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## Biodiversity and Indian Economy

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### Abstract

Biodiversity has provided number of benefits to human beings. Large number of population of developing countries like India depends on natural resources for their livelihood. However, population pressure and climate change are giving additional pressure to biodiversity. The local policy makers have concerns about conservation of biodiversity and improving livelihood of local people in the context of sustainable development. In India, environmental accounting in general and biodiversity in particular are at very early stage. This paper has discussed biodiversity and their role in Indian economy. The value of biodiversity must be integrated with national accounting calculation for the sustainability perspective.

**Keywords:** Biodiversity, ecosystem, national accounts, sustainable development

### Introduction

Biodiversity play a significant role in the lives of the people as they depend on them for their livelihood and sustenance. Rich biodiversity has several values (Ashok, 2016) <sup>[1]</sup> and necessary for ecological balance (Verma, 2017) <sup>[12]</sup>. Maintaining the health of these ecological resources is vital to the well being of the poor. Natural resources contribute significantly to the GDP of poor. Natural resources are important, not just for the poor, but for all people. The consequences of ecological destruction can be far reaching affecting lives of many at distant places and over time. Since some of the impacts take place gradually, one tends to neglect them.

Most economic activities have some environmental effect. For example when an industry runs creates air pollution. When a crop is grown on commercial basis, fertilizers and insecticides are used in huge quantity, the soil quality changes. When the level of human activities increases in an area, the environmental impacts are felt. Most problems of environment result from such externality and disregarded by the people who cause them. Particularly when they affect ecological functioning or biodiversity, the awareness of the damage one causes is little because the processes are slow and the impacts are not immediately visible. These impose huge cost on society.

For a country like India, where development is an imperative, such environmental consequences can be substantial and have to be faced all too frequently. If India is to meet its development objectives, it needs to set up power plants, mine coal, which is the major fuel resource, and set up industries. All these affect the environment, ecology and biodiversity. For example, development of hydropower cannot avoid ecological consequences. If a storage reservoir is created it may submerge forest. The flow pattern of the river changes and will affect aquatic flora and fauna. Mining coal may also involve deforestation if the coal seams are below forest, as they mostly are in India. Similarly land and water required for industries and urbanization cause their own problem for the environment.

Biodiversity is the natural capital and ecological infrastructure foundation on which economic growth, social development and human wellbeing is cultivated. According to UNEP (2010), biodiversity is integrated to economic growth and poverty reduction. About 40% of the world's economy is depend on biodiversity and more than 80% of the world's poor directly or indirectly depends on biodiversity for their survival (Hirsch and Secretriat of the Convention on Biological Diversity 2010).

People who depends upon natural resources, face the most serious and immediate risks from biodiversity loss. GDP is an indicator of economic performance of the country.

The economic importance of biodiversity does not figure in the GDP accounting and the real cost of depletion or degradation of natural resources is not recorded in GDP statistics although they are crucial for many people.

### Biodiversity in India

Biodiversity refers to the diversity of all kinds of life on Earth, including plants, animals, microorganisms, their genes, and the ecosystems they create. Biodiversity is important in a number of ways, including promoting the aesthetic value of the natural environment, contributing to our material well-being through utilitarian values, and maintaining the integrity of the environment through; maintaining CO<sub>2</sub>/O<sub>2</sub> balance, regulation of biochemical cycles, absorption and breakdown of pollutants and waste materials through decomposition. They maintain ecological balance which is necessary for human survival (Verma, 2018) [13]. Genetic diversity acts like buffer in biodiversity (Ashok, 2017a) [2]. Despite the benefits of biodiversity, today's threats to species and ecosystems are at an all-time high, and nearly all of them are the result of human mismanagement of biological resources, which is often exacerbated by misguided economic policies, pollution, and faulty institutions, in addition to climate change.

India occupies 2.4% of the world's area and is host to 7% of the global biodiversity, accounting for 8% of the world's mammals, 13% birds, 6% reptiles, 4% amphibians, 12% fish and 6% flowering plants. It is one of the 12 mega-biodiversity hotspots of the world. However, India is losing biodiversity at a rapid rate. Around 39 species of mammals, 72 species of birds and 1336 species of plants are considered vulnerable and endangered, as these species have not been sighted during last 6–10 decades (Balasubramanian, 2015) [4].

India also contains important Asia's rarest animals, such as the Bengal fox, Asiatic cheetah, marbled cat, Asiatic lion, Indian elephant, Asiatic wild ass, Indian rhinoceros, markhor, gaur and the wild Asiatic water buffalo. About one-fifth of all the plants found in India are used for medicinal purpose (Schippmann *et al.*, 2002) [9]. According to Haripriya *et al.* (2006) [6] approximately 880 medicinal plant species are involved in the all India trade, with 48 medicinal plant species exported to foreign countries and about 42 medicinal plants being imported.

### Biodiversity and Economic development in India

Biodiversity offers a means of subsistence for local communities and provide opportunities for the economic security of millions of rural population. Livelihood is not just about income, employment or economic growth and linked to human survival and well-being. India loses number of biodiversity due to industrial and economic development. Biodiversity incorporated the ecotourism and bio-prospecting values of forests into the national accounts. Loss of biodiversity has impacts on human well-being. Bio-prospecting rents are also economic benefits accruing to the owner of a natural area.

A large proportion of the population in India is fully or partially dependent on forests for their livelihood. This dependence is in the form of collection of a variety of non-timber forest product that accounts for about 68% of the export in the forestry sector. Non-timber forest product contributes about 20% to 40% of annual income of forest dwellers particularly tribal and poor people. NTFP sector

alone is able to create about 10 million workdays annually in the country (Balasubramanian, 2015) [4]. Beck and Ghosh (2000) [5] found that household income of the rural poor was augmented by 12–15% from these natural resources.

### Biodiversity and sustainable economic development

Sustainable development is the development that meets the needs of the present generation without compromising the needs of the future generations. The basic premise of sustainable economic development is that many environmental problems occurs due to lack of development (Shafik, 1994) [10]. In this regards, the overall objective of sustainable development is not in conflict with economic development. It is meant to improve the human quality of life and encourage welfare for present and future generations. During sustainable development, environmental ethics should be followed (Ashok, 2017b; Verma, 2019) [3, 14].

### Conclusion

Biodiversity provides many economic benefits and environmental services which are essential for growth of the local people. But in the absence of knowledge of true economic value of these services, natural resources are often overexploited (Rands *et al.*, 2010) [8], resulting the loss of biodiversity at a very alarming rate. While there are various reasons, anthropogenic activities are the principle reason for biodiversity loss. Development, because of its lack of concern for nature and its associated importance, has led to uncertainty of a sustainable future. Clearing land for agriculture, introducing invasive alien species, constructing infrastructure without specific knowledge, and overexploiting resources have all contributed to loss of biodiversity.

### References

1. Ashok KV. Biodiversity: Its Different Levels and Values. *International Journal on ironmental Sciences*. 2016;7(2):143-145.
2. Ashok KV. Genetic Diversity as Buffer in Biodiversity. *Indian Journal of Biology*. 2017a;4(1):61-63. <http://dx.doi.org/10.21088/ijb.2394.1391.4117.9>
3. Ashok KV. Environmental Ethics: Need to Rethink. *International Journal on Environmental Sciences*. 2017b;8(1):7-9.
4. Balasubramanian M. National accounts and value of biodiversity in India. *Int. J Green Economics*. 2015;9(1):35-57.
5. Beck T, Ghosh MG. 'Common property resources and the poor: findings from West Bengal', *Economic & Political Weekly*. 2000;35(3):147–153.
6. Haripriya G, Sanyal S, Sinha R, Sukhdev P. The Value of Biodiversity in India's Forests, Monograph 4: Green Accounting for Indian States and Union Territories Project (GAISP), 2006.
7. Hirsch and Secretariat of the Convention on Biological Diversity, eds. *Global Biodiversity Outlook 3*. Montreal, Quebec, Canada: Secretariat of the Convention on Biological diversity, 2010.
8. Rands MRW, Adams WM, Bennum L, Butchart SHM, Clements A, Coomes D, *et al.*, *Biodiversity Conservation: Challenges Beyond Science*. 2010;329(5997):1298-1303. doi:10.1126/science.1189138.

9. Schippmann U, Leaman DJ, Cunningham AB. Impact of Cultivation and Gathering of Medicinal Plants on Biodiversity: Global Trends and Issues, Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries, Food and Agriculture Organisation, Rome, Italy, 2002.
10. Shafik, Nemat. Economic Development and Environmental Quality: An Econometric Analysis. Oxford Economic Papers, 1994, 757-773.
11. UNEP Linking Biodiversity Conservation and Poverty Alleviation: A State of Knowledge Review, 2010. <http://www.jstor.org/stable/2709362>.
12. Verma AK. Necessity of Ecological Balance for Widespread Biodiversity. Indian Journal of Biology. 2017;4(2):158-160.
13. Verma AK. Ecological Balance: An Indispensable Need for Human Survival. Journal of Experimental Zoology, India. 2018;21(1):407-409.
14. Verma AK. Sustainable Development and Environmental Ethics. International Journal on Environmental Sciences. 2019;10(1):1-5.