Breeding Project (1976), etc. A few more recent legislative acts are Biodiversity Ordinance (2002), Coastal Area Management Draft Notification (2008) National Forest Policy (1988).

However, these efforts are not enough. What is more important is people’s awareness and participation in biodiversity conservation. For this formal as well as non-formal educational strategies have to be developed and implemented effectively with a view to enable the students and the Indian youth to develop sound knowledge, more favorable attitudes and relevant skills pertaining to conservation of biodiversity.

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