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INFLUENCE OF BIODIVERSITY ON HABITATS AND ITS IMPACT ON INDIAN ECOSYSTEM

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ABSTRACT

The term biodiversity refers to the totality of species, populations, communities and ecosystems that constitute the life of any one area or the entire planet. The livelihood of the organisms and habitats in which they live is of primary importance with respect to their variety and variability. In reality many species share common habitat requirements and hundreds of species coexist in close proximity. The moment natural conditions get affected by any means the habitats go on degrading. India is a country with mammoth population of more than 120 crores. This influence the change of habitats in their present circumstance. If at any instance the ecology gets endangered, habitats go on reducing since they do not find conducive environment to live in. Over the course of time, human cultures in India have emerged and adapted to the local environment, discovering, using, and altering local biotic resources. Many areas that were natural do not have any existence in the present scenario. This influence of biodiversity has definitely put a long mark on the Indian Ecosystem. Timely remedial measures may save the whole ecosystem in general and India in particular.

Key words: Biodiversity, Ecosystem, Biosphere, Habitats.

INTRODUCTION

Genetic variation occurs to varying degrees in most species of plants and animals. There is high genetic variation in Indian animals like rhinos, elephants, tigers and even if lions but fortunately it is too low in case of cheetahs. The genetic make-up of an individual species is not static in this Indian subtropical climate, but it changes as a result of both internal and external factors. This variety of genetic material within species has enabled distinct species to evolve through natural selection.

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New genetic variation is produced in populations of organisms that can reproduce sexually by recombination and in individuals by gene and chromosome mutation (Joseph, 2010). There has been a definite bias towards describing large organisms, those that are considered attractive viz. flowers and butterflies, most closely resembling human viz. mammals and those have a direct impact on human activities viz. pests. Studies of biodiversity traditionally focus on charismatic mega fauna (Bush et.al, 2013). It is hence a matter of debate how can coral reefs exist without algae, and the solution is very simple. Larger organisms exist if micro-organisms

are present. This throws a light how the survival of one ecosystem completely depends on the existence of the other ecosystem.

BIOGEOGRAPHY OF INDIA

It is a fact that the Indian ecosystem has been based on biogeography. The major objective of this bio geographical classification is based on scientific facts and is to enable conservation planning.Indian bio geographical classification uses four levels of planning units. They are:

Bio geographic zone: The Himalayas and Western Ghats are the biogeographic zone in India which are large distinctive unit of similar ecology, biome representation, community and species.

Biotic province: North west and western Himalayas either side of Sutlej is of this category which are secondary units within biogeographic zone, giving weight to particular community separated by dispersal barriers or gradual change in environmental factors.

Land region: Aravalli mountains and Malwa Plateau in Gujrat-Rajwara province

Biome: This is an ecological unit such as swamp or wetland or temperate broad leaved forest which could be found in several biogeographic zones or provinces. Biome is spread across India in every coastal and backwash regions of India.

BIOTIC FACTORS

In the ecosystem all organisms interact among themselves. Some of these interactions occur between the individuals of a species population known as Intra species and some between different species population defined as Inter species. Some of these interactions or associations are favourable to both interacting populations, some may be favourable to one species population and not to the other, and so on. All these interactions form the biotic factors (Dash and Dash, 2010).

BIODIVERSITY

From the driest desert of Thar in Rajasthan to the dripping rain forest of N-E India, from the highest mountain of Uttaranchal to the deepest oceanic trenches of Coastal India, life occurs in a marvelous spectrum of sizes, colours, shapes, life cycles and interrelationships. The varieties of organisms and complex ecological relationships give the biosphere its unique, productive characteristics. Biodiversity, the variety of living things, also makes India a more beautiful and exciting place of life. The three different type of diversities viz. genetic diversity, species diversity and ecological diversity are felt in all the places of India in different forms (Cunningham andCunningham, 2010).

Threats to Indian Biodiversity

Elimination of a species whether large or small is a normal process of natural world. Species died out but substituting their own descendants. This very common process of ecosystem known as evolutionary change. In undisturbed ecosystem of Indian in an average one species disappears in every decade. In the last century approximately 10000 or subspecies or species have become extinct (Cunningham andCunningham, 2010). More than 99% of the species that ever existed have become extinct which has become a matter of concern amongst the ecologists of India. They have formulated to safeguard and take necessary steps to reduce the number of endangered species in India.

Schematic diagram of Biodiversity

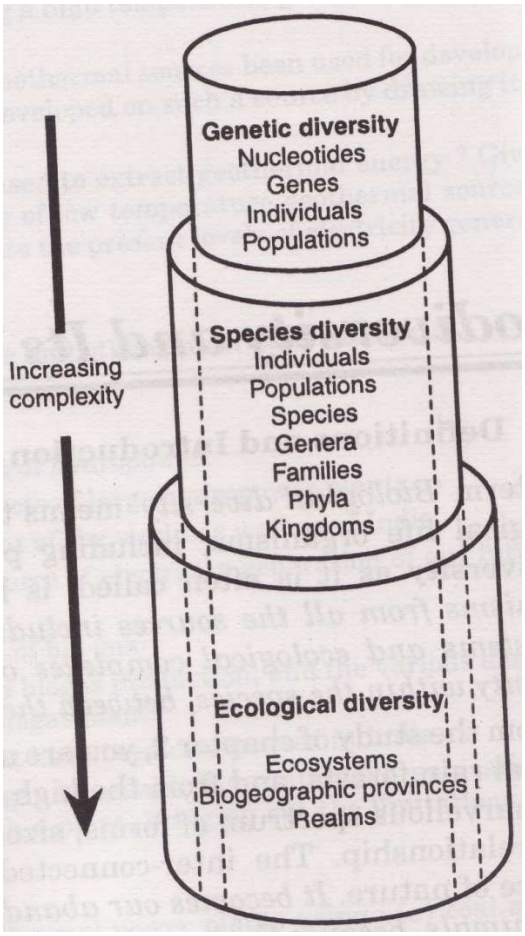

Fig.1 Hierarchy of Biodiversity (Garg, 2010)

CONCLUSION

The influence and impact of biodiversity on Indian ecosystem has long been discussed in different forums but still debate is continuing. The Framework seeks to harness the positive opportunities provided by biodiversity and natural ecosystems, as a catalyst for sustainable development. It recognizes the real value of biodiversity and ecosystems to society—in relation to secure livelihoods, food, water and health, enhanced resilience, conservation of threatened species and their habitats, and increased carbon storage and sequestration—and calls for innovation, drawing on the potential of nature, to achieve multiple development dividends (UNDP, 2012). There can be little doubt that there are truly colossal challenges associated with providing food, fibre and energy for an expanding world population without further accelerating already rapid rates of biodiversity loss and undermining the ecosystem processes on which we all depend. These challenges are further complicated by rapid changes in climate and its additional direct impacts on agriculture, biodiversity and ecological processes. There are many different viewpoints about the best way to deal with the myriad issues associated with land use intensification and this book canvasses a number of these from different parts of the tropical and temperate world. Chapters focus on whether science can suggest new and improved approaches to reducing the conflict between productive land use and biodiversity conservation (Lindenmayer et.al, 2012). The Indian ecosystem is too sensitive and vibrant with multi ecosystem prevailing from one part to the other. There can be little doubt that there are truly colossal challenges associated with providing food, fibre and energy for an expanding world population without further accelerating already rapid rates of biodiversity loss and undermining the ecosystem processes on which we all depend. These challenges are further complicated by rapid changes in climate and its additional direct impacts on agriculture, biodiversity and ecological processes.There are many different viewpoints about the best way to deal with the myriad issues associated with land use intensification and this book canvasses a number of these from different parts of the tropical and temperate world. Chapters focus on whether science can suggest new and improved approaches to reducing the conflict between productive land use and biodiversity conservation (Lindenmayer et.al, 2012).

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