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**Full Research Article**

# Conservation of Biodiversity- A Humankind Necessity

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**Abstract**

This short communication provides a basic description of biodiversity, principles for its conservation, and particular drivers for its loss. It alsoprovides an outline of the international efforts that lead the way to biodiversity conservation and ideas to apply for achieving the three main goals of the Convention on Biological Diversity: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources

## 1. Introduction

Biodiversity, or biological diversity, is the term given to the whole variety of life forms that inhabits our planet and the interrelations they form among themselves. It is generally accepted that it has three levels on such immense variety, being these the diversity of genes, species and ecosystems. All together,they provide the basis of the web of life on which humankind, as a whole, depends for survival and relies for its well-being, health, food, fuel and even such non-tangible services as artistic inspiration and cultural identification; and far reaching more tangible ones as maintaining the complex ecological cycles of energy, water, air, plant pollination or pest control.As humans, we are inevitably bond to biodiversity, at its three levels, by the energy cycles that allow us to live. Biodiversity also contributes to security, social relations, resiliency, health and freedom of choices and actions[1].

If we accept the previous statements,the need to protect biodiversity as the main asset for human social and economic development become supposedly logical. Nevertheless, it is evident that the opposite is happening all around the globe, as humankind's interactions with their natural surroundings, and the biodiversity it harbors, continually shows that we caused their degradation, sometimes even reaching irreversible levels of damage[1].

Biodiversity loss drivers are,most of the times, caused by humans and are mainly habitat changes (such as land use changes, physical modification of rivers and watercourses or water withdrawal from rivers/lakes/wetlands, loss of coral reefs and damages to sea floors due to trawling, e.g.), climate change, invasive alien species, natural resources overexploitation and pollution.

Conservation of biodiversity begun to have increased, and global,attention in the past century, as it becomes clear that the trends of biodiversity use are unsustainable. International efforts as important as the creation of the Convention on Biological Diversity (CBD) has provided guidance for the conservation of our natural heritage and resources since its launch at the Earth Summit at Rio de Janeiro in 1992.

The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and fair and equitable sharing of the benefits from the use of genetic resources[2]. Up to 2014, 194 countries have subscribed to the Convention, ratifying these principles which encompass the adoption of national measures to fulfill them.

The first goal, conservation of biological diversity, implies the long term preservation of unique ecosystems, their related services and the habitat of species and their genetic pool in protected areas, in what is called "in situ" conservation.

 

Additional measures to this end, include "ex situ" conservation of species of plants and animals in botanical gardens, arboreta and zoological and seed collections. Both conservation strategies depend on the availability of dedicated physical spaces that, ideally, need to be planned and managed through active participation of governments and local populations.

Such activities require multidisciplinary approaches in order to be sustained in time, and therefore be successful in providing the whole set of goods and services that this protected areas and collections provide. Also require political will and technical and financial support,from the local and national governments in which these preservation spaces are set aside; and from the international community that benefit directly and indirectly from them.

Important tools for developing in situ and ex situ conservation strategies should include capacity building around planning and management of protected areas, law enforcement and awareness raising about the importance of these areas, and the biodiversity they harbor, for local, national and international stakeholders.

Science, in all its variety of disciplines and specialties, can help ensure that decisions are made with the best available information, but ultimately the futureof biodiversity will be determined by society[1]. This is particularly important to keep in mind, as the protected areas that are being established all around the world, show important gaps of representation of globally significant ecosystems, species and genes; since the human activities were producing more rapid changes in the past 60 years than at any time in human history and, as previously stated, habitat loss in one of the main drivers of biodiversity loss as new land is transformed in, what we can call,'productive landscapes' and the world's oceans are being depleted from their resources and anthropogenic climate change is impacting it in ways that still have not fully established by scientific community.

In addition, humankind settlement patterns have been changing rapidly, changing our relationships with the environment. Nearly half of the world's population live now in towns and cities. For these people, nature seems remote from their everyday lives. More and more people associate food with stores, rather than from their natural sources[2].

As threatening as these last statements sounds, they need to be seen as an opportunity to aim to the second conservation goal, the sustainable use of the components of biodiversity, following the recommendation of the Conference of Parties of the Convention on Biological Diversity, an ecosystem approach to conservation needs to be taken[2].

The sustainable use of biodiversity should complement the other two goals of conservation stated at the CBD and, in empirical terms, they also should contribute to reduce the threats to biodiversity and promote long-term support to its conservation through either:

- The development of alternative activities for labor and capital that divert investment away from activities that negatively affect biodiversity; or
- The modification of production systems that use biodiversity, both consumptively and non-consumptively, so the biodiversity resources and its services provided, will be managed in a sustainable manner rather than being depleted to non-renewable levels and exhaustion.

In both cases the fair and equitable sharing of the benefits from the use of genetic and all biodiversity resources, shall be included in the implementation of either one of the described strategies[2].

Although every human productive activity, directly or indirectly, relies on biodiversity goods or services to be feasible, and have an impact on them; in this short communication the focus is on productive activities that develop products or services with a direct link and benefit from natural resources and biodiversity. We are talking about productive sectors on tourism, wild products, agroforestry products and sustainable agriculture, fisheries and livestock production.

In all cases,the promoter of these activities should be aware that a multidisciplinary approach is needed in order to try to secure their sustainability, feasibility and profitability; and that should include complementary measures such as land tenure secureness, appropriate regulations and enforcement and improving awareness, capacity building and social organization strengthening among stakeholders.

Sustainable use of biodiversity resources would need to be oriented towards the business' world, being it local, national or international. In all cases businesses always operate within an unpredictable national, and often global, economy and highly demanding and competitive marketplace.

To provide a fair opportunity for such businesses to thrive is strongly recommended thatthe multidisciplinary approach to conservation related business is followed, and this will need to include, at least, the following assessments[3]:

- Conservation assessment: provide a link between biodiversity conservation and business development. It is based on a threats to biodiversity analysis, to assess the relative degree of threats to biodiversity from economic activities, the role of local communities in these economic activities versus the role of big enterprises and identify the underlying motivation of local communities to carry out economic activities than can reduce or halt the identified damaging economic activities.
- Sustainable livelihoods assessment: determine whether

communities can develop sustainable business and at the same time achieve desirable outcomes for conservation. It shall follow a participatory approach to identify key factors influencing a community's interest, ability and role of business development, assess and plan for social impacts from business development and scope potential products or services that the communities want to develop commercially and how this goal can be achieved in the most socially accepted manner.

• Economic assessment: determine which sectors would be more profitable, scales of the potential business, economic viability and resources needed, both financial, material and of team expertise. Key factors include assess market potential, access to markets, estimate costs, revenues and profits and their distribution among stakeholders, and review and establish management capacity, potential value addition and partnerships.

• Environmental assessment: establish if the life cycle of the potential product or service could have a significant negative environmental impact and propose mitigation and monitoring measures to avoid it or minimize it. Key factors are the identification of carrying capacity of the resource and assess potential impacts resulting from business development and implementation.

## 2. Conclusion

In conclusion, biodiversity conservation will need the participation of the human society as a whole, and require that all disciplines in academic and empirical knowledge contributes to it. It is a complex and challenging effort, but the future and survival of life as we know it depends on it and hence, it is a humankind necessity. As this is a really short communication to cover such a vast and important topic, I would certainly recommend further readings, in order to get a better insight on what this challenging effort would require for any interested professional. A humble suggestion, will be to begin with the book by Navjot Sodhi and Paul Ehrlich, Conservation biology for all.

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