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1. India's Biodiversity Conservation – Environment

Over the past decade, India has adopted an integrated approach to biodiversity conservation combining scientific management, habitat restoration, species recovery programmes, and community participation. India recently submitted its Seventh National Report (NR-7) to the Convention on Biological Diversity (CBD), reaffirming commitment to the Convention's objectives. India's updated National Biodiversity Strategy and Action Plan (NBSAP 2024–2030) aligns with the Kunming–Montreal Global Biodiversity Framework (KMGBF) – an international agreement adopted by 196 nations in 2022 to halt and reverse biodiversity loss by 2030, including the landmark 30×30 target to conserve at least 30% of the world's land and oceans by 2030.

1. What is Biodiversity?

Definition

1. Variety of life on Earth including plants, animals, microorganisms, and the ecosystems they form
2. Underpins ecological balance
3. Supports key ecosystem services – Pollination, soil formation, nutrient cycling, water purification, climate regulation

Three Levels

1. **Genetic diversity** – Variation within species
2. **Species diversity** – Variety of species in an area
3. **Ecosystem diversity** – Variety of habitats, ecological communities, ecological processes

2. India's Biodiversity Framework

Biological Diversity Act, 2002 (Amended 2023)

1. Statutory basis for biodiversity governance through institutions at national, state, local levels
2. Supports documentation, protection of biological resources and associated traditional knowledge
3. **2023 Amendment** – Made implementation more facilitative, aligned with current needs
4. Three-tier structure – National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs), Biodiversity Management Committees (BMCs)

Section 39 of Biological Diversity Act, 2002

1. Empowers Central Government to designate institutions as repositories for biological resources
2. Any person discovering a new taxon required to notify designated repository
3. Must deposit corresponding voucher specimens
4. Ensures systematic documentation of India's biological wealth

Scientific and Technical Support

1. **Zoological Survey of India (ZSI)** – Documents animal diversity; leads National Red List Roadmap
2. **Botanical Survey of India (BSI)** – Documents plant diversity; co-leads National Red List Roadmap
3. **Forest Survey of India (FSI)** – Maps Forest, tree cover in periodic State of Forest Reports
4. **National Tiger Conservation Authority (NTCA)** – Supports tiger conservation, habitat management

National Biodiversity Authority Fund (NBAF)

1. Statutory fund supporting biodiversity governance
2. Provides mechanism for benefit sharing
3. Conservation-related use funding

4. Channels resources through statutory mechanism

People's Biodiversity Register (PBR)

1. Local biodiversity database prepared with community participation
2. **Prepared by** – Biodiversity Management Committees (BMCs) in consultation with local people
3. Important tool for – Documentation, conservation, benefit sharing
4. Captures traditional knowledge of local communities about biodiversity

National Biodiversity Strategy and Action Plan (NBSAP 2024–2030)

1. Provides long-term policy direction for conserving biodiversity, using it sustainably
2. Updated plan for 2024–2030 aligned with Kunming–Montreal Global Biodiversity Framework (KMGBF)
3. Strong international relevance through global framework alignment

National Red List Roadmap (2025–2030)

1. Led by ZSI and BSI with support from IUCN–India, Centre for Species Survival India
2. Establishes nationally coordinated, science-based threatened-species assessment system
3. India-specific threatened species documentation complementing global IUCN Red List

Biodiversity Finance India

1. Launched 2015 as finance planning initiative
2. Identifies biodiversity funding needs
3. Mobilizes resources for conservation
4. **Distinct from NBAF** – Focuses on identifying, mobilizing finance while NBAF channels resources through statutory mechanism

3. International Frameworks for Biodiversity Conservation

Convention on Biological Diversity (CBD), 1992

1. Adopted at Earth Summit, Rio de Janeiro (1992)
2. Legally binding international treaty with near-universal membership
3. India is party to CBD
4. Three objectives – Conservation, sustainable use, fair and equitable benefit sharing
5. India recently submitted Seventh National Report (NR-7) to CBD

Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services (IPBES)

1. Established 2012; often called "IPCC for Biodiversity"
2. Provides scientific assessments on biodiversity, ecosystem services
3. Supports evidence-based policymaking

Ramsar Convention (1971)

1. International treaty for conservation, wise use of wetlands
2. Promotes designation, management of wetlands of international importance
3. India has 99 Ramsar sites (3rd largest globally by number)

Convention on Conservation of Migratory Species (Bonn Convention, 1979)

1. Conserves migratory terrestrial, marine, avian species
2. Encourages international cooperation along migratory routes

IUCN Initiatives

1. Maintains globally recognized IUCN Red List of Threatened Species
2. Develops protected area categories, conservation guidelines
3. Red List categories – Extinct, Extinct in Wild, Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern

Nagoya Protocol

1. Legally binding supplementary agreement adopted during COP-10 of CBD (Nagoya, Japan)
2. Ensures fair, equitable sharing of benefits from utilization of genetic resources
3. Also covers associated traditional knowledge held by indigenous, local communities
4. Access and Benefit Sharing (ABS) mechanism

Kunming-Montreal Global Biodiversity Framework (KMGBF)

1. Adopted during COP-15 of CBD (Montreal, Canada, 2022)
2. International agreement by 196 nations
3. Goal - Halt, reverse biodiversity loss by 2030; achieve "living in harmony with nature" by 2050
4. **30×30 Target** - Conserving at least 30% of world's land and oceans by 2030
5. **Other targets** - Restore 30% degraded ecosystems; reduce harmful subsidies by \$500 billion; mobilize \$200 billion annually for biodiversity

4. Way Forward

1. Strengthen local governance through empowered BMCs, functional PBRs
2. Accelerate National Red List assessments for data-deficient species
3. Expand protected area network toward KMGBF 30×30 target
4. Mobilize biodiversity finance through NBAF, international mechanisms
5. Integrate biodiversity into sectoral policies (agriculture, infrastructure, urban planning)
6. Enhance community stewardship including tribal communities as frontline conservation partners

5. Conclusion

India's integrated biodiversity conservation framework — anchored in Biological Diversity Act 2002 (2023 amendment), supported by ZSI-BSI-FSI-NTCA, financed through NBAF, documented through PBRs, guided by NBSAP 2024-2030 aligned with KMGBF 30×30 target — demonstrates progressive alignment between domestic policy and global commitments toward halting biodiversity loss and achieving living in harmony with nature by 2050.

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