

Nature has the Answers

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It is our rich, albeit declining, biodiversity that provides us with potential solutions to our sustainability challenges.

International Day of Biodiversity was celebrated on May 22. It gave us an opportunity to appreciate the wonder of biodiversity and renew our commitment to nurture and protect all the many forms of life with which we share our planet. We are a nation so defined by the richness of life around us that the words 'diversity' and 'India' have become synonymous. Our ethnic, cultural, and linguistic diversity has been greatly influenced by the unique features of our land, climate and geography, as well as the forces of migration and evolution. These forces have enriched our land with a multitude of species of plants, animals, and other organisms.

We, the human species, are an integral and influential component of biodiversity. Our own bodies host living microbiomes of tiny organisms without which we cannot survive. Our cultures shape the biodiversity around us, and biodiversity shapes our cultures and our future here on Earth.

Apart from the pandemic, the recent heat waves in much of northern India and floods in Meghalaya are stark reminders of worsening climate change and an uncertain future. The uncertainty is further fueled by the continuing degradation of lands and biodiversity, growing malnutrition and hunger, and inequities and environmental injustice.

Nature-based solutions

Yet, it is our rich, albeit declining, biodiversity that provides us with potential solutions to our most pressing sustainability challenges. Nature-based solutions — the use of biodiversity and what we learn from the natural world to face our challenges — are emerging as the best path to take us forward.

Climate change is arguably the most severe crisis we face today. Global deforestation is one of the main contributors to climate change. Thus, the restoration of deforested and other degraded lands can lead to mitigation of climate change. Restoring biodiversity on large tracts of land is one of the major commitments that India has made under the Paris Accords. This direct connection between biodiversity and climate change was strongly affirmed by most nations in the Conference of the Parties in Glasgow concluded six months ago. Similarly, rejuvenation of our soils and agriculture, elimination of hunger, and improvement of nutrition depends upon our prudent use of biodiversity in the prevailing agricultural systems.

Fostering the return of biodiversity to degraded lands and enhancing blue carbon in oceans have immense environmental and considerable economic benefits. Restoration has the potential of creating millions of jobs, diversifying farming systems and agriculture-based livelihoods.

Enterprises based on India's biodiversity have huge untapped potential. For example, the sector based on the use of molecules of biological origin in biotechnology and healthcare was worth \$70 billion in 2020. And we have barely begun to tap the potential of our rich medical heritage that includes thousands of medicinal plant species.

Nature contributes not only to our economic and physical well-being, but also to our minds and spiritual enrichment. Our country is full of sacred landscapes, riverscapes, and seascapes. We can take refuge in nature for mental solace.

Strengthening biodiversity science

The biodiversity that is all around us and inside us, that sustains us and protects us, is under assault. We have seen our natural landscapes and waterscapes decline and degrade at an unprecedented rate. Last year, in these pages, I briefly described an effort on the part of the government to launch a National Mission on Biodiversity and Human Well-Being, conceived and planned by the Biodiversity Collaborative pulling together public and private institutions. The Mission will embed biodiversity as a key consideration in all development programmes, particularly in the sectors of agriculture, health, bioeconomy, ecosystem services, and climate change mitigation. It will also seek to develop a system for assessing and monitoring, restoring, and enhancing biodiversity to enable the realisation of the UN's Sustainable Development Goals. Public engagement is another key element of the Mission.

The pandemic has placed this Mission among the most significant national initiatives. We must urgently address the issues laid bare by COVID 19: the emergence of infectious diseases; inadequate food and nutritional security; rural unemployment; and climate change which all place additional stress on nature and public health, and which are what the Mission seeks to address.

Hundreds of professionals have participated in defining the road map for the Mission. International Biodiversity Day should serve as a reminder to our government and people to push forward the Mission and and reimagine our relationship with nature.

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IN THE NEWS

International Biodiversity Day

- Every year 22 May is observed as International Biodiversity Day across the world to promote the conservation and sustainable use of biodiversity.
- It is also called 'World Biodiversity Conservation Day'. It was started by the United Nations. Biodiversity is very important in our life.

Background

- Keeping in view the importance of biodiversity in maintaining natural and environmental balance, it was decided to celebrate Biodiversity Day as International Day.
- This decision was taken at the Biodiversity Conference held on 29 December 1992 in Nairobi, but due to practical difficulties expressed by many countries, it was decided to celebrate this day on 22 May instead of 29 May.

Objective

- To increase understanding and awareness of biodiversity issues.
- To make people aware about the importance of biodiversity on the one hand and its unprecedented loss on the other.

Theme of this year

- The theme of International Day for Biodiversity for 2022 is "Building a Shared Future for All Life".
- The theme was selected at the upcoming United Nations Convention on Biological Diversity (COP15) to continue and support the development of a post-2020 global biodiversity framework.

Importance

- This day is extremely important in today's world considering the kind of lifestyle we lead.
- It is this biodiversity that not only provides a home for many of the world's species, but also serves as a source of food, water and other resources that we rely on.
- Understanding the value of biodiversity and acknowledging the problems is the need of the hour.

India's position

- India's land area accounts for only 2.5% of the world, but 14% of the world's flora and fauna are found here.
- In India, there are 2546 types of salt and fresh water fish, 198 types of amphibian frogs, turtle-like creatures that can live in both water and land.
- Here 1331 types of birds, 408 types of reptiles, 430 mammal types are found. Along with this, 50000 types of flora and 15000 types of flowers are also found on our land. These are species, then the number of their subspecies reaches into the millions.

What is Biodiversity?

- Biodiversity - or Biodiversity: Different types of characteristics found in plants, animals are called biodiversity. Biodiversity is made up of all living things on our planet. It encompasses all forms of life that have been shaped by billions of years of evolution. This includes from the smallest bacteria to the largest plants and animals, even our own species.

How many types of biodiversity are there?

- Biodiversity is of three types- Genetic diversity: It is based on chromosomes which shows the variation among the genetic composition of organisms. Organisms of a particular species differ from each other in their genetic structure. This is the reason that every living being looks different from each other. Similarly, there are different varieties in the same species of rice, wheat, maize, barley, etc.
- Species Diversity: It refers to the variety of species found in a particular area. It 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 the living to the non-living.



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Expected Question (Prelims Exams)

- Q. Consider the following statements in the context of International Day of Biodiversity-**
1. The theme of International Day for Biodiversity for 2022 is "Building a Shared Future for All Life".
 2. Prior to the adoption of the UNGA resolution, 29 December was designated as the International Day of Biodiversity.

Which of the above statements is/are correct?

- (a) Only 1
- (b) Only 2
- (c) 1 and 2 both
- (d) Neither 1, nor 2

Expected Question (Mains Exams)

- Q. What do you understand by biodiversity? How is it important to our planet? Explain the effects of biodiversity on the economic activities of a country.**

(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.