



Biodiversity Matters Newsletter

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Message from the **Chairperson's Desk**



During the quarter (April–June 2026), India marked another significant milestone in its biodiversity conservation journey. Through the collective efforts of the National Biodiversity Authority, Ministry of Environment, Forest and Climate Change, the State Biodiversity Boards, Biodiversity Management Committees, scientific institutions, and local communities, India continues to demonstrate leadership in implementing the objectives of the Convention on Biological Diversity and the Kunming Montreal Global Biodiversity Framework. The successful submission of India's Seventh National Report, the First National Report on the Nagoya Protocol, the strengthening of Access and Benefit Sharing mechanisms, and the expansion of community-based biodiversity governance reflect the nation's strong commitment towards conservation, sustainable use, and equitable sharing of benefits arising from biological resources.

This edition of Biodiversity Matters captures some of the important achievements, initiatives, and knowledge contributions undertaken during the year. It also highlights the vital role of local communities, researchers, policymakers, and young professionals in advancing biodiversity conservation. As we move forward, it is essential to continue fostering collaboration, innovation, and public participation to address emerging challenges such as climate change, habitat degradation, and invasive alien species. Together, we can ensure that biodiversity remains at the heart of sustainable development and environmental stewardship for future generations.

VIRENDRA R. TIWARI, IFS (RETD.)



Message from
Editor's Desk



The National Biodiversity Authority continues to play a pivotal role in strengthening biodiversity governance and supporting India's commitments under national and international biodiversity frameworks. During the past year, several important milestones were achieved, including the preparation and submission of key national reports, enhancement of digital governance through the ABS End-to-End Portal, implementation of capacity-building programmes, and advancement of policy initiatives relating to biodiversity conservation and sustainable use. These achievements have been possible through the dedicated efforts of our partners, experts, institutions, and community stakeholders across the country.

This newsletter serves as a platform to share knowledge, experiences, and best practices that contribute to informed decision-making and greater public engagement. The articles and reports featured in this issue highlight the diversity of initiatives being undertaken across sectors and landscapes. I hope this publication will inspire wider participation, strengthen partnerships, and promote a deeper understanding of the critical role biodiversity plays in sustaining ecological and human well-being.

Dr. B. Balaji, IFS

INDIA'S NATIONAL REPORT ON BIODIVERSITY-2026 (INRB 2026)

The National Biodiversity Authority (NBA), in collaboration with the Ministry of Environment, Forest and Climate Change (MoEFCC), under the GEF-8 Umbrella Programme, prepared and successfully submitted India's Seventh National Report (NR-7) to the Convention on Biological Diversity (CBD). The report provides a comprehensive assessment of the country's progress in biodiversity conservation and sustainable use, particularly in relation to national commitments aligned with the Kunming-Montreal Global Biodiversity Framework (KMGBF). India is among the few countries that have successfully submitted their national reports to the CBD within the stipulated timeline.

Following the submission of NR-7, the NBA, and the MoEFCC, under the GEF-8 Umbrella Programme, compiled and released India's National Report on Biodiversity-2026 (INRB 2026), a concise and reader-friendly knowledge product based on the key findings of the national report. The publication is intended to make the information contained in NR-7 more accessible to a wider audience, including policymakers, researchers, students, civil society organizations, local communities, and the general public.

INRB 2026 highlights several significant conservation achievements, including the expansion of forest and tree cover to 25.17% of India's geographical area, the increase in Ramsar Sites from 26 in 2014 to 98 in 2026, and the strengthening of the country's protected area network. The report also documents encouraging population trends of flagship species such as tigers, greater one-horned rhinoceroses, wild elephants, and Asiatic lions.

The publication underscores India's strong commitment to community-led and decentralized biodiversity governance through more than 2.76 lakh Biodiversity Management Committees (BMCs) and People's Biodiversity Registers (PBRs). It also highlights the implementation of over 5,600 Access and Benefit Sharing (ABS) agreements, promoting the equitable sharing of benefits derived from biological resources.

A key message emerging from INRB 2026 is the adoption of a "whole-of-government" and "whole-of-society" approach to biodiversity conservation. The report showcases the integration of biodiversity into development planning, the use of advanced technologies for conservation, and the growing role of citizen-led initiatives. Structured into six thematic chapters, the publication serves as an important bridge between national reporting and public engagement, making biodiversity information more accessible and encouraging collective action towards achieving India's biodiversity commitments by 2030.



INDIA'S FIRST NATIONAL REPORT ON THE NAGOYA PROTOCOL

The Convention on Biological Diversity (CBD), adopted at the 1992 Rio Earth Summit, established a global framework for biodiversity conservation, sustainable use, and the fair and equitable sharing of benefits arising from the utilization of genetic resources. Recognizing the sovereign rights of countries over their biological resources, the CBD introduced the principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT), which laid the foundation for Access and Benefit Sharing (ABS). To strengthen the implementation of these provisions, Parties adopted the Nagoya Protocol on Access and Benefit Sharing in 2010 as a supplementary agreement to CBD, creating a transparent and predictable international framework for ABS. India was among the early signatories to the Protocol and ratified it in 2012, reaffirming its commitment to equitable biodiversity governance.



Over the years, India has emerged as a global leader in implementing the Nagoya Protocol through a robust legal, policy, and institutional framework. The country's ABS regime is supported by the Biological Diversity Act, 2002 (as amended in 2023), the Biological Diversity Rules, 2024, and the ABS Regulations, 2025, and is implemented through a three-tier governance structure comprising the National Biodiversity Authority (NBA), State Biodiversity Boards/Union Territory Biodiversity Councils (SBBs/UTBCs), and Biodiversity Management Committees (BMCs). This framework has enabled the country to facilitate access to biological resources and associated knowledge while ensuring that benefits derived from their utilisation are shared fairly and equitably with local communities and holders of traditional knowledge. India's strong commitment to the Nagoya Protocol is reflected in the submission of its First National Report on implementation of the Nagoya Protocol on ABS to the CBD Secretariat through ABS Clearing-House in February 2026 as required under Article 29 of the Protocol. The report documents the country's progress between November 2017 and December 2025 in legislative reforms, institutional strengthening, implementing ABS, compliance measures, capacity building, and stakeholder engagement, while contributing to the achievement of Target 13 of the Kunming–Montreal Global Biodiversity Framework on the fair and equitable sharing of benefits from genetic resources and associated traditional knowledge.

To present these achievements in an accessible and comprehensive manner for the benefit of wider stakeholders, the MoEFCC and NBA developed the publication Implementation of ABS

in India: Insights from the First National Report on the Nagoya Protocol on Access and Benefit Sharing. Drawing directly from the First National Report, the publication serves as a consolidated account of India's ABS journey and highlights the country's significant accomplishments in implementing the Nagoya Protocol. Among the achievements documented are the issuance of 12,830 ABS approvals, publication of 3,556 Internationally Recognized Certificates of Compliance (IRCCs), representing over 60 percent of the global total, the generation of monetary benefits of Rs 314 crore as ABS and non-monetary benefits for biodiversity conservation, local communities, farmers, and traditional knowledge holders. The publication also showcases India's extensive network of more than 276,653 Biodiversity Management Committees, capacity-building initiatives that reached over 256,000 stakeholders, innovative compliance and monitoring mechanisms, and numerous examples of equitable benefit-sharing in practice.

Key Progress Reported in India's NRT on Implementation of Nagoya Protocol



Beyond presenting statistics and achievements, the publication highlights implementation experiences, case studies, lessons learned, and best practices that demonstrate how ABS can support biodiversity conservation, sustainable livelihoods, scientific collaboration, and the protection of traditional knowledge. As a valuable resource for policymakers, researchers, students, biodiversity practitioners, industry, civil society, and local communities, the publication not only documents India's progress but also serves as a practical reference for countries and stakeholders seeking to strengthen the implementation of the Nagoya Protocol. It stands as a testament to India's leadership in Access and Benefit Sharing and its commitment to ensuring that the benefits derived from biodiversity contribute to both conservation and sustainable development.

STRENGTHENING INDIA'S NATIONAL REPOSITORY NETWORK UNDER SECTION 39 OF THE BIOLOGICAL DIVERSITY ACT, 2002

Designated Repositories

The National Biodiversity Authority (NBA), in consultation with the Ministry of Environment, Forest and Climate Change (MoEFCC), facilitated the notification of the Referral Centre Bhavasagara at the Centre for Marine Living Resources and Ecology (CMLRE), Kochi; the Agharkar Research Institute, Pune, for its MACS Collection of Microorganisms and National Fungal Culture Collection; and the Natural History Museum, Mizoram University, Aizawl, as designated repositories under Section 39 of the Biological Diversity Act, 2002. These repositories will provide safe custody for biological materials, including voucher specimens, and strengthen the documentation and preservation of newly discovered species and biological resources used for research and commercial purposes.

Statutory Framework and Designation Process

Section 39 of the Biological Diversity Act, 2002 empowers the Central Government to designate institutions as repositories for various categories of biological resources. These institutions are responsible for maintaining biological materials in safe custody, while persons discovering a new taxon are required to notify the designated repository and deposit the corresponding voucher specimens. To facilitate the designation process, the NBA has issued guidelines specifying the eligibility criteria for institutions seeking repository status. Proposals received are examined by the Authority (Governing Body of the NBA) and recommended to the Ministry for notification.

Strengthening the National Repository Network

To date, 20 institutions have been designated as national repositories under Section 39 of the Act. The inclusion of the Natural History Museum, Mizoram University, Aizawl, further strengthens the national repository network for the conservation and systematic documentation of biological resources. This will ensure the preservation of biological materials under scientifically appropriate conditions, enhance accessibility for research and innovation, and support the effective implementation of Access and Benefit Sharing (ABS) provisions through improved traceability, documentation, and record-keeping.

REGULATORY REFORMS: DRIVING INNOVATION UNDER BIOLOGICAL DIVERSITY (AMENDMENT) ACT, 2023

The National Biodiversity Authority (NBA) has recorded a significant rise in Intellectual Property Rights (IPR) applications involving India's biological resources, reflecting the growing interface between biodiversity, research, innovation and industry. The Biological Diversity (Amendment) Act, 2023 has strengthened and streamlined the

regulatory framework by requiring entities covered under Section 7 to obtain a Certificate of Registration (CoR) from the NBA before seeking IPR, including patents, based on Indian biological resources. This registration-based system has enhanced compliance, transparency and accountability, while ensuring conservation and fair and equitable benefit sharing. The amended provisions have also simplified procedures and facilitated the timely processing of IPR-related applications, contributing to the continued increase in filings.

Certification of Registration issued to obtain IPR

Sl.no	Period	Number of IPR applications received	CoRs Issued
1	April 2024 – March 2025	857	792
2	April 2025 – March 2026	1090	1016
3	April 2026 – June 2026	441	309

The applications span a wide range of sectors, including agrochemicals, biotechnology, chemicals, food, pharmaceuticals, textiles, biochemistry, polymer technology, microbiology, biomedical and agricultural engineering, as well as traditional knowledge-based innovations. This broad sectoral representation underscores the framework's increasing adoption and relevance across research- and innovation-driven industries. The Biological Diversity (Amendment) Act, 2023 facilitates innovation while ensuring the conservation and sustainable use of India's biological resources, aligning with the principles of fair and equitable benefit sharing and sustainable development.

FIRST VOLUNTARY CERTIFICATION SCHEME FOR INCENTIVIZATION OF ACCESS AND BENEFIT SHARING (VCS-I-ABS)

The Ministry of Environment, Forest and Climate Change (MoEFCC), in collaboration with the National Biodiversity Authority (NBA), the Quality Council of India (QCI), and the United Nations Development Programme (UNDP) India, launched the Voluntary Certification Scheme for Incentivization of Access and Benefit Sharing (VCS-I-ABS). With this initiative, India becomes the first among the 196 Parties to the Convention on Biological Diversity (CBD) to operationalize a dedicated voluntary certification scheme for Access and Benefit Sharing (ABS).

India is a global leader in ABS implementation, accounting for nearly 60% of the Internationally Recognized Certificates of Compliance (IRCCs) published in the CBD's ABS Clearing-House. The VCS-I-ABS provides a certification logo and certificate to business entities that comply with the provisions of the Biological Diversity Act, 2002, and associated regulations, thereby creating a market differentiator and encouraging wider ABS compliance.



The scheme aims to promote responsible sourcing of biological resources, support benefit sharing with local communities, enhance consumer confidence, and position India as a hub for ABS-compliant businesses. Developed with support from the GoI-UNDP Biodiversity Finance Initiative (BIOFIN), the scheme operationalizes India's Biodiversity Finance Plan and contributes to the Kunming-Montreal Global Biodiversity Framework and National Biodiversity Target 13 on equitable benefit sharing. The VCS-I-ABS logo has been registered as a trademark, and certification will be provided through accredited third-party certification bodies under the National Accreditation Board for Certification Bodies (NABCB).



The International Day for Biological Diversity (IDB) is observed every year on 22 May to commemorate the adoption of the text of the Convention on Biological Diversity (CBD), one of the most significant international environmental agreements dedicated to the conservation and sustainable use of biodiversity. The theme for IDB 2026, “Acting Locally for Global Impact,” is particularly significant as it emphasizes the critical role of local communities, indigenous knowledge systems, Biodiversity Management Committees (BMCs), and grassroots conservation initiatives in addressing global environmental challenges. The theme resonates strongly with India's decentralized biodiversity governance framework, which empowers local communities to conserve biological resources and traditional knowledge while contributing to national and global biodiversity goals.

NATIONAL-LEVEL CELEBRATION OF IDB 2026

The National-Level Celebration of the International Day for Biological Diversity (IDB) 2026 was held on 22 May 2026 at the Indian Institute of Forest Management (IIFM), Bhopal, Madhya Pradesh. The programme was organized by the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, in collaboration with the Government of Madhya Pradesh, the National Biodiversity Authority (NBA), and the International Big Cat Alliance (IBCA).

The event was presided over by Shri Bhupender Yadav, Union Minister for Environment, Forest and Climate Change, along with Dr. Mohan Yadav, Chief Minister of Madhya Pradesh. Other distinguished dignitaries included Shri Kirti Vardhan Singh, Union Minister of State for Environment, Forest and Climate Change, and Shri Dileep Ahirwar, Minister for Forest and Environment, Government of Madhya Pradesh.

The programme witnessed the participation of senior government officials, scientists, forest officers, representatives of Biodiversity Management Committees, academic institutions, industries, civil society organizations, researchers, and students from across the country. The discussions highlighted the significant progress achieved under the Access and Benefit Sharing (ABS) mechanism, with nearly INR 145 crore

distributed to beneficiaries nationwide, benefiting around 11,000 Biodiversity Management Committees. This achievement reflects India's commitment to ensuring the fair and equitable sharing of benefits arising from the utilization of biological resources and associated traditional knowledge, while strengthening biodiversity conservation and supporting local communities.

On the sidelines of the event, the State Biodiversity Boards, Biodiversity Management Committees (BMCs), and various line departments showcased their achievements, innovative initiatives, and biodiversity-based products through thematic exhibitions. The exhibition served as a valuable platform for sharing best practices, promoting community-led biodiversity conservation, and highlighting sustainable livelihood opportunities based on the sustainable use of biological resources.



RELEASE OF PUBLICATIONS AND NEW INITIATIVES

A significant highlight of the national celebration was the release of several important publications, awareness materials, and digital initiatives aimed at strengthening biodiversity conservation and governance in the country. These included a Customized MyStamp on Biodiversity Conservation, India's Biodiversity Report 2026: Insights from the 7th National Report to CBD, and India's Progress in Implementing ABS: Insights from India's First National Report on the Nagoya Protocol.



Notable publications

National Report on the Nagoya Protocol

Equally significant was the release of Implementation of ABS in India: Insights from the First National Report on the Nagoya Protocol on Access and Benefit Sharing. This publication documents India's pioneering efforts in implementing the Access and Benefit Sharing (ABS) mechanism, which ensures that benefits arising from the utilization of biological resources and associated traditional knowledge are shared fairly with local communities. The report reinforces India's global leadership in operationalizing biodiversity governance through inclusive and equitable frameworks.

MyStamp

The release of the Customized MyStamp and the Special Postal Cover further elevated public awareness and national pride in India's rich biological heritage. These commemorative postal initiatives celebrate the country's extraordinary ecosystems, endemic species, and community-led conservation efforts while conveying a powerful message of environmental stewardship to citizens across generations.



ABS End-to-End Portal Version 2.0

The launch of the ABS End-to-End Portal Version 2.0 marked a major step towards digital governance and ease of doing business. By integrating application processing, approvals benefit-sharing mechanisms, and fund management into a unified online platform, the portal enhances transparency, efficiency, and accountability while strengthening institutional coordination among the NBA, State Biodiversity Boards, and Biodiversity Management Committees.



Release of Film on Sharing Nature's Wealth

Another noteworthy contribution was the release of the film "Sharing Nature's Wealth: India's Access and Benefit Sharing Journey," which highlights India's biodiversity wealth, traditional knowledge systems, People's Biodiversity Registers, and the successful distribution of benefit-sharing funds to local communities. The film effectively demonstrates how biodiversity conservation can generate tangible socio-economic benefits while empowering grassroots stakeholders. The film is available through the following link

 (<https://www.youtube.com/watch?v=8cSKvRcBHig>)

Special Cover

On the occasion of celebration event of International Day for Biological Diversity 2026 at NBA, Chennai on 22nd May 2026, NBA with the support of the Postal Department, released a special cover along with cancellation as a tribute to India's rich biodiversity heritage. The design portrays the vibrant mosaic of forests, rivers, and endemic species, symbolising the nation's deep-rooted commitment to conservation led by local communities and aligned with global efforts. This issue honours the dedication of researchers, policymakers, and communities safeguarding our biological wealth, reaffirming India's steadfast resolve to promote ecological

harmony and sustainable development for present and future generations.

Collectively, these publications and initiatives represent a proud achievement for the National Biodiversity Authority and the nation as a whole. They not only document India's biodiversity successes and policy innovations but also strengthen public engagement, promote transparency, and reinforce India's leadership in global biodiversity governance. The releases serve as enduring knowledge resources and symbols of India's steadfast commitment to conserving its natural heritage for present and future generations.



STATE-LEVEL CELEBRATION AT BHOPAL

The Madhya Pradesh State Biodiversity Board (MPSBB), Bhopal, successfully organized the State-Level Programme to commemorate the International Day for Biological Diversity (IDB) 2026 on 22 May 2026 at the Indian Institute of Forest Management (IIFM), Bhopal. Conducted during the second half of the day's celebrations following the sessions of the International Big Cat Alliance (IBCA), the programme brought together a wide range of stakeholders including officials from various departments, biodiversity experts, researchers, Technical Experts of the Board, Project Investigators (PIs), Co-Project Investigators (Co-PIs), Biodiversity Management Committees (BMCs), academicians, students, local community representatives, forest officials, and other stakeholders engaged in biodiversity conservation.

The event was graced by Shri Virendra R. Tiwari, Chairperson, National Biodiversity Authority (NBA), Chennai; Mr. Raghu Kumar Kodali, Scientist G, Ministry of Environment, Forest and Climate Change (MoEFCC); Dr. B. Balaji, Member Secretary, National Biodiversity Authority; and Dr. K. Ravichandran, Director, IIFM, Bhopal. During the inaugural session, the achievements and ongoing initiatives of MPSBB were highlighted, followed by the release of several awareness and outreach materials, including documentary films on the Biodiversity Heritage Site of the Amarkantak region, conservation of Sacred Groves (Devlok Van) of Madhya Pradesh, and the proposed Biodiversity Park in Bhopal; the Madhya Pradesh Biodiversity Theme Song; the Biodiversity Capacity Building and Awareness

Brochure; posters for the State-Level Madhya Pradesh Biodiversity Quiz 2026; and the State-Level Annual Biodiversity Awards 2026.

The programme also featured the distribution of prizes and certificates to winners of the State-Level Annual Biodiversity Awards 2024 and 2025, as well as the State-Level Biodiversity Quiz 2026, recognizing notable contributions towards biodiversity conservation and community participation. Awareness activities such as a biodiversity-based street play (Nukkad Natak), thematic presentations, and interactive sessions effectively conveyed the importance of biodiversity conservation.

A major attraction was the exhibition organized by MPSBB, showcasing biodiversity-based traditional knowledge, indigenous agricultural diversity, medicinal and traditional bioresources, apiculture and honeybee products, value-added products, Mission LiFE awareness materials, and traditional seed varieties, with active participation from resource persons, district representatives, and Biodiversity Management Committees. Technical sessions focused on biodiversity conservation, Access and Benefit Sharing (ABS), community participation, sustainable development, youth engagement, and biodiversity governance, with experts sharing valuable insights and field experiences. The programme concluded with a vote of thanks and reaffirmed the collective commitment towards biodiversity conservation, sustainable use of biological resources, and strengthening community participation in line with the IDB 2026 theme, "Acting Locally for Global Impact."



WORLD ENVIRONMENT DAY 2026

The National Biodiversity Authority (NBA), Chennai, celebrated World Environment Day on 5 June 2026 under the global theme “Inspired by Nature. For Climate. For Our Future.” The programme highlighted the importance of biodiversity conservation, climate action, and sustainable lifestyles in securing a resilient future.



The celebrations commenced with a sapling plantation drive under the Government of India’s “Ek Ped Maa Ke Naam” campaign. Shri A. Udhayan, IFS, Principal Chief Conservator of Forests and Director, Advanced Institute for Wildlife Conservation, Government of Tamil Nadu, attended the event as the Chief Guest, while Shri Anurag Mishra, IFS, Special Secretary, Environment, Climate Change and Forest Department, Government of Tamil Nadu, graced the occasion as the Guest of Honour. Shri Virendra R. Tiwari, IFS (Retd.), Chairperson, National Biodiversity Authority, presided over the programme. Officials of the NBA, representatives of State Biodiversity Boards, Union Territory Biodiversity Councils, Biodiversity Management Committees, and other stakeholders participated in the celebrations.

On the occasion, the NBA launched its revamped official website and unveiled the Voluntary Certification Scheme – Incentivisation for Access and Benefit Sharing (VCS-I-ABS) to strengthen awareness, transparency, stakeholder engagement, and the effective implementation of biodiversity governance mechanisms. The publication “Looking at Digital Sequence Information through an Indian Lens” was also released during the event.



INTERNATIONAL DAY OF YOGA CELEBRATED @ NBA

The National Biodiversity Authority (NBA), Chennai, celebrated the International Day of Yoga on 21.06.2026 with the theme “Yoga for Healthy Ageing.” Shri Virendra R. Tiwari, IFS (Retd.), Chairperson, NBA, inaugurated the celebrations by lighting the ceremonial lamp. Various yoga asanas and breathing exercises, as prescribed under the Common Yoga Protocol (CYP), were conducted by Shri R. Ramesh, PS to the Chairperson, NBA, to promote physical fitness, mental well-being, and holistic health.



The programme witnessed enthusiastic participation from the officers and staff of NBA. The observance emphasised the importance of incorporating yoga into daily life to maintain physical vitality, reduce stress, enhance mental resilience, and support healthy ageing. Participants actively participated in the session and reaffirmed their commitment to adopting yoga as a regular practice to achieve overall well-being and a balanced lifestyle.



78TH AUTHORITY MEETING

The 78th Authority meeting of the NBA was held on 23 May 2026 at Indian Institute of Forest Management, Bhopal, Madhya Pradesh. The Member Secretaries of Odisha, Madhya Pradesh, Andhra Pradesh and Tripura who have been newly appointed as members of the Authority were welcomed by the members. The Authority deliberated upon various issues including the consideration of the proposal for designating the Natural History Museum & Research Centre of Mizoram University as a designated repository under Section 39 of the Biological Diversity Act 2002; the guidelines pertaining to sector-specific benefit sharing components for Intellectual Property Right (IPR) applications etc. The members also felicitated and offered their wishes to Shri. Raghu Kumar Kodali, Advisor, MoEFCC for his retirement.



SECOND MEETING OF THE EXPERT COMMITTEE ON INVASIVE ALIEN SPECIES CHARTS ROADMAP FOR NATIONAL ACTION

The National Biodiversity Authority (NBA) convened the Second Meeting of the Expert Committee (EC) on Invasive Alien Species (IAS) on 9 June 2026 at Chennai in a hybrid mode. The meeting was chaired by Dr. Dhananjai Mohan, IFS (Retd.), with Prof. (Dr.) A. Biju

Kumar serving as Co-Chair. The meeting brought together representatives from the Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Agriculture (MAFW) and Farmers Welfare, National Tiger Conservation Authority (NTCA), Botanical Survey of India



(BSI), Zoological Survey of India (ZSI), ICAR institutions, State Forest Departments, research organizations, academic institutions, and other expert bodies.

The meeting reviewed the progress made by the thematic sub-committees constituted following the first EC meeting and discussed the development of a comprehensive national framework for the management of invasive alien species in India. Five sub-committees presented their reports covering Invasive Alien Plants, Invasive Microorganisms and Invertebrates, Invasive Vertebrates, Risk Assessment, Policy and Pathways, and Prioritization Frameworks. An additional presentation was made on the development of a standardized national format for compiling invasive alien species records across the country.

The Committee reached broad consensus on several strategic priorities, including the preparation of a scientifically validated national inventory of invasive alien species, development of standardized risk assessment and prioritization protocols, strengthening of quarantine and biosecurity systems, establishment of early warning and rapid response mechanisms, promotion of State-level action plans, and greater use of emerging technologies such as environmental DNA (eDNA), molecular diagnostics, geospatial tools, and citizen science platforms. Members also emphasized the importance of enhanced coordination among ministries, research institutions, State Governments, and implementing agencies for effective implementation. The meeting concluded with an agreement to consolidate the recommendations into a comprehensive national framework that will guide future policy and management actions on invasive alien species in India.

EXPERT COMMITTEE MEETING ON BIODIVERSITY HERITAGE SITES

The provisions of Section 37 of the Biological Diversity (Amendment) Act, 2023 empowers the State Government to notify areas of ecological and biodiversity importance as biodiversity heritage sites in the Official Gazette, based on recommendations from the State Biodiversity Board. Before making such recommendations, the Board must consult the relevant local bodies and Biodiversity Management Committees to ensure local participation and representation. The Act also allows the State Government, in consultation with the Central Government, to frame rules for the management and conservation of these sites and to establish schemes for compensating or rehabilitating individuals or communities who may be economically affected by the notification.

In this context, the NBA, in exercise of the powers conferred under Section 13(2) of the Biological Diversity Act, 2002, as amended in 2023, reconstituted an Expert Committee under the Chairmanship of Shri A. K. Goyal, IFS (Retd.), Former Special Secretary, Ministry of Panchayati Raj, "To develop model guidelines for framing Rules by the State Government for notifying, conserving and managing the areas of biodiversity importance as Biodiversity Heritage Sites(BHS)". The committee met twice on 29.05.2026 and 10.06.2026 and discussed the broad framework of the model guidelines and also sought inputs from the SBBs for framing the model rules. The Committee examined various issues relating to BHS, including criteria and areas for notification, procedures for declaration, ownership and governance aspects, conservation and management measures, institutional arrangements, funding mechanisms, community participation and rights, compensation-related issues, documentation and monitoring frameworks, and compliance and enforcement mechanisms.

MARINE SECTOR WORKSHOP ON ACCESS AND BENEFIT SHARING (ABS) IN VIJAYAWADA

The Andhra Pradesh State Biodiversity Board (APSBB), in collaboration with the National Biodiversity Authority (NBA), organised a workshop on Access and Benefit Sharing (ABS) in the marine sector on 29 April 2026 in Vijayawada. The workshop focused on extending the ABS mechanism to marine biological resources, with the objective of ensuring that a fair share of benefits derived from their commercial utilization reaches coastal fishing communities.

Addressing the media on the sidelines of the workshop, APSBB Chairman Shri Neelayapalem Vijay Kumar highlighted the proposal to recognise fishermen as “guardians of the sea” and ensure that industries utilising marine biological resources share a portion of their revenues with local communities. Speaking on the occasion, NBA Chairperson Shri Virendra R. Tiwari, IFS (Retd.), informed that an expert committee has been constituted to prepare a comprehensive inventory of marine species, which will facilitate the effective implementation of ABS in the marine sector.



PANEL DISCUSSION AT HERBALIFE—IIT MADRAS CENTRE OF EXCELLENCE INAUGURATION

Shri Virendra R. Tiwari, IFS (Retd.), Chairperson, NBA, participated as the Guest of Honour in a panel discussion titled “Regulatory Landscape for Fermentation-derived Herbal Products in India: Perspectives from Enablers and Engagers” held on 22 June 2026 at the TTJ Auditorium, IIT Madras, during the inauguration of the Herbalife-IIT Madras Centre of Excellence on Plant Cell Fermentation Technology.

During the discussion, the Chairperson emphasized that the National Biodiversity Authority views itself not merely as a regulator but as a key partner in advancing India’s bioeconomy. He highlighted the importance of ensuring that emerging technologies such as plant cell fermentation contribute to both economic growth and biodiversity conservation. He further noted that innovation-friendly regulations, time-bound approvals, transparent Access and Benefit Sharing (ABS) mechanisms, and internationally aligned governance frameworks can position India as a global leader in sustainable biotechnology while upholding the principles of the Nagoya Protocol and the Convention on Biological Diversity.



GoI–UNDP–GEF 8 OECM PROJECT

"Enhancing the Conservation and Sustainable Use of Biodiversity to Meet India's Commitment to the Kunming-Montreal Global Biodiversity Framework Targets by 2030"

India has launched the GEF-funded project, “Enhancing the Conservation and Sustainable Use of Biodiversity to Meet India's Commitment to the KMGBF Targets by 2030,” marking a significant step towards achieving the Kunming-Montreal Global Biodiversity Framework (KMGBF) Target 3. Following the signing of an MoU between MoEFCC and UNDP on 12 May 2026, the project will be implemented by the National Biodiversity Authority (NBA) from 2026 to 2032 with a GEF grant of USD 6.65 million and total financing of USD 60.79 million. The initiative aims to bring an additional 3% of India's land and marine areas under conservation through the recognition and integration of Other Effective Area-Based Conservation Measures (OECMs).

Recognizing that substantial biodiversity exists beyond Protected Areas in community forests, sacred groves, wetlands, coastal ecosystems, and private lands, the project will establish an enabling policy framework, strengthen institutions, mobilize innovative financing, improve ecological connectivity, enhance knowledge systems, and ensure effective monitoring. Emphasizing inclusive and community-led conservation, it will actively engage women, youth, tribal communities, marginalized groups, and the private sector. By establishing a national OECM framework and mobilizing over USD 60 million in co-financing, the project will strengthen India's biodiversity conservation efforts and contribute significantly to the global 30x30 target.

MoEFCC -NBA-GIZ PROJECT

Advancing Digital Biodiversity Governance through the National e-PBR Framework

The Ministry of Environment, Forest and Climate Change (MoEFCC), the National Biodiversity Authority (NBA), and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, India is jointly implementing the project “Development of National Framework for Electronic People’s Biodiversity Registers (e-PBR) in India” to strengthen biodiversity governance and establish a nationally integrated digital framework for People’s Biodiversity Registers. The project aims to enhance and operationalise a national e-PBR system, facilitating efficient biodiversity data management and supporting the Government of India’s Ease of Doing Business initiative through a streamlined digital platform.

The initiative builds upon NBA’s efforts to digitise PBRs, which began in 2017 under the UNEP-GEF ABS Project through the development of the BIOMIS portal and State Biodiversity Portals. Proposed under the German Government’s International Climate Initiative (IKI) in 2021, the project is now being implemented across 14 States, including Rajasthan and Uttar Pradesh in addition to the 12 pilot States. The project focuses on upgrading digital tools such as the BIOMIS portal and e-PBR mobile application, supporting large-scale digitisation and implementation of PBRs, and strengthening institutional and technical capacities through training and capacity-building programmes.

Engagement of Eight Young Professionals at NBA

To strengthen institutional capacity and support its technical, legal, and administrative functions, the National Biodiversity Authority (NBA) has engaged eight Young Professionals. Bringing diverse academic backgrounds and expertise, they will contribute to biodiversity conservation initiatives, project implementation, research, and policy support. Their induction reflects NBA's commitment to fostering young talent while enhancing organizational effectiveness and advancing its strategic objectives.

Induction of Two Short-Term Interns

As part of its Short-Term Internship Programme, the National Biodiversity Authority (NBA) inducted two students, one from Tamil Nadu and another from Mumbai, for a one-month internship. The programme provides students with practical exposure to biodiversity conservation and environmental governance while enabling them to contribute fresh perspectives and support NBA's activities and objectives.

Swachhta Pledge under Swachhta Pakhwada 2026

As part of Swachhata Pakhwada 2026, the National Biodiversity Authority (NBA) organized a Swachhata Pledge at its Conference Hall, with around 60 staff members participating. The pledge was administered by Dr. B. Balaji, Member Secretary, who emphasized the importance of cleanliness, environmental responsibility, punctuality, and collective action in fostering a healthy and productive workplace.



Participants reaffirmed their commitment to maintaining cleanliness at personal, workplace, and community levels, dedicating time to voluntary cleanliness activities and encouraging others to adopt similar practices. The programme highlighted the significance of individual responsibility and collective efforts in promoting sanitation and sustainability, reflecting NBA's continued commitment to the objectives of Swachhata Pakhwada and a cleaner, greener future.

NBA Plogging Drive at TICEL Biopark

As part of its commitment to environmental sustainability, the National Biodiversity Authority (NBA) organized a plogging drive at the TICEL Biopark campus on 04th May 2026. Around 30 staff members actively participated in the initiative and collected nearly 20 kg of waste from the campus surroundings. The drive underscored the importance of community participation and collective responsibility in maintaining clean and sustainable environments. The initiative reflected NBA's continued efforts to promote environmental stewardship and demonstrated how small individual actions can contribute to significant positive impacts.



Cleaning Drive and Tree Plantation Programme under Swachhta Pakhwada 2026

As part of Swachhta Pakhwada 2026, the National Biodiversity Authority (NBA), in collaboration with the National Centre for Sustainable Coastal Management (NCSCM), organized a Cleaning Drive and Tree Plantation Programme near Agaramthen Village Lake on 12th June, 2026. Over 50 participants, including officials, consultants, contractual personnel, and probationers, took part in the initiative. Participants cleaned irrigation channels by removing silt, weeds, plastic waste, and other debris, helping to improve water flow and restore the canal's carrying capacity. Saplings were also planted under the "Ek Ped Maa Ke Naam" campaign, promoting environmental conservation and increased green cover. The programme highlighted the importance of water conservation, environmental sustainability, biodiversity protection, and community participation, while reinforcing the objectives of Swachh Bharat Mission and Swachhta Pakhwada 2026.



World Blood Donor Day Celebrated at National Biodiversity Authority

The National Biodiversity Authority (NBA), Chennai, observed World Blood Donor Day on 15th June 2026 to raise awareness about the importance of voluntary blood donation and to recognize the invaluable contribution of blood donors in saving lives. Officials and staff members participated in the programme, which emphasized the role of regular and safe blood donation in supporting healthcare systems and emergency medical care.



The event promoted social responsibility and encouraged participants to spread awareness about the benefits of voluntary blood donation among their families, friends, and communities. The observance reaffirmed NBA's commitment to health awareness, community welfare, and humanitarian initiatives.

Capacity Building and Training Programme for Biodiversity Management Committees

1. NIRDPR, Hyderabad

The National Biodiversity Authority (NBA), in collaboration with the National Institute of Rural Development and Panchayati Raj (NIRDPR), Hyderabad, has sanctioned INR 25 lakh for capacity building and training of Biodiversity Management Committee (BMC) members from Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, and Kerala.

Under this initiative, nine training programmes have been conducted across Andhra Pradesh, Kerala, and Karnataka, benefiting 441 BMC members to date. The programme aims to strengthen local biodiversity governance and enhance the capacity of BMCs in biodiversity conservation and sustainable resource management.

2. Puducherry

A two-day Comprehensive Awareness-Raising and Capacity-Building Programme on the Biological Diversity Act, 2002 and its Amendments was organized on 26–27 May 2026 for Biodiversity Management Committees (BMCs), Union Territory Biodiversity Council (UTBC) members, and other stakeholders in Puducherry.

Shri Virendra R. Tiwari, IFS (Retd.), Chairperson, National Biodiversity Authority, Chennai, attended the programme as the Chief Guest. In his address, he described Puducherry as an example of India's rich biodiversity wealth and emphasized the critical role of BMCs in biodiversity conservation and governance. He highlighted the importance of People's Biodiversity Registers (PBRs) in documenting local biodiversity and traditional knowledge, supporting conservation efforts, creating public awareness, facilitating Access and Benefit Sharing (ABS), and safeguarding community knowledge.

Training Programme for CASFOS Officers at NBA

The National Biodiversity Authority (NBA) conducted a training programme for 64 State Forest Service (SFS) officers of the 2025-27 batch from the Central Academy for State Forest Service (CASFOS), Coimbatore, on 27th May 2026. The programme was inaugurated by Shri Virendra R. Tiwari, IFS (Retd.), Chairperson, NBA.

Technical sessions covered the implementation of the Biological Diversity Act, 2002 and its recent amendments, with special emphasis on the Access and Benefit Sharing (ABS) mechanism, Intellectual Property Rights (IPR), handling of offences under the Act, and the Kunming-



Montreal Global Biodiversity Framework (KMGBF) and National Biodiversity Strategy and Action Plan (NBSAP). Dr. B. Balaji, IFS, Member Secretary, NBA, also interacted with the trainees during the programme.



MANGROVES: NATURE'S HIDDEN PHARMACY

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When we think of mangroves, we usually picture dense coastal forests protecting shorelines from storms, tsunamis, and erosion. These remarkable ecosystems are celebrated for supporting fisheries, storing carbon, and conserving biodiversity. However, there is another fascinating side to mangroves that is often overlooked – they are a rich source of medicines and health-promoting compounds.

Growing in harsh environments characterized by high salinity, tidal flooding, intense sunlight, and oxygen-poor soils, mangrove plants have evolved unique survival mechanisms. To withstand these extreme conditions, they produce a variety of specialized chemicals that not only protect the plants themselves but also possess enormous medicinal value for humans.

Traditional Wisdom Meets Modern Science

For centuries, coastal communities have relied on mangrove plants for their medicinal properties. Traditional knowledge records that leaves of *Bruguiera* species have been used to help reduce blood pressure, *Excoecaria agallocha* for the treatment of leprosy and epilepsy, *Acanthus ilicifolius* for relieving rheumatic disorders, and *Avicennia* species as health tonics. *Ceriops* species have been traditionally used to stop bleeding, while bark extracts of *Rhizophora* species and seeds of *Xylocarpus* species are known for their astringent and anti-diarrheal properties. Several mangrove species, including *Avicennia nitida*, *Avicennia africana*, *Bruguiera parviflora*, and *Bruguiera exaristata*, are also believed to possess anticancer properties. While these traditional uses are widely recognized, many require rigorous scientific validation. Advancing research in this field could contribute to the discovery of novel drugs, generation of intellectual property, creation of employment opportunities, and sustainable economic benefits from mangrove resources. With this objective, our laboratory has undertaken pioneering studies to explore and validate the medicinal potential of mangrove plants.

Powerful Natural Antioxidants

One of the most promising properties of mangroves is their antioxidant activity. Antioxidants neutralize harmful free radicals that damage cells and contribute to aging and disease.

Mangroves are particularly rich in phenolic compounds, which are powerful antioxidants. Studies have shown that the leaves of *Acanthus ilicifolius* and *Excoecaria agallocha* exhibit exceptionally high antioxidant activity, highlighting their potential role in protecting human health.

Fighting Dangerous Viruses: Research conducted in our laboratory has demonstrated that extracts derived from mangrove species possess significant antiviral properties against a range of viruses affecting both humans and animals. The studies revealed inhibitory activity against Human Immunodeficiency Virus (HIV), Hepatitis B virus, Newcastle disease virus, Vaccinia virus, Semliki Forest virus, and Encephalomyocarditis virus. Among the mangrove taxa evaluated, species belonging to the *Rhizophoraceae* family exhibited the most potent antiviral activity. Further investigations identified lignins and several sugar molecules, including glucose, galactose, uronic acid, arabinose, and galactosamine, as the principal bioactive compounds responsible for these effects. These compounds were found to protect host cells from virus-induced damage and effectively interfere with the attachment of viruses to host cells, thereby preventing the initiation of infection.

A Natural Defense Against Harmful Bacteria

Mangroves also possess significant antibacterial properties. Lignin extracts obtained from *Ceriops decandra* have demonstrated strong antibacterial activity against *Escherichia coli* infections. Experimental studies showed that these extracts could protect laboratory mice from bacterial infection, largely due to their antioxidant and antimicrobial properties.

Natural Weapons Against Mosquito-Borne Diseases

Mosquito-borne diseases such as malaria, filariasis, and dengue continue to pose major public health challenges worldwide. Mangroves offer a natural solution. Our studies have shown that mangrove extracts can kill the larvae of *Anopheles stephensi* (malaria vector), *Culex tritaeniorhynchus* (filariasis vector), and *Aedes aegypti* (dengue vector). Particularly noteworthy is the stilt-root extract of *Rhizophora apiculata*, which exhibits highly effective larvicidal activity even at very low concentrations (17 ppm). This activity is attributed to a bioactive compound related to pyrethrum. In addition, mangrove extracts applied as ointments can repel mosquito bites, while smoke generated from certain mangrove materials also acts as a natural mosquito repellent, offering environmentally friendly alternatives for vector control.



Promising Anti-Diabetic Properties

Diabetes is a growing global health concern. Our research has revealed that extracts from *Ceriops decandra* possess significant anti-diabetic activity.

Experimental studies demonstrated that a dose of 120 mg/kg of the plant extract effectively controlled blood glucose levels, producing results comparable to glibenclamide, a widely used anti-diabetic drug. These findings suggest that mangroves could serve as a valuable source of future diabetes treatments.

Mangroves and Cancer Prevention

Perhaps one of the most exciting areas of mangrove research is their anticancer potential.

In our laboratory studies, black tea prepared from *Ceriops decandra* successfully prevented the development of oral cancer induced by a carcinogenic chemical (DMBA) in hamsters. While untreated animals developed severe cancerous changes, those receiving mangrove tea remained free from these abnormalities. Interestingly, the treated animals also did not experience the hair loss commonly associated with cancer progression.

Further studies revealed that extracts from *Excoecaria agallocha* and *Acanthus ilicifolius* suppressed lung cancer induced in laboratory mice by benzo(a)pyrene, a potent carcinogen. Remarkably, the lung cancer was completely eliminated within 16 weeks of treatment.

Natural Blood Thinners

Mangroves may also contribute to cardiovascular health through their anticoagulant properties.

Certain mangrove species contain polysaccharides that prolong blood-clotting time, helping prevent excessive clot formation. Among the species studied, *Avicennia marina* exhibited the strongest anticoagulant activity, followed by *Rhizophora* species, *Excoecaria agallocha*, and *Aegiceras corniculatum*.

These findings suggest potential applications in developing safer, naturally derived blood-thinning agents.

Computer-Aided Discovery of New Drugs

Using computer-based molecular docking techniques, our laboratory has identified several promising lead molecules that interact with disease-causing proteins and mutated genes. These compounds include Scalaradial, triterpenoids, dinitrophenylhydrazones, heptadecanoic acid, and stigmasterol. These molecules have shown potential against cervical, breast, oral, and skin cancers, as well as malaria, by targeting critical disease-related proteins and enzymes. Such discoveries provide valuable starting points for developing future pharmaceutical drugs.

The Way Forward

Despite these encouraging discoveries, much remains to be explored. Further research, clinical validation, and pharmaceutical development are essential to transform these natural compounds into safe and effective medicines for the future of human health. Continued investment in conserving mangroves is not only an environmental responsibility – it may also be an investment in the future of human health.

Suggested Reading

Kathiresan, K. 2020. *Bioprospecting potential of mangrove resources*. In : *Biotechnological Utilization of Mangrove Resources* (Eds. J.K. Patra, R.R. Mishra & H. Thatoi). Academic Press- an imprint of Elsevier. Pp.225-242.

AQUATIC INVASIVE SPECIES IN THE WESTERN GHATS: EMERGING THREATS TO FRESHWATER BIODIVERSITY AND ECOSYSTEM RESILIENCE

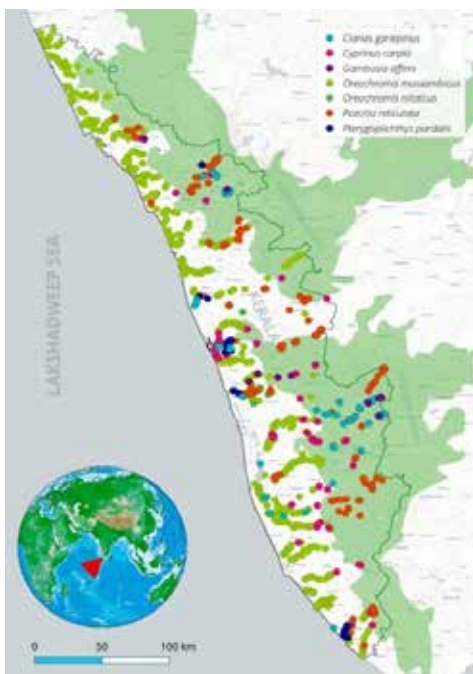
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The Western Ghats of India, recognised as one of the world's eight "hottest hotspots" of biodiversity, harbour an extraordinary diversity of freshwater ecosystems, including rivers, streams, wetlands, reservoirs, estuaries, and floodplain lakes. These ecosystems support hundreds of freshwater fish species, many of which are endemic and found nowhere else on Earth. However, alongside habitat degradation, pollution, river regulation, and climate change, biological invasions have emerged as one of the most significant threats to freshwater biodiversity in the region.

Alien and Invasive Species

Recent assessments indicate that the southern Western Ghats host more than 30 alien aquatic species, including invasive fishes and aquatic macrophytes. Among them, Mozambique tilapia (*Oreochromis mossambicus*), Nile tilapia (*O. niloticus*), African catfish (*Clarias gariepinus*), Amazon sailfin catfish (*Pterygoplichthys pardalis*), common carp (*Cyprinus carpio*), guppy (*Poecilia reticulata*), and mosquito fish (*Gambusia affinis*) have established self-sustaining populations across many freshwater ecosystems as invasive species. Similarly, invasive aquatic plants such as water hyacinth (*Pontederia crassipes*), giant salvinia (*Salvinia molesta*), and cabomba (*Cabomba furcata*) have transformed habitats and altered ecosystem processes.



Distribution of invasive fish in the southern Western Ghats, Kerala, India.

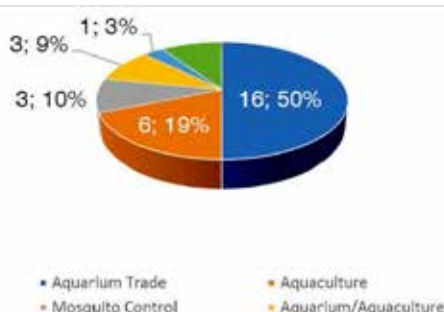
Pathways

The pathways of introduction are well known. Aquaculture, ornamental fish trade, biological control programmes, accidental escapes during floods, and intentional releases have facilitated the spread of alien species throughout the Western Ghats. However, aquarium trade and aquaculture are the major contributors for invasive fish introduction in the region. Once established, these species often thrive in disturbed ecosystems and become difficult to eradicate.

Introduction pathways of alien species in the southern Western Ghats in Kerala, India.

Case Study 1: Veli Lake, Kerala

One of the most striking examples of ecosystem transformation is observed in the Veli-Akkulam Estuary in Kerala. Long-term ecological studies spanning three decades have revealed a gradual replacement of native fish communities by invasive species. Indigenous fishes such as the pearlspot (*Eetroplus suratensis*), native barbs, and catfishes that once dominated the estuary have declined substantially, while invasive tilapias, African catfish, and Amazon sailfin catfish now dominate the food web, and the ecological



services are impacted by another plant invasive, water hyacinth. Ecosystem modelling has shown that these invasions have resulted in “trophic simplification”, where food-web complexity decreases, native predator-prey interactions weaken, and ecosystem resilience declines. Such changes are not merely species-level events but represent ecosystem-scale transformations affecting fisheries, ecosystem services, and biodiversity conservation.

Case Study 2: Mattupetty Reservoir, Kerala

Another emerging concern is the phenomenon of invasion meltdown, where multiple invasive species interact positively and facilitate each other's establishment and spread. The Mattupetty Reservoir in the southern Western Ghats represents a classic example of this process. The co-occurrence of invasive fishes such as common carp, tilapias, African catfish, and other alien species, together with invasive aquatic plants, has created novel ecological conditions that favour further invasions. Invasive species may modify habitats, alter nutrient cycles, increase turbidity, or change food availability, thereby creating opportunities for additional invasive taxa to establish. Such synergistic interactions accelerate biodiversity loss and make ecosystem restoration increasingly difficult.

The ecological consequences of aquatic invasions extend beyond species replacement. Invasive fishes often compete with native species for food and breeding habitats, prey on indigenous fauna, alter nutrient dynamics, and modify ecosystem functioning. Invasive aquatic plants can reduce dissolved oxygen, obstruct water flow, interfere with fisheries, and change habitat structure. In reservoirs, rivers, wetlands, and estuaries, these changes can lead to homogenisation of fish communities, where unique endemic assemblages are gradually replaced by a small number of widespread invasive species.

Way Forward

The challenge of aquatic invasions assumes particular significance in the Western Ghats because of the exceptionally high levels of endemism. Many freshwater fishes in the region have restricted distributions and are confined to single river basins or even individual streams. Such species are highly vulnerable to invasive competitors and predators. Once populations decline, recovery is often difficult because of their limited geographic ranges and specialised habitat requirements.

The National Biodiversity Strategy and Action Plan (NBSAP) of India provides a strong framework for addressing invasive alien species. In the context of aquatic ecosystems, several priority actions deserve immediate attention. First, systematic surveillance and long-term monitoring programmes must be strengthened across river basins, reservoirs, wetlands, and estuaries to enable early detection of new invasions. Second, a national database on aquatic invasive species, integrating distribution records, ecological impacts, pathways of introduction, and risk assessments, should be developed and regularly updated. Third, stricter regulation of the ornamental fish trade, aquaculture introductions, and interstate movement of non-native species is essential.

Further, ecosystem restoration programmes should prioritise the control of high-risk invasive species and the recovery of native fish populations and habitats. Conservation planning should identify invasion refugia – critical habitats that remain relatively free of invasive species – and provide them with enhanced protection. Citizen science programmes, involving fishers, students, local communities, and biodiversity management committees, can play a crucial role in monitoring and reporting new invasions. Public awareness campaigns are equally important, particularly to discourage intentional release of ornamental and aquarium species into natural waters.

Prevention, early detection, and rapid response therefore remain the most effective strategies. Protecting the unique freshwater biodiversity of the Western Ghats will require coordinated action among biodiversity agencies, fisheries departments, research institutions, local communities, and policymakers. The Western Ghats continue to be a global centre of freshwater biodiversity. Preventing the silent replacement of native ecosystems by invasive species is essential not only for conserving endemic biodiversity but also for safeguarding fisheries, ecosystem services, and ecological resilience for future generations.

POINT CALIMERE – A BIODIVERSITY RICH SITE IN THE EAST COAST OF TAMIL NADU

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Point Calimere or Kodyakarai is located in Nagapattinam district of Tamil Nadu and around 60km away from the district headquarters. The last remaining patch of around 22.5 sq.km area of Tropical Dry Evergreen Forest (TDEF) in the region is declared as Wildlife Sanctuary in 1967 understanding its biodiversity importance. The flagship species of the sanctuary is the charismatic Blackbuck *Antelope cervicapra*, a Schedule I species of the Indian Wildlife (Protection) Act, 1972. Besides, Blackbuck, the sanctuary hosts around 14 different species of other mammals, 297 species of birds, 18 species of reptiles and 9 species of amphibians. Around 300 species of plants, including 154 medicinal plants, are also recorded from the area. *Manilkara hexandra* is a significant TDEF tree species commonly found in the forested areas.

The Point Calimere Wetland Complex or Great Vedaranyam Swamp (GVS), that spreads across 385 sq.km from Point Calimere till Adirampattinam in Thanjavur district is very significant habitat along the Central Asian Flyway. The entire Great Vedaranyam Swamp was declared a Ramsar Site in 2002 realising its global significance. This was the first Ramsar site of Tamil Nadu. This wetland complex has a wide variety of habitats such as TDEF, grasslands, mangroves, lagoons (Muthupet and Siruthalaikadu), freshwater sources, etc. Along with these, the adjoining seashore and marine environment provide many types of habitats for resident as well as migratory birds from different parts of the world. The Bombay Natural History Society (BNHS) has been studying this area for many decades now. This has generated enormous amount of long-term data on avian ecology and migration pattern. These studies reveal that



the Point Calimere hosts birds from 15 different countries located in four continents. The Point Calimere remains as wintering as well as stopover site for various migratory birds. The BNHS ringing studies have proven that many species use this place for a short time to refuel for their continuous journey further south and also to the Western Ghats (especially migratory passerine birds).

The migratory season is from October to March and birds number peaking between December to February. The Critically Endangered Spoon-billed Sandpiper *Calidris pygmaea* was a regular migrant to Point Calimere three decades before and has not been reported from the place now. Long-distance migratory waders (sandpipers, plovers and stints), many species of terns, gulls, flamingos gathering in several thousand during the winter to make the place very vibrant. The waders or shorebirds are habitat specialists and they can't survive once these habitats are lost. The BNHS studies show that the site supports over a million birds during each season. These birds play a significant role in making the habitat rich through their feeding habit and their faeces. They feed on insects and other small invertebrates and maintain balance in the ecosystem. The enormous amount of excreta enriches the productivity of this fragile habitat. These factors, in turn, increase the habitat conduciveness to support the local livelihood through increased fish and prawn production.

The human communities living in and around this large landscape highly depends on this wetland complex for their livelihood. Understanding the importance of the birds and other wildlife for well-being of the communities around, people should support the conservation efforts undertaken here. The major threats to the habitat and biodiversity are encroachment, habitat alteration, sea-mouth closure of lagoons, spread of invasive flora and fauna, over exploitation of resources, illegal hunting, lack of awareness in the community and climate change.

Apart from above factors, the Point Calimere also has cultural richness or some religiously significant monuments. The Ramar Padam, Muniappan temple, Shervarayan temple, Mattumunian temple, Modimandapam, Kuzhagar temple, Navakodi Sithar temple and Avuliakani dargah are very significant to name. This biodiversity and culturally rich area should be protected well for well-being of the communities around. Creation of alternative or additional livelihood options to reduce the pressure on the natural resources, awareness on biodiversity and its importance, regulated ecotourism involving local communities to increase the ownership, integrated approach to curb the illegal hunting, control or eradication of invasive species spread, etc are essential to save the habitats and biodiversity richness in the area.

CORPORATE ENVIRONMENTAL RESPONSIBILITY AS A STATUTORY AND CONSTITUTIONAL OBLIGATION – AN INDIAN PERSPECTIVE

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Corporate Social Responsibility (CSR)

The business community has recognised, over the last few decades, the responsibility to focus not just on profits for their companies, but also on social responsibility and society at large. Corporate Social Responsibility (CSR) is a business model where companies integrate social, environmental, and ethical concerns into their core operations. It shifts the focus from pure profit maximization to the "triple bottom line," balancing Profit, People, and Planet to ensure net positive impacts on the society.

CSR – Indian Perspective

Section 135 of the Companies Act, 2013, mandates that certain classes of companies, specifically those meeting the criteria of size, net worth, and turnover, are required to spend a specified percentage of their average net profits on CSR activities. According to Schedule VII of the Companies Act, 2013, environmental activities include “ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agroforestry, conservation of natural resources, and maintaining quality of soil, air and water.”

With the enactment of Section 135 of the Companies Act, 2013, India became the first country in the world to mandate Corporate Social Responsibility (CSR). What began as voluntary philanthropy has gradually evolved into a justiciable mechanism for corporate governance.

CSR and Judicial trends

A landmark judgment by the Hon’ble Supreme Court of India in *M. K. Ranjitsinh & Ors. Vs. Union of India & Ors.* (2025 INSC 1472) is a significant development in Indian environmental and corporate law. It interpreted corporate social responsibility to inherently include environmental responsibility, holding that the legal person of a corporation has a fundamental duty to protect the environment as a key organ of society.

The litigation, initiated under Article 32 of the Constitution in 2019, challenges the proliferation of overhead transmission lines in the Great Indian Bustard’s habitat, particularly in and around the Thar Desert. The Court articulates an important doctrinal advance: the transformation of “Corporate Social Responsibility” (CSR) into a broader, binding concept of “Corporate Environmental Responsibility”, linking statutory CSR obligations under the Companies Act, 2013 with constitutional duties to protect the environment and endangered species.

Invoking the constitutional mandate under Article 51A(g), which casts a fundamental duty on every citizen to protect and improve the natural environment – including forests, lakes, rivers, and wildlife – the Court stated: “A corporation, as a legal person and a key organ of society, shares this fundamental duty. CSR funds are the tangible expression of this duty. Consequently, allocating funds for the protection of the environment is not a voluntary act of charity but a fulfilment of a constitutional obligation.”

Underscoring that CSR inherently includes the duty to sustain the environment, the judgment noted that the definition of “community” within the CSR framework now explicitly includes the natural world, thereby cementing the link between social welfare and environmental health. This crucial expansion recognizes that a corporation, as an organ of society, carries a responsibility that extends to the wider community impacted by its operations.

Referring to Sections 135 and 166(2) of the Companies Act, 2013, the judgment noted that the law effectively dismantles the “narrow view that corporate profit is solely the private property of shareholders” and instead places an obligation on corporates to act in “the best interests of the company, its employees, the shareholders, the community, and for the protection of the environment.”

It further referred to Schedule VII of the Companies Act, 2013, which enumerates permissible CSR activities, specifically listing “ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, and conservation of natural resources.”

Polluter pays principle and species protection

Furthermore, a significant aspect of the ruling was the application of the ‘polluter pays’ principle to biodiversity conservation. The companies must bear the cost of restoration, where corporate activities threaten or damage the endangered species. The Court emphasised that CSR funds can be lawfully directed towards both in situ conservation (protecting species in their natural habitats) and ex situ conservation, including breeding programmes and wildlife reserves. By integrating environmental liability with CSR compliance, this approach strengthens accountability for ecological harm.

Source:

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4. *The Statesman*, "Supreme Court expands CSR to cover corporate environmental responsibility", 26 May, 2026.
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YOUNG MINDS, SMALL ACTIONS, GLOBAL IMPACT: BIODIVERSITY LEARNING IN AN URBAN PARK

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Children are future guardians of nature and key stakeholders in achieving global biodiversity conservation goals. Urban parks, beyond their recreational value, serve as important biodiversity reservoirs within cities. They also provide ideal spaces for connecting young people with nature. Under the International Day for Biological Diversity (IDB) 2026 theme, "Acting locally for global impact," the Convention on Biological Diversity (CBD) encourages activities that raise awareness and inspire action in support of the Kunming–Montreal Global Biodiversity Framework (KMGBF).



As part of the IDB 2026 observance, a small independently organized biodiversity exploration programme was conducted at Chitra Park, Choolaimedu (Zone – 9; Ward – 112), Chennai, from 20–22 May 2026. Three children from Grades 4–6 participated in daily one-hour sessions designed to explore and appreciate biodiversity within an urban park setting.

Key outcomes of the programme:



Day 1 activity

- Introduction to biodiversity;
- Visual mapping of the park;
- species identification using the citizen science platform iNaturalist.

Day 2 activity

- Introduction to the IDB 2026 theme;
- Tree girth measurement to demonstrate ecosystem services;
- Nature-themed artwork



Day 3 activity



- Increased interest in biodiversity exploration.
- Greater appreciation of urban parks as biodiversity refuges.
- Familiarity with species identification using citizen-science tools.
- Understanding of tree ecosystem services and climate benefits.
- Motivation to support local biodiversity conservation.

- Positive engagement between children and park caretakers.
- Creative expression of biodiversity through art.
- Adoption of saplings for neighbourhood greening.
- Understanding the impacts of biodiversity exploitation and the importance of conservation and sustainable use.
- Interaction with and appreciation of park staff;
- Demonstration of biodiversity exploitation, conservation and sustainable use;
- Quiz-based assessment and participant reflections.

Though small in scale, the programme demonstrated how local actions can contribute to global biodiversity goals. It highlighted the role that children, park staff, and local communities can play in conserving biodiversity. Such initiatives help translate the KMGBF into action on the ground and reinforce a simple but powerful message: every effort counts, no action is too small, and acting locally is how we achieve global impact.

As May is a vacation period for many school children in India, it presents a valuable opportunity for biodiversity outreach and nature education. This programme demonstrated that meaningful engagement can be achieved with modest resources, with a total expenditure of just Rs. 834 on logistics, stationery, refreshments, and gifts (approximately Rs. 278 per day). Institutional support could help scale up and replicate such small independently organized initiatives, enabling wider participation and generating lasting conservation impact.

Acknowledgements: The programme benefitted greatly from the enthusiastic participation of Agaramudhalvan, Johnpaul, and Sakthivel, the support of their parents, and the cooperation of the staff of Chitra Park, all of whom are gratefully acknowledged.

Ken Nala Notified as Biodiversity Heritage Site in Uttar Pradesh

The Government of Uttar Pradesh has notified Ken Nala in the Gulra area of the Bhinga Reserve Forest, Shrawasti district, as a Biodiversity Heritage Site (BHS) under Section 37 of the Biological Diversity Act, 2002. Based on the recommendation of the Uttar Pradesh State Biodiversity Board, the 80-hectare freshwater wetland was officially notified on 4 June 2026.

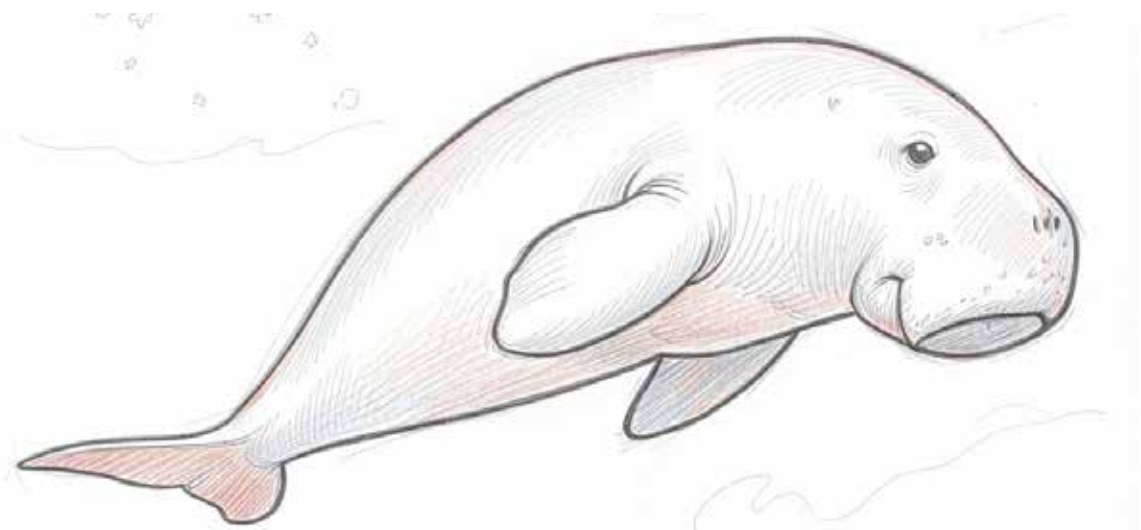
The site supports rich biodiversity, including diverse flora and fauna such as leopard, chital, jackal, langur, mongoose, snakes, fishes, and numerous resident and aquatic bird species. The notification aims to conserve the area's ecological significance while promoting sustainable ecotourism and strengthening biodiversity conservation efforts in the region.

Mapping India's First Dugong Conservation Reserve

The dugong (*Dugong dugon*), listed as Vulnerable on the IUCN Red List of Threatened Species, occurs in the tropical and subtropical coastal waters of 48 countries from East Africa to Oceania. Across much of its range, populations have declined substantially, with many surviving only as small, fragmented populations at high risk of local extinction. Recognising the need for urgent conservation action, Tamil Nadu notified the Dugong Conservation Reserve in the Palk Bay region in 2022, covering approximately 448.34 km² along the coasts of the Thanjavur and Pudukkottai districts. As India's first marine conservation reserve dedicated to dugongs, it aims to protect critical seagrass habitats, conserve marine biodiversity, and promote community-based conservation to secure the long-term survival of this iconic marine mammal.



Text and Map: Dr R Suganthan





Upcoming CBD Intersessional Meetings: SBSTTA-28 and SBI-7 Ahead of COP 17

The twenty-eighth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-28) and the seventh meeting of the Subsidiary Body on Implementation (SBI-7) under the United Nations Convention on Biological Diversity (CBD) will be held from 27 July to 12 August 2026 at the United Nations Environment Programme (UNEP) Headquarters in Nairobi, Kenya. These intersessional meetings between the sixteenth and seventeenth Conferences of the Parties (COP 16 and COP 17) will play a critical role in reviewing global progress towards the implementation of the Kunming-Montreal Global Biodiversity Framework (KMGBF) and shaping decisions for COP 17.

SBSTTA-28 will focus on scientific and technical aspects of biodiversity conservation and sustainable use. Key agenda items include review of the second draft of the Global Report on Collective Progress in the Implementation of the KMGBF, assessment of indicators and metadata under the monitoring framework, and strengthening mechanisms for reporting progress through national reports. Discussions will also cover thematic areas such as synthetic biology, marine and coastal biodiversity, ecologically or biologically significant marine areas (EBSAs), sustainable wildlife management, protected areas, and integration of findings from assessments undertaken by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). The meeting is expected to provide scientific guidance to Parties for accelerating implementation of biodiversity targets by 2030.

SBI-7 will focus on implementation, resource mobilization, institutional effectiveness, and capacity-building. Major agenda items include assessment of progress in National Biodiversity Strategies and Action Plans (NBSAPs), national targets and reporting processes, biodiversity finance and resource mobilization, effectiveness of the financial mechanism, gender-responsive implementation of the CBD Gender Plan of Action (2023–2030), capacity-

building and technical cooperation, and collaboration with other international conventions and organizations. The meeting will also examine options to improve the efficiency and effectiveness of processes under the Convention and its Protocols, with recommendations to be forwarded to COP 17.

India enters these negotiations with a strong commitment to achieving the objectives of the KMGBF while emphasizing equity, adequate financial resources, technology transfer, and recognition of the role of Indigenous Peoples and Local Communities (IPLCs). Through its recently submitted Seventh National Report, India has aligned its National Biodiversity Strategy and Action Plan with all 23 global targets of the KMGBF and reported significant progress in ecosystem restoration, biodiversity-inclusive land-use planning, forest and tree cover enhancement, and conservation of flagship species such as tigers, Asiatic lions, and rhinoceroses.

At SBSTTA-28, India is expected to advocate for an indicator-driven monitoring framework, science-based conservation approaches, fair and equitable benefit-sharing from Digital Sequence Information (DSI), and community-centric biodiversity action. In SBI negotiations, India will continue to emphasize capacity-building, technology transfer for developing countries, and equitable sharing of benefits arising from the utilization of genetic resources and associated digital sequence information. These positions reflect India's broader objective of ensuring that biodiversity conservation and sustainable development remain mutually reinforcing while advancing the goals of the KMGBF.

The outcomes of SBSTTA-28 and SBI-7 are expected to significantly influence the negotiations and decisions at COP 17, providing the scientific, technical, and policy foundations necessary for accelerating global biodiversity action during the remaining years of the 2030 biodiversity agenda.

Buzzy Busy Bees



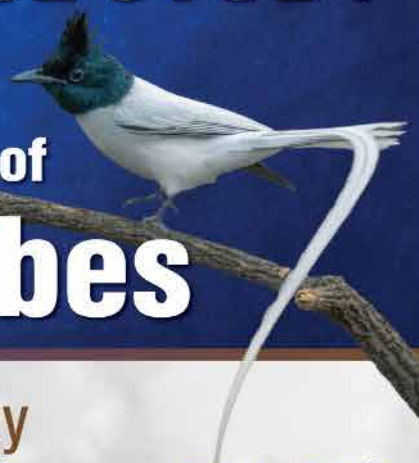
Look at the buzzing little bees
They are the busy bees
 Bee's part of vast biodiversity
 Forest or fields; town or city
Hovering over flowers
For many hours
 Gathering honey
 Mind you they pay no money
Pollinating trees, shrubs
Wild flowers, food crops and herbs
 Out pops fruits and seeds
 Vital for animals and birdies
So that your food is secure
Plants making the air pure
 And medicines cure
 More so to life endure
How sad
You would be mad
 Fertilizers and pesticides
 Are diminishing the little bees
Driving habitat loss
Do pay heed to this boss!
 Being sensitive
 Bees are indicative
To changing environments
Losing survival entitlement
 Promote these tiny shiny bees
 Plant only the natives
To save these bees
And answer their pleas





CASE STUDY

ABS-Based on Commercial Utilization of Soil Microbes



Commercial Utilization by
M/s. Synergia Life Sciences Pvt. Ltd.

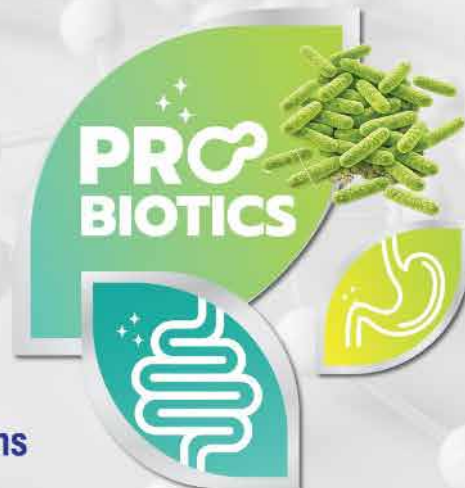
Bioprospecting

- Soil samples collected from:
 - Kalina Campus, Mumbai
 - Matunga, Mumbai
 - Wada Tehsil, Maharashtra

Microorganisms Isolated

- *Bacillus clausii*
- *Bacillus coagulans*
- *Bacillus licheniformis*

Developed Probiotic Formulations
& Vitamin K2-7



ABS Obligations

0.5%

of annual gross
ex-factory sale price
of the product
(excluding taxes)

+ Awareness programmes on BD Act
in collaboration with SBBs.

ABS funds utilized for:

- Biodiversity conservation
- Socio-economic development
of the area



ABS Realised

₹5.47 + Crore

ABS Distributed

₹5.20 + Crore

Benefited Nearly

84 BMCs

in Wada Tehsil, Palghar District,
Maharashtra.

This case demonstrates generation of tangible benefits
from microbial-based innovations for biodiversity
conservation and support livelihood of local people.



INTERNATIONAL DAY
FOR BIODIVERSITY 2026
Acting locally for global impact



LiFE
Lifestyle for
Environment

Biodiversity Matters

