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## Importance of Ecological Research in Biodiversity Conservation- a short article

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### Review Article

#### ABSTARCT

*Biodiversity and ecosystems need to be protected for their biological, social, cultural and economic values. Various Models and tools are needed to predict the impact of management options, and to monitor the success of actions. This includes verifying the effectiveness of an ecosystem approach over other management methods.*

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### INTRODUCTION

#### A short Review

India is one of 12 mega-diversity country in the world that collectively account for 60-70 percent of the world's biodiversity. There are an estimated 45,000-47,000 species of plants and some 90,000 species of animals in India that constitute respectively 11 percent and 7 percent of those recorded in the world. As well as being a center of high species richness and endemism, India is a center of agro-biodiversity with at least 166 species of crop plants and 320 species of wild relatives of cultivated crops. The country's biodiversity is fundamental to human well-being and sustainable livelihoods. It is estimated that around 27 percent of the country's population is dependent locally on forests for their subsistence and livelihoods, which they earn from fuel wood, fodder, poles, and a range of non-timber forest products. Seventy percent of India's rural population depends on fuel wood to meet domestic energy needs. Half of India's 89 million tribal people who live in forest fringe areas have close cultural and economic links with forests. The country's natural resources have a major influence on development and well-being of its people, with agriculture, livestock, forestry, and fishery sectors. So, the things around us are classified into two major groups: biotic and abiotic. The biotic group includes all types of living organisms, both plants and animals and abiotic group includes the non-living materials (soil, water, air etc) and the forces of nature (light, gravity and molecular energy).

A distinct branch of biology is devoted to study the inter-relationship between biotic and a-biotic components as well as the relationships among the individuals of biotic components. This branch of biology is known as ecology. Thus the ecology literally means the study of living organisms in their natural habitats or homes. Life on earth is so diverse that we really have no idea how the figure may

be as high as 100 million. Biodiversity refers to the incredible variety of life found in our planets. Thus the biodiversity is defined as all hereditarily based variations at all levels of organization, from the genes within a single local population or species, to the species composing all or part of a local community and finally to the communities themselves that compose the living parts of the multifarious ecosystems of the world. Biodiversity is central to our existence. The scope of ecology lies in its wide application in view of human interest as well. It has several practical applications in the field of agriculture, forestry, conservation, horticulture and biological indicators, meteorology, environmental physiology, biotic control, pest control, population genetics etc. Based on these applications, ecological degradation and its corollary-biodiversity loss-poses a serious threat to development. Biodiversity destructive economic activities are inefficient not merely because of the resulting resource misallocation but also because of the excessive scale of activity levels-exploitation, in relation to the limited availability of natural capital when the latter is complementary to human made capital. Efforts for conservation and management of our natural resources must derive from a set of clear objectives, mechanisms for action and commitment from all stakeholders through scientific research. Apart from this, halting the process of degradation and species loss requires specialized solutions and an understanding of ecological processes. Protecting biodiversity does not merely involve setting aside chunk of areas of reserve. Instead, all the ecological processes that have maintained the area's biodiversity such as predation, pollination, parasitism, seed dispersal and herbivory, involving complex interactions between several species of plants and animals need to be ensured. More importantly, laws and policies governing natural resources are still not sufficient enough to tackle the scale of the problem and these insufficiencies have not been addressed with a sense of urgency. There are still major lacunae in information resources pertaining to forests, biodiversity, causative factors for their degradation and major threats.