# **International Biosphere Reserve Day 2023**

For Prelims: <u>Biosphere Reserve</u>, <u>World Biosphere Reserve Day</u>, Man and the Biosphere (MAB) Programme

For Mains: Biosphere Reserves Main Zones, Functions

#### Source: TH

# Why in News?

The second anniversary of International Biosphere Reserve Day, celebrated on November 3, annually highlights the critical importance of biosphere reserves(BR) in safeguarding our environment and promoting sustainability.

- In this context, the <u>United Nations Educational, Scientific and Cultural Organization</u> (<u>UNESCO</u>) partnered with the <u>Ministry of Environment</u>, Forests and Climate Change and the <u>National Centre for Sustainable Coastal Management</u>, concluded the 10th South and Central Asian Biosphere Reserve Network Meeting (SACAM) in Chennai, India.
  - The SACAM event, themed "**Ridge to Reef**," facilitated collaboration on sustainable environmental practices in South and Central Asia.

# What is World Biosphere Reserve Day?

- This day celebrates the role of biosphere reserves in **conserving biodiversity** and promoting sustainable development.
- Established by UNESCO in 2022, to be observed annually on November 3.
- Aims to raise awareness, share best practices, and showcase achievements of the World Network of Biosphere Reserves (WNBR).

# What is a Biosphere Reserve?

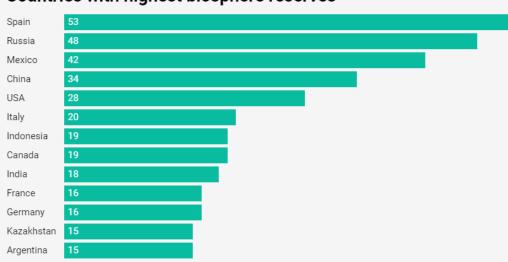
- About:
  - Biosphere reserves are 'learning places for sustainable development'.
  - They are sites for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity.
  - They are places that provide local solutions to global challenges. Biosphere reserves include terrestrial, marine and coastal ecosystems.
    - Each site promotes solutions reconciling the conservation of biodiversity with its sustainable use.
- Features:
  - Biosphere reserves consist of three main zones:
    - The **core area** is the strictly protected zone, where natural processes and biodiversity are preserved.

- The **buffer zone** surrounds the core area, where human activities are ccompatible with conservation and research objectives.
- The **transition area** is the outermost zone, where sustainable development and human well-being are promoted.





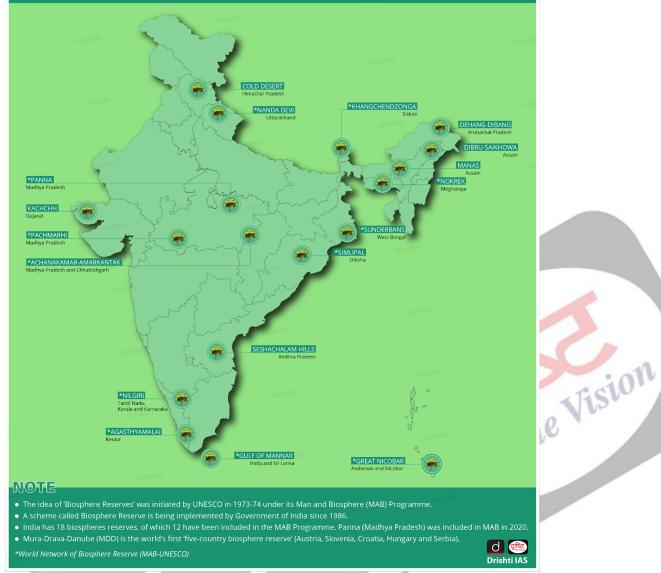
- Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located.
- Biosphere reserves are designated by UNESCO under the Man and the Biosphere (MAB) Programme which was launched in 1971.
  - The MAB Programme aims to improve the relationship between people and their environment and to foster the integration of natural and social sciences.
  - The MAB Programme also supports the implementation of the <u>2030 Agenda for</u> <u>Sustainable Development</u> and the <u>post-2020 global biodiversity framework</u>.
- Biosphere reserves are part of the World Network of Biosphere Reserves (WNBR), which currently comprises 748 sites in 134 countries, including 22 transboundary sites.
  - The WNBR facilitates the exchange of information, knowledge, and best practices among biosphere reserves and their stakeholders.
  - The WNBR also fosters cooperation and innovation for addressing global challenges such as climate change, biodiversity loss, poverty, and pandemics.



# Countries with highest biosphere reserves

- Biosphere reserves are nominated by **national governments** and remain under the sovereign jurisdiction of the states where they are located.
- Biosphere reserves are also supported by other United Nations agencies, for example, the <u>United</u> <u>Nations Development Programme</u>, the <u>United Nations Environment Programme</u>, as well as the <u>International Union for Conservation of Nature</u>.
- Biosphere Reserves in India:

# **Biosphere Reserves in India**





- Biosphere reserves play a crucial role as carbon sinks, absorbing <u>carbon dioxide</u> from the atmosphere and contributing to climate change mitigation.
  - Acting as **pockets of hope in the face of the climate crisis,** the UNESCO biosphere reserves are hidden oases, protecting biodiversity, reducing pollution, and enhancing climate resilience.
- Biosphere reserves act as sanctuaries for a wide variety of ecosystems, including tropical rainforests, alpine deserts, and coastal areas, providing habitats for countless unique and endangered plant and animal species.
  - Biosphere reserves are home to more than **250 million people,** who depend on the ecosystem services and natural resources for their livelihoods.
- They promote sustainable economic development by offering opportunities for eco-tourism and other environmentally friendly activities, benefiting local communities.
- Biosphere reserves also showcase how to involve local communities, indigenous peoples, women, youth, and other stakeholders in decision-making and management processes.

# What are the Challenges for Biosphere Reserves?

Rapid <u>deforestation</u> threatens the integrity of ecosystems within biosphere reserves.

- Overharvesting of natural resources, such as timber and wildlife, can deplete reserves' ecological resources.
- Habitat loss due to human activities and urban expansion endangers various plant and animal species.
- The introduction of <u>invasive species</u> **disrupts the balance of native ecosystems,** impacting biodiversity.
  - Controlling and managing invasive species is an ongoing challenge.
- Climate change poses a significant threat, affecting the stability and resilience of ecosystems within biosphere reserves.
  - Altered weather patterns, rising temperatures, and extreme events can lead to ecosystem disturbances.
- Changes in land use, such as agriculture, mining, and infrastructure development, impact the natural landscape of reserves.
- Pollution from agricultural runoff, industrial activities, and waste disposal can harm the environment within biosphere reserves.
- Maintaining water quality and mitigating pollution is crucial for ecosystem health.
- Many biosphere reserves lack sufficient resources and funding for conservation and management efforts.

# Way Forward

- Strengthening Local Initiatives:
  - Encouraging and supporting local communities to take an active role in managing and protecting these vital ecosystems is a critical way forward.
  - The successes of local community-driven conservation efforts, such as those in the <u>Sundarban Biosphere Reserve</u> and the <u>Gulf of Mannar</u> Biosphere Reserve, should be highlighted.
    - In the Sundarban Biosphere Reserve in India, local communities are working together to manage mangrove forests and protect the biodiversity of the region.
    - In the **Gulf of Mannar Biosphere Reserve** in India, local communities, including women, are contributing towards conservation efforts by forming self-help groups, while the youth are getting engaged in eco-tourism.
      - The concept of '**plastic checkpoints**' introduced in the Gulf of Mannar Biosphere Reserve can serve as a model for addressing plastic waste in other biosphere reserves.
- Empowering Sustainable Practices:
  - Promote sustainable practices within biosphere reserves, emphasizing eco-friendly tourism and community involvement.
  - Encourage sustainable agriculture, responsible resource management, and waste reduction measures to minimize the ecological footprint.
- Climate Resilience and Adaptation:
  - Establish **climate-resilient strategies within biosphere reserves,** including measures to combat the impacts of climate change.
  - Develop adaptation plans to safeguard ecosystems and reduce vulnerabilities to changing weather patterns.
- Resource Allocation and Funding:
  - Advocate for increased **financial and technical support** for biosphere reserves, enabling them to fulfill their conservation and management goals.
    - Seek collaboration with international organizations, governmental bodies, and nonprofit entities to secure resources and expertise.

# **UPSC Civil Services Examination, Previous Year Question**

# <u>Prelims</u>

## Q.1 Consider the following pairs: (2013)

1. Nokrek Biosphere Reserve : Garo Hills

- 2. Logtak (Loktak) Lake : Barail Range
- 3. Namdapha National Park : Dafla Hills

## Which of the above pairs is/are correctly matched?

(a) 1 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) None

Ans: (a)

# Q.2 The most important strategy for the conservation of biodiversity together with traditional human life is the establishment of (2014)

(a) biosphere reserves
(b) botanical gardens
(c) national parks
(d) wildlife sanctuaries

Ans: (a)

Q.3 Out of all the Biosphere Reserves in India, four have been recognized on the World Network by UNESCO. Which one of the following is not one of them? (2008)

(a) Gulf of Mannar

- (b) Kanchenjunga
- (c) Nanda Devi
- (d) Sunderbans

Ans: (b)

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