

Pockets of Hope, Linking Nature and Humanity

Writer - Eric Falt (Director of the UNESCO New Delhi Office)

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It is important to increase the number of biosphere reserves in South Asia to ward off a doomsday ecological scenario.

Biodiversity is the living fabric of our planet. It underpins human well-being in the present and in the future, and its rapid decline threatens nature and people alike.

According to the Global Assessment Report on Biodiversity and Ecosystem Services released in 2019 by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) at the UNESCO headquarters in Paris, the main global drivers of biodiversity loss are climate change, invasive species, over-exploitation of natural resources, pollution and urbanisation.

The earth is under strain

Because of our collective excesses, the ecological carrying capacity of planet earth has largely been exceeded. This trend needs to be redressed, with cleaner air, high quality drinking water, and enough food and healthy habitats to ensure that ecosystem services continue to benefit humanity without critically affecting nature's balance. Whether we look at nature from an environmental, from a cultural or even from a religious point of view, it is our responsibility and clearly in our interest to respect the environment.

In fact, the possibilities exist, and all is not lost. In the last 50 years or so, much has been accomplished for the protection of nature, including the establishment of conservation areas, and a number of international conventions have been signed and ratified.

Biosphere reserves are key

One of the best mechanisms that has been created is the World Network of Biosphere Reserves, created in 1971 by UNESCO. Biosphere reserves are places where humans live in harmony with nature, and where there is an effective combination of sustainable development and nature conservation. They represent pockets of hope and proof that we are not inexorably headed towards a doomsday ecological scenario, provided we take appropriate action.

In South Asia, over 30 biosphere reserves have been established. The first one was the Hurulu Biosphere Reserve in Sri Lanka, which was designated in 1977 and comprises 25,500 hectares within the tropical dry evergreen forest.

In India, the first biosphere reserve was designated by UNESCO in 2000 within the blue mountains of the Nilgiris. It stretches across the States of Tamil Nadu, Karnataka and Kerala. The network has gone from strength to strength, and it now counts 12 sites, with Panna, in the State of Madhya Pradesh, as the latest inscription in 2020.

We need many more biosphere reserves and pockets of hope, and the region offers countless options.

Diverse systems

South Asia has a very diverse set of ecosystems. To begin with, Bhutan, India and Nepal combined have thousands of glaciers, surrounded by lakes and alpine ecosystems.

The Khangchendzonga Biosphere Reserve, established in 2018, is a good model. It includes some of the highest ecosystems in the world, with elevations up to 8,586 metres. The reserve is home to orchids and rare plant species. At the same time, more than 35,000 people live there. Their main economic activities are crop production, animal husbandry, fishing, dairy products and poultry farming.

Bangladesh, India, the Maldives, and Sri Lanka all have extensive coastlines, with coral reefs and mangrove forests. These areas are exposed to extreme weather events (storms, floods, droughts), and sea-level rise.

The Maldives are recognised as the lowest-lying country in the world, with a mere elevation of 1.5 metres above the high tide mark. Together with UNESCO, the archipelago has embarked on a plan to establish pilot sites for the conservation and restoration of coastal ecosystems, and to enhance the population's knowledge on climate change adaptation. Separately, three biosphere reserves have already been created in the Maldives.

Run on science-based plans

UNESCO Biosphere Reserves have all developed science-based management plans, where local solutions for sustainable human living and nature conservation are being tested and best practices applied. Issues of concern include biodiversity, clean energy, climate, environmental education, and water and waste management, supported by scientific research and monitoring. The aim is to detect changes and find solutions to increase climate resilience.

All biosphere reserves are internationally recognised sites on land, at the coast, or in the oceans. Governments alone decide which areas to nominate. Before approval by UNESCO, the sites are externally examined. If approved, they will be managed based on an agreed plan, reinforced by routine checks to ensure credibility, but all remain under the sovereignty of their national government.

Some of the countries in South Asia do not yet have any or enough biosphere reserves. In most if not all cases, the political will is certainly there but there is a lack of know-how and financial resources. Of course, more financial support from richer nations and from the private sector would be desirable for establishing biosphere reserves in these countries.

The priority countries

Bangladesh, Bhutan, and Nepal are on the priority list of UNESCO, because they do not yet have any biosphere reserves. Their governments are already working on their first nomination files. Our organisation also believes that it would be important to increase the number of biosphere reserves in India, the Maldives and Sri Lanka.

The point is that if these pockets of hope can expand, with at least one biosphere reserve per country, and with more and larger sites covering the terrestrial surface, including coastal areas with their offshore islands, it will give the realisation to millions of people that a better future is truly possible, one where we can truly live in harmony with nature.

On May 22 and on the occasion of the International Day for Biological Diversity, let us do what is right. Now is the time to act for biodiversity.

GS World Team Input

IN THE NEWS

What is Biosphere Reserve?

- Wildlife and natural resources in a biosphere or biosphere reserve are protected, maintained, managed or restored.
- Biosphere reserve is an international designation given by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to the designated parts of natural and cultural landscapes.
- According to UNESCO, “Biosphere reserves are areas of terrestrial and coastal ecosystems, which promote solutions for the conservation of biodiversity with their sustainable use.
- Biosphere reserves are designated by the national government that meet the minimum criteria under the Man and Biosphere Reserves Program of UNESCO.
- UNESCO has started the 'Biosphere Reserve' with the aim of reducing the conflict between development and conservation in natural areas.

Structure

- Biosphere reserve is divided into three parts- Core zone, buffer zone, transition zone.
- Core Area:- This is the most protected area of the Biosphere Reserve. It may contain endemic plants and animals. It is very sensitive, human activities are not allowed here.
 - Buffer zone: The buffer zone is the area between the core zone and the transition zone. This area is used for such works which are completely controlled and non-destructive. Scientific research is allowed here.
 - Transition Zone:- This is the outermost part of the biosphere reserve. It is an area of cooperation that includes human settlements, croplands, managed forests, recreational areas and areas with other economic uses.

Criteria for Biosphere Reserve

- There should be a protected and minimum disturbed area from the point of view of nature conservation.
- The entire area should be a biogeographical unit and large enough to handle the population of organisms representing all trophic levels of the ecosystem.
- Areas that have the potential to preserve traditional tribal or village-level ways of living so that the environment can be used harmoniously.

Expected Question (Prelims Exams)

Q. Consider the following statements:-

1. In South Asia, more than 30 biosphere reserves have been established.
2. The first biosphere reserve in South Asia is Sri Lanka's Hurulu Biosphere Reserve.
3. The Nilgiris is India's first biosphere reserve.

Which of the above statements is/are correct?

- (a) 1 and 3
- (b) 1 and 2
- (c) 2 and 3
- (d) All of the above

Expected Question (Mains Exams)

Q. What do you understand by Biosphere Reserve? Why is this biosphere important to organisms? Suggest measures to control its degradation due to man-made hazard.

(250 Words)

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Note: - The question of the main examination given for practice is designed keeping in mind the upcoming UPSC main examination. Therefore, to get an answer to this question, you can take the help of this source as well as other sources related to this topic.