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Biodiversity crisis and conservation a geographical study

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Abstract
Biological Diversity or Biodiversity: Different types of characteristics found in plants and animals are called biodiversity. Biodiversity is made up of all the living things on our planet. It encompasses all forms of life that have been shaped by billions of years of evolution. This includes everything from the smallest bacteria to the largest plants and animals, even our own species. Biodiversity is often used interchangeably with terms such as species diversity and species richness. Biologists often define biodiversity as the totality of chromosomes, species, and ecosystems in an area.

Keywords:- Biodiversity, What is the benefit of biodiversity for humans, Biodiversity status of India in comparison to the world, Major challenges and solutions related to biodiversity conservation.

I. Introduction :-

Biodiversity or Biodiversity is the variety and variability of life on Earth. Biodiversity is a measure of variation at the genetic (genetic variability), species (species diversity), and ecosystem (ectopic diversity) levels. Biodiversity is extremely rich in wildlife and agricultural crop species, diverse in form and function but finely integrated into a system through many networks of symbionts.

Biodiversity is not evenly distributed on Earth; It is generally higher in tropical regions as a result of the warmer climate and higher primary production in the region near the equator. Tropical forest ecosystems cover less than 10% of the Earth's surface and contain about 90% of the world's species. Marine biodiversity is generally greater along the coasts in the western Pacific, where sea surface temperatures are highest, and in the mid-latitude band of all oceans. There is a latitudinal gradient in species diversity. Biodiversity is generally grouped in hotspots, and has been increasing over time, but will likely slow in the future as a primary result of deforestation. It includes the evolutionary, ecological and cultural processes that sustain life.

The post-anthropogenic period, accompanied by a sustained loss of biodiversity and genetic diversity, has been named the Holocene extinction, and is often referred to as the sixth mass extinction. Damage is mainly caused by human impacts, particularly habitat destruction. In contrast, biodiversity has many positive effects on human health, although some negative effects have been studied.

Types of biodiversity:-

There are three types of biodiversity-

genetic diversity

It is based on chromosomes which show the variation between the genetic makeup of the organisms. Organisms of a particular species differ from each other in their genetic makeup. This is the reason why every living being looks different from each other. Similarly, the same species of rice, wheat, maize, barley, etc., have different cultivars.

species diversity

It refers to the diversity in the variety of species found in a particular area. This includes all species from plants to various microorganisms such as bacteria.

ecological diversity

The diversity found in a particular ecosystem is called ecological diversity. It is a collection of everything from living to non-living.

Why is it important to maintain biodiversity?

Importance of Biodiversity Maintaining it is very important for sustaining life on earth. Without a wide range of animals, plants and microorganisms, we can't even hope for healthy ecosystems. All of them play important roles in the ecosystem.

What are the benefits of biodiversity for humans?

There are many things for which we depend on biodiversity and it is important for us to preserve it. Take agriculture, for example, which is incredibly dependent on invertebrates, they help maintain soil health, while many fruits, nuts and vegetables are pollinated by insects.

Pollinators such as birds, bees and other insects play an important role in one-third of the world's crop production. Micro-organisms are important for the release of nutrients in the soil. In the oceans, fish and other forms of marine life provide the main source of protein for nearly a billion people.

What is the biodiversity status of India in comparison to the world?

According to the National Biodiversity Authority, India is one of the 17 most biodiverse countries in the world. 7-8 percent of the world's species live in India. So far, over 46,000 plant and 81,000 animal species have been recorded in the country by the Botanical Survey of India and the Zoological Survey of India. India is an acknowledged center of crop diversity and has millions of microbial diversity, insects and other species, apart from many wild and domestic animals, fish species. India's ecosystem diversity is also unique as compared to other countries of the world.

Biodiversity, which includes the total amount and diversity of life on our planet, is important for the future of the Earth. The United Nations Biodiversity Conference held in Montreal, Canada (2022) emphasized the importance of this biological wealth.

In the same conference, representatives of 188 countries concluded an agreement to 'Halt and Reverse' the loss of biodiversity by conserving 30% of the world's land and 30% of the world's oceans by the year 2030, which is called ' Known as the '30×30 pledge'.

India currently holds 17% of the world's human population and 17% of the global area in Biodiversity Hotspots, giving it the prime position to guide the Earth in becoming a Biodiversity Champion. To achieve the target of 30%, India needs Biodiversity Friendly Management.

Major Challenges Related to Biodiversity Conservation

The United Nations Convention on Biological Diversity (CBD) collects complete data on biological diversity. India also continuously updates the list of biological diversity present in the country. According to the last report, this is the condition of the country.

There are 45 thousand species of trees and plants.

- 91 thousand species of creatures
- 8.58 percent species of mammals
- 13.66 percent species of birds also
- 7.91 percent amphibians and 4.66 percent fishes
- 11.80 percent figure in case of trees and plants

Hopia Shinkeng - This tree found in the Eastern Himalayas was also found in large numbers. No one has seen it in the last 100 years.

Situation today- China claims that it is present in South Eastern Tibet. However, scientists doubt the claim as it is unlikely to thrive at an altitude of only 300 to 600 metres.

Ilex Gardneriana - This tree of evergreen species is also extinct in India according to the IUCN list.

Today's situation- The reason behind its extinction is believed to be the destruction of forests.

Madhuca insignis - This plant found in Karnataka has also not been seen for several decades.

Today's status - In the list released in 1998 by IUCN, it has been placed in the category of extinct.

Sterculia khasiana – This plant found in the Khasi tribal hill areas of Meghalaya has been eradicated from India.

Status today- IUCN has also placed it in the category of endangered plants. Efforts are being made to return it to the forest again through its co-species.

Wendlandia angustifolia – This tree, a regional species of Tamil Nadu, was declared extinct.

Status today: In 1998, its reintroduction was confirmed in the Kalakkad Tiger Reserve. However, it is still shown as extinct in the IUCN list.

Cyanometra beddomei - This tree found on the Western Ghats of the country is considered extinct since 1870. It used to happen in large numbers in Kerala once upon a time.

Situation today- About 20 years back it was seen again in Kerala. Its presence recorded in Wayanad and Thiruvananthapuram has not been updated in the IUCN list at present.

endangered species

Vulture, Gir Lion, Gray Heron, Mountain Quail, Green Sea Tortoise, Red Panda, Indian Kurang, Sarang, White Stork and Krishna Stork.

habitat loss and fragmentation

Human activities such as deforestation, agriculture, urbanization and infrastructure development are leading to the loss and fragmentation of natural habitats, making it difficult for many species to survive and reproduce.

Climate change

Rising temperatures, changing rainfall patterns and extreme weather events are impacting ecosystems and changing the distribution and behavior of many species.

invasive species
Non-native species introduced by humans may compete with and displace native or native species. They can disrupt ecosystem functioning and spread diseases.
overexploitation
Continued exploitation of natural resources in the form of overfishing, hunting and extraction of timber and other forest products can lead to the decline or extinction of species.
pollution
Contamination of air, water and soil by chemicals and waste products can harm wildlife and their habitats.
For example, pollutants such as sulfur can cause excessive acid levels in lakes and rivers and damage trees and forest soils; Atmospheric nitrogen can reduce the biodiversity of plant communities and harm fish and other aquatic life; Ozone damages the leaves of trees and negatively affects the landscape in protected natural areas.
lack of awareness and understanding
Many people are unaware of the importance of biodiversity and its role in supporting human well-being, which leads to insufficient public support and funding for conservation efforts.
poverty and inequality
Poverty can lead people to depend on natural resources for their livelihood, which can lead to overexploitation and habitat destruction. Lack of access to education and economic opportunities can also contribute to biodiversity loss.

Related Initiatives :-
Green development priority in Budget 2023
The Union Budget 2023 mentions 'Green Growth' as one of the seven priorities or 'Saptarishis'.
These green development efforts will help reduce the carbon intensity of the economy and provide large scale green employment opportunities.
National Mission for a Green India:
Its objective is to increase forest cover on degraded land and protect existing forest land.

Green Credit Program
It aims to "encourage environmentally sustainable and responsible actions by companies, individuals and local bodies".
'Mishti' initiative
The Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) is particularly important because of the extraordinary importance of mangroves and coastal ecosystems in mitigating climate change.

Amrit Dharohar Yojana
The Amrit Dharohar scheme is expected to "encourage optimal use of wetlands and enhance biodiversity, carbon stocks, eco-tourism opportunities and income generation for local communities".
Science-Based Monitoring Program
A science-based and inclusive monitoring program is critical not only for the success of biodiversity conservation measures, but also for the documentation and distillation of lessons learned for replication at national and global levels.
Some examples of science-based monitoring programs for biodiversity conservation include: Global Biodiversity Information Facility (GBIF), Living Planet Index (LPI), National Biodiversity Network (NBN), etc.
Effectively using modern concepts of ecosystem sustainability
New missions and programs should effectively use modern concepts of ecosystem sustainability and valuation that address the ecological, cultural and sociological aspects of biological wealth.
A multi-sustainable bioeconomy can be achieved by defining clear boundaries for the system, prioritizing profits for resource providers, and creating value through service-based funding rather than focusing only on the flow of goods.
water conservation
The future of our wetland ecosystems will depend on how we reduce water use in key sectors such as agriculture (by moving to less water-intensive crops such as millets) as well as reducing water use in urban areas by combining gray and blue-green infrastructure. How are they able to maintain the ecological flow through encouraging investment in recycling).

Focusing on ecological restoration
As far as the Green India mission is concerned, the implementation should focus on ecological restoration rather than tree plantation and select such places where it can contribute to ecological connectivity in landscapes fragmented by linear infrastructure.

In addition, species and density selection should be informed by available knowledge and evidence on resilience under adaptation and adaptation to emerging climate change and hydrological services.

Selecting sites carefully for mangrove initiatives

Site selection for mangrove initiatives should also be carefully considered, with emphasis on diversity of mangrove species while maintaining the integrity of coastal mud-flats and salt pans. Should be kept, because they are also important for biodiversity.

II. Conclusion:-

Each of these efforts regarding biodiversity conservation should involve the local and nomadic communities of the area where these initiatives are to be implemented. Traditional knowledge and practices of these communities should be integrated into implementation plans. Each of these programs has the potential to significantly improve the status of biodiversity if their implementation is based on the latest scientific and ecological knowledge.

Each program should include significant educational and research funding to critically appraise India's biological wealth and bring it to the attention of the general public. There is already a consensus among the Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC) and the government is expected to immediately launch a National Mission on Biodiversity and Human Well-being. Start the National Mission on Biodiversity and Human Wellbeing. The Mission aims to harness the power of interdisciplinary knowledge to green India and its economy, restore and enrich natural capital for the well-being of people, and establish India as a global leader in applied biodiversity science. Is.

Reference

[1]. Whittaker, RH, The measurement of evolution and species diversity, Physiognomy, 21, 213-251 (1972)
[2]. White, Selborne's Natural History, letter xx 8 October 1768.
[3]. Myers N (1988), "Threatened biotas: 'hot spots' in tropical forests", The Environmentalist, 8, 187-208.
[4]. Myers N (1990), "The Biodiversity Challenge: Extended Hot Spot Analysis", The Environmentalist, 10, 243-256.
[5]. J. Alroy, Cro et al. 2001. The effect of standardized sampling on estimates of Phanerozoic marine diversification. Proceedings of the National Academy of Sciences, United States of America 98: 6261–6266.
[6]. "Mapping the Web of Life". Archived from the original on 25 July 2010. Access date 27 February 2009.
[7]. GM Wahl, BR de St. Vincent and ML Derose, Effect of chromosome l position on the amplification of transfected genes in animal cells, Nature 307:516-520.