Business Actions for Biodiversity Conservation | FROM PRINCIPLES TO PRACTICE



June 2024

Published by

Federation of Indian Chambers of Commerce and Industry (FICCI)
Federation House, Tansen Marg, New Delhi- 110001, India

and

United Nations Development Programme (UNDP) India
UNDP India Country Office, 55, Lodhi Estate, New Delhi - 110003, India

New Delhi, June 2024

Acknowledgement

We would like to express our gratitude and appreciation to the efforts of all those who have contributed to produce this comprehensive report. We would also like to acknowledge the contributions of various teams and individuals across the various business organisations who provided the necessary case studies, data and insights. Their collective efforts have been fundamental in bringing this report to fruition. The development of this report would not have been possible without the support from UNDP India.

We thank the Environment and Climate Change Division, FICCI led by Ms Jyoti Vij, Additional Director General, FICCI who was very encouraging in the report development. We also thank Mr Vikram Kotru, Head- Environment and Climate Change Division, FICCI, for continuous support and supervision in the process of drafting the report. We are also thankful to Ms Shruti Issar, Senior Assistant Director, FICCI for assistance with content development and providing direction to the report since its inception. We acknowledge Mr. Asim Sharma, Deputy Director, for his support in stakeholder outreach and valuable insights. Special thanks to Ms. Sheetal Rana, Research Associate, FICCI for her diligent work in research and content development. We are grateful for the collective efforts of all those involved in this report, and we hope that this report will serve as a valuable resource for businesses and stakeholders alike.

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Foreword



S K Pathak
Secretary General
FICCI

Biodiversity is vital for every living being on our planet. With growing environmental challenges, protecting biodiversity is important. Industries, as key economic players have to contribute towards sustainable practices and conservation. Businesses' commitment to biodiversity is both ethical and strategic.

This document serves as a guide, outlining the various international, national, and state level frameworks and guidelines that the industries could refer to in strategizing their mitigation actions and promoting biodiversity conservation.

The Compendium highlights innovative approaches businesses use to comply with National Biodiversity Authority norms, offering valuable insights for others. Showcasing industry's positive impact on biodiversity conservation, the case studies in this Compendium demonstrate the transformative power of sustainable business actions in protecting our natural heritage.

Let us commit to championing biodiversity, fostering sustainable development, and ecological harmony.

Foreword



Mariyam Nazra
Resident Representative a.i.
UNDP India

Nature is the backbone of a strong global economy. According to the World Economic Forum, more than half of the world economic output or GDP amounting to US$ 44 trillion relies on biodiversity and the ecosystems services that it provides.

Businesses depend on nature for everything, from basic materials like water, food, and fibers to the genetic building blocks of medicines. But that is not all. Healthy ecosystems also pollinate our crops, regulate water supplies, and keep our soil fertile, all of which are essential for businesses to have the raw materials they need. By protecting nature, businesses can avoid problems like resource shortages, disruptions in their supply chains, and rising operational costs.

Today, we face an annual funding gap between US$ 599 - 824 billion to achieve our global biodiversity goals under the Kunming Montreal Global Biodiversity Framework. The private sector has an important role in helping close this finance gap.

One way to achieve this is through Corporate Social Responsibility (CSR), leveraging the private sector's efforts to contribute to social and environmental causes beyond its core business activities. In India, CSR has been mandatory since 2013, opening doors for businesses to play a pivotal role in protecting biodiversty. Today, we have several examples from across the country where corporates have played a role in biodiversity conservation, be it restoring natural habitats, protecting wildlife, raising citizen awareness or supporting communities that live in harmony with nature.

However, the alarming rate of biodiversity loss necessitates a deeper commitment from all stakeholders, including large companies. While these efforts are commendable, a more comprehensive and accelerated approach is needed to address this critical environmental challenge including the deleterious impacts of business action on biodiversity. We hope this publication will encourage more private companies and enterprises to take the initiative to protect our biodiversity and the communities that depend on them.

UNDP continues to work with the government and industry stakeholders to achieve our shared vision of 'living in harmony with nature'.



Message



Mahendra Singhi

Chair, FICCI Environment and Climate Change Committee and

Member of the Board of Directors and Strategy Advisor, Dalmia Cement (Bharat) Limited

Biodiversity conservation ensures resilience and stability of the ecosystem, animals and mankind because it provides essential services like Clean Air, Water, and fertile soil, which are essential for our life, healthy planet and thriving economy.

According to the Natural History Museum's Biodiversity Intactness Index (BII), India's biodiversity declined by 3.12 percentage points between 1970 and 2014. This underscores the urgency of our efforts to halt and reverse biodiversity loss. For thriving biodiversity, we need to protect the critical ecosystems like forests, wetlands and oceans by implementing sustainable agriculture, forestry, and sustainable food habits to exert least pressure on the environment.

It is with great pleasure and a sense of responsibility that I introduce this compendium, a testament to our collective commitment to environmental stewardship and sustainable practices. The compilation of conservation stories is a testament to the concerted efforts and innovative approaches undertaken by Indian businesses to integrate biodiversity conservation into their operational ethos.

As we navigate the complexities of climate change and environmental degradation, it is imperative that we continue to innovate and lead by example. I extend my heartfelt gratitude to all the stakeholders who have created these success stories and urge others to draw inspiration from these exemplary practices.

Together, let us continue to lead by example, inspire change, and drive meaningful impact in our journey towards a more sustainable and biodiverse world.



EXECUTIVE SUMMARY

Biological diversity, as defined in the Convention on Biological Diversity, encompasses the variety among living organisms from various habitats, including terrestrial, marine, and other aquatic ecosystems, along with their associated ecological systems. Biodiversity sustains economies, livelihoods, and overall human well-being by providing essential resources and ecosystem services. However, biodiversity loss and ecosystem collapse pose significant global risks, ranking third among the top ten long-term risks according to the World Economic Forum Global Risks Report 2024. Alarmingly, up to 1 million species are facing extinction, emphasizing the urgent need for conservation efforts.

Despite commitments to biodiversity conservation, full achievement of the Aichi Biodiversity Targets by 2020 was not realized. Challenges included ambiguous targets and insufficient political will and resources for effective implementation. Looking forward, the Post-2020 Framework aims to craft a transformative framework to reverse nature loss by 2030.

Businesses are increasingly recognizing the vital connection between biodiversity and their long-term success. Healthy ecosystems provide resource security, mitigate climate change risks, and enhance brand reputation among environmentally conscious consumers. Cost savings, improved brand image, and enhanced resilience are among the benefits of biodiversity conservation for businesses.

This report explores the interplay between business and biodiversity, providing insights into global and national biodiversity conservation efforts. It outlines key legislations, guidelines, and frameworks, equipping businesses with information to integrate biodiversity conservation into their operations. Additionally, the report showcases real-world examples and strategies for businesses to minimize their environmental impact and contribute to conservation efforts.

By acknowledging the significance of biological diversity and adopting sustainable practices, businesses can become responsible stewards of the environment and contribute to a future where economic growth and biodiversity thrive together.



1 INTRODUCTION

Biological diversity, as defined in Article 2 of the Convention on Biological Diversity, encompasses the variety among living organisms from various habitats, including terrestrial, marine, and other aquatic ecosystems, along with their associated ecological systems. This includes variety within species, between species, and among ecosystems. Biodiversity sustains our economies, livelihoods, and overall well-being of humans by offering essential resources for food, materials, medicine, energy, and other necessities. Additionally, it delivers vital ecosystem services like water & water shed management provision, natural disaster mitigation, and climate change resilience. These resources and services are integral to the ongoing prosperity of humankind. Biodiversity is pivotal in advancing the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals, with many objectives centred around biodiversity conservation and sustainable use.

According to the World Economic Forum Global Risks Report 2024, biodiversity loss and ecosystem collapse rank third among the top ten global long-term risks (next 10 years).

According to the "Global Assessment Report on Biodiversity and Ecosystem Services 2019" by IPBES, Earth is estimated to host 8 million species, including 5.5 million insect species. Alarmingly, up to 1 million species are facing extinction, with many at risk within decades. Among the threatened species are 40% of amphibians, 33% of reef-forming corals, and over a third of marine mammals.

Despite significant commitments by governments and stakeholders, full achievement of the Aichi Biodiversity Targets by 2020 was not realized, with only six being partially attained. Challenges included ambiguous targets and insufficient political will, monitoring mechanisms, and financial resources for effective implementation. Looking forward, the Post-2020 Framework endeavours to learn from these experiences and craft a transformative framework. The aim is to steer the world towards a trajectory that reverses nature loss by 2030.

Biodiversity is a fundamental component of long-term business survival as achieving the conservation and sustainable use of biodiversity provides for various business opportunities. With consumers increasingly favouring eco-friendly products, companies are integrating environmental considerations into their operations. By managing biodiversity, businesses mitigate risks associated with rising costs and disruptions in the value chain. Moreover, the private sector's resources and influence present significant opportunities for innovative conservation efforts. These may involve funding large-scale conservation programs or leveraging branding to raise awareness and support ongoing initiatives.

1.1 Business and Biodiversity: A Shared Future

Businesses are increasingly recognizing the vital connection between biodiversity and their long-term success. Healthy ecosystems and thus biological diversity serve as a robust foundation for ensuring resource security, mitigating risks associated with climate change, and cultivating a positive reputation among environmentally conscious consumers. Furthermore, ecosystems provide a range of invaluable services, including provisioning services (such as raw materials), regulating services (like waste management and climate regulation), supporting services (such as pollination), and recreational services (including tourism and cultural value). Recognizing the intrinsic dependency of businesses on biodiversity for both value and resilience is pivotal for long-term sustainability. By understanding and leveraging ecosystem services, businesses can optimize their environmental footprint and contribute to conservation efforts. This approach offers several advantages:

- Cost Savings: By reducing the need for resource extraction and pollution control measures, businesses can achieve lower operational costs.
- Improved Brand Image: Biodiversity conservation can enhance a company's brand reputation as consumers increasingly favour eco-conscious brands.
- Enhanced Resilience: Healthy ecosystems provide resilience against environmental challenges like climate change, promoting long-term sustainability for businesses.

The growing awareness of business impacts on ecosystems and biodiversity is prompting businesses to measure and manage associated risks, while also scaling up mitigation, offsetting, and sustainable use approaches. Alongside these risks, opportunities arise to tap into new markets and business models.

1.2 Why This Report Matters

This report/compendium explores the intricate interplay between business and biodiversity,

offering a comprehensive overview of global and national biodiversity conservation efforts. It provides insights into key legislations, guidelines, and frameworks pertaining to biodiversity conservation in India. Serving as a valuable resource, it equips businesses with the necessary information to integrate biodiversity conservation into their operations and outlines strategies to achieve this goal. Additionally, the report highlights best practices and case studies from prominent businesses operating in India, showcasing successful approaches to biodiversity conservation.

1.3 What You'll Find Inside

This report/compendium brings forth following aspects of biodiversity and business:

- The evolution of global and national efforts for biodiversity conservation.
- Key legislations and guidelines governing biodiversity conservation and management.
- Business and biodiversity engagement
- Real-world examples of businesses successfully integrating biodiversity considerations into their operations.
- Practical strategies companies can adopt to minimize their environmental impact and contribute to conservation efforts.

Biological diversity serves as the cornerstone of a vibrant planet and a flourishing business ecosystem. By acknowledging its significance and incorporating sustainable practices into their operations, businesses can play a pivotal role in fostering a future where economic prosperity and environmental health are mutually reinforcing. By exploring these topics, the report/ compendium aims to empower businesses to become responsible stewards of the environment and contribute to a future where both economic growth and biodiversity can thrive.





2 PRESENT BIODIVERSITY FRAMEWORK

The imminent loss of over a million species highlights the dire need for conservation strategies that maximize the conservation of biodiversity to sustain its numerous benefits to human well-being. Preserving genetic diversity i.e., biological diversity is both a matter of insurance and an investment. It is necessary to sustain and improve agricultural, forestry, and fisheries production, to keep future options open and to act as a buffer against environmental and climate change. It also serves as the foundation for scientific and industrial innovation, besides a moral responsibility towards future generations also makes its conservation and management necessary. Over the years the concerns around the degradation and loss of biological diversity have been addressed through a variety of international conferences/ summits and accords.

Over the years, considerable advancements have been made in the field of sustainable development and global biodiversity conservation, demonstrating an increasing understanding of the value of biodiversity to human well-being and the necessity of coordinated efforts to manage natural resources sustainably.

Table 1: Evolution of Global biodiversity conservation and management efforts

YEAR	MILESTONE DECISION
1971	The 1971 Convention on Wetlands of International Importance, also known as the **'Ramsar Convention,'** an intergovernmental treaty aimed at conserving the ecological character of wetlands worldwide is signed. It provides the basis for national action to ensure the sustainable development of wetland ecosystems. India became a signatory in 1981.
1972	The **1st United Nations Conference on the Human Environment** held in Stockholm, also known as the Stockholm Conference. The first major international conference addressing environmental issues, lays the groundwork for future biodiversity discussions.
1973	The **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** is adopted. Its primary objective is to regulate and monitor the international trade in endangered species to ensure that it is sustainable and does not harm the conservation status of the species involved.
1979	The **Bonn Convention or Convention on Conservation of Migratory Species** (CMS) is adopted. Its primary objective is the protection of migratory species and their natural habitat. It functions under the aegis of the United Nations Environment Programme and is the sole international treaty pertaining to migratory species.
1987	The **Brundtland Report**, also known as **Our Common Future**, is published. This report, commissioned by the United Nations World Commission on Environment and Development, introduces the concept of sustainable development and describes how to achieve it.
1992	The United Nations Conference on Environment and Development (UNCED), also known as the **'Earth Summit or Rio Summit'**, held in Rio de Janeiro, Brazil. It aims to focus on the impact of human socio-economic activities on the environment. Major outcomes: **Agenda 21**, the **Rio Declaration** and its 27 universal principles (approved & adopted), the **United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity** (signed); and the Declaration on the principles of forest management.
1994	The **Global Environment Facility (GEF)** is established. It is the world's largest fund dedicated to supporting developing countries and countries in transition to meet the objectives of international treaties and agreements of protecting the global environment, including biodiversity.
2000	The Millennium Summit (New York, USA) adopts the **Millennium Declaration**, which has eight **Millennium Development Goals (MDGs)**. It included goals such as halting the loss of biodiversity which is closely linked to environmental sustainability.
2000	The **Millennium Ecosystem Assessment (MA)** is launched by the United Nations, as the first assessment on ecosystem changes and their impact on human well-being. It offers a state-of-the-art scientific assessment of the condition and trends of the world's ecosystems, as well as the services they provide (e.g., food, clean water, forest products, flood control, and natural resources). It also provides the ways to enhance, preserve, or restore ecosystems for their sustainable usage. Providing scientific evidence for policymakers to integrate biodiversity into decision-making.
2010	The **Nagoya Protocol** on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity is adopted.
2011	The Conference of the Parties (COP) to the CBD adopts the **Strategic Plan for Biodiversity 2011-2020: Aichi Biodiversity Targets**, a set of 20 time-bound targets for biodiversity conservation by 2020. The plan provides an overarching framework for biodiversity conservation & management for global biodiversity conventions as well as UN bodies and all partners engaged. The UN General Assembly declares **2011-2020 the UN Decade on Biodiversity.**

2012	The **United Nations Conference on Sustainable Development** in Rio held, also known as **Rio+20**. Sustainable development issues are discussed, including biodiversity conservation for a clear and practical step for sustainable development implementation.
2012	The **Inter-governmental Platform on Biodiversity and Ecosystem Services (IPBES)** is established as an independent intergovernmental body to assess the state of biodiversity and ecosystem services worldwide. It also provides policymakers with scientific information to support better decision-making. Thus, acting as a catalyst for a positive interface between science and policy on biodiversity related issues.
2015	At the United Nations Sustainable Development Summit, a new plan called **Transforming Our World: The 2030 Agenda for Sustainable Development by 2030** is adopted. It includes a declaration, 17 sustainable development goals and 169 targets. This Agenda serves as a holistic plan of action, balancing economic, social, and environmental dimensions of sustainable development for the benefit of people, planet, and prosperity.
2015	At the UN Climate Change Conference (COP21) in Paris, France, a legally binding international treaty **Paris Agreement** is adopted. The Paris Agreement holds indirect relevance to biodiversity conservation due to complex and intricate connections between climate change and biodiversity.
2021	The **UN Decade on Ecosystem Restoration (2021-2030)**, led by United Nations Environment Programme (UNEP) and the Food and Agriculture Organization (FAO) is launched. This decade aims to scale up the protection and restoration/ revival of all ecosystems, including forests, grasslands, wetlands, and oceans.
2022	At the 15th Conference of Parties to the UN Convention on Biological Diversity, **Kunming-Montreal Global Biodiversity Framework (GBF)** is adopted. It includes four overarching long-term goals that are to be achieved by 2050. Protecting ecosystems and species is at the heart of these goals. It aims conserve 30% of land, sea, and inland waters, restore 30% of degraded ecosystems, halve the introduction of invasive species, and reduce harmful subsidies by $500 billion annually by 2030.

2.1 Global Steps Towards Addressing Biodiversity Loss

Earth's biological resources are essential to human economic and societal development. Consequently, there is a growing understanding that biological diversity is an asset of tremendous value to current and future generations. However, there has never been a greater threat to ecosystems and species than there is now. As a result of Anthropogenic activities, the present rate of species extinction across the globe is alarming.

In this backdrop, the Ad Hoc Working Group of Experts on Biological Diversity later known as *Intergovernmental Negotiating Committee* was convened by the United Nations Environment Programme (UNEP) in November 1988 to explore the necessity of an international treaty on biological diversity.

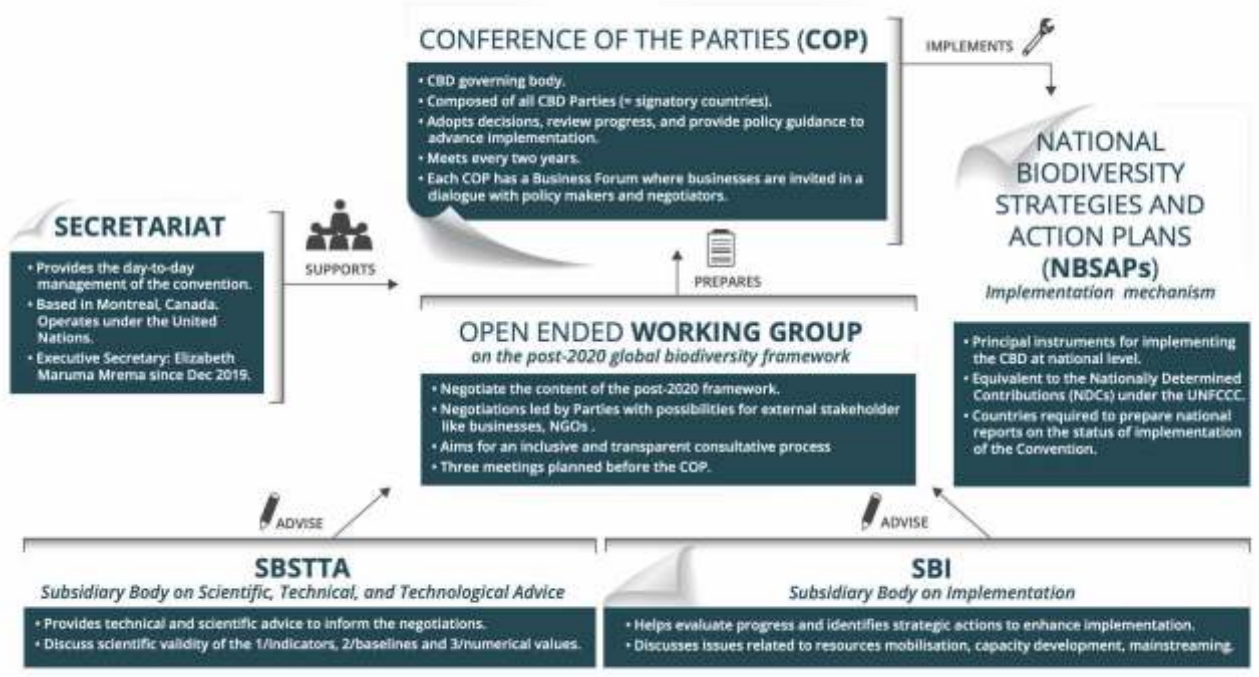
2.1.1 Convention on Biological Diversity

The ***Convention on Biological Diversity (UN CBD)*** was adopted during the **1992 Rio Earth Summit**. It aims to sustainably use biological resources and conserve Earth's biodiversity through an all-encompassing approach rather than a sector-specific one. It represents a significant advancement toward the conservation of biological diversity, the sustainable use of its constituents, and the just and equitable sharing of benefits associated with the utilization of genetic resources.

The convention has 3 main objectives:

- The conservation of biological diversity.
- The sustainable use of the components of biological diversity.
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

Figure 1 : CBD Structure



(Source: A Business Guide to The United Nations Convention on Biological Diversity, ICCWBO)

The Conference of the Parties (COP), which serves as the convention's governing body, promotes the convention's implementation via its decisions at its regular meetings. To date, the COP has convened 15 ordinary meetings and one extraordinary meeting, which was held in two parts to establish the Biosafety Protocol. The COP convened yearly ordinary meetings from 1994 to 1996. Since 2000, due to a modification in the rules of procedure, the CBD COP convenes its ordinary meeting every two year.

2.1.2 Conference of the Parties (COP) to CBD

The COP presidency is held by the host country, usually the Minister of Environment. Assisted by the CBD Secretariat, the President oversees the meeting with support from the Bureau, consisting of ten Parties including the President or a designated representative, and two representatives elected from each UN region.

As of Feb 2024, there are 196 Parties (168 Signatures) to the Convention on Biological Diversity. India became a party to the convention by ratification in year 1994.

The Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) convenes regularly to assess progress, establish objectives, and formulate strategies to combat biodiversity loss. Below are highlights of key decisions made during different COP sessions:

COP 10 (Nagoya, Japan, 2010)

- **Aichi Biodiversity Targets:** Set out 20 ambitious targets for biodiversity conservation to be achieved by 2020, covering habitat loss reduction, protected areas expansion, sustainable resource use, and access to genetic resources.
- **Strategic Plan for Biodiversity 2011-2020:** Adopted a strategic plan to guide global efforts towards achieving the Aichi Targets.
- **Business Engagement:** Highlighted the importance of business engagement in biodiversity conservation and encouraged the development of mechanisms for corporate participation. (Decision X/21)

COP 11 (Hyderabad, India, 2012)

- **Resource Mobilization:** Recognized the critical need for adequate and sustained funding to to support the implementation of the CBD and achievement of the Aichi Targets.
- **Capacity Building:** Highlighted the imperative for capacity building in developing nations to bolster their abilities in implementing the CBD and managing biodiversity sustainably, focusing on strenthening institutional frameworks, technical expertise, and knowledge sharing.
- **Sustainable Use of Biodiversity:** Advocated for the sustainable utilization of biodiversity, striving to harmonize human requirements with conservation efforts.

COP 13 (Cancun, Mexico, 2016)

- **Aichi Targets Review:** Acknowledged the slow progress towards achieving the Aichi Targets and commenced a review process to evaluate progress and identify challenges.
- **Post-2020 Biodiversity Framework:** Initiated deliberations on developing a post-2020 global biodiversity framework to follow the Aichi Targets and guide future conservation efforts.
- **Mainstreaming Biodiversity:** Emphasized integrating biodiversity concerns into all pertinent sectors and national development strategies.

COP 15 (Kunming, China, 2022)

- **Kunming Declaration:** Underscores the urgency of addressing biodiversity loss and emphasizes the necessity for a transformative approach.
- **Post-2020 Global Biodiversity Framework:** Delineating ambitious goals and targets for biodiversity conservation by 2030, with a focus on area-based conservation, resource mobilization, capacity building, and transformative change.

The CBD framework is important for businesses as it provides guidance on how to reduce their negative impacts on biodiversity and to support its conservation. Businesses can use the CBD framework to:

- Identify and assess their impacts on biodiversity.
- Develop and implement biodiversity strategies and action plans.
- Access information and resources on biodiversity.

The CBD framework also includes a number of provisions that are specifically designed to engage businesses in biodiversity conservation. For example, the CBD framework includes the Business and Biodiversity Initiative, which is a global partnership that aims to promote biodiversity conservation and sustainable use in the business sector.

The CBD continues to adapt and evolve to address emerging challenges like climate change and biodiversity loss. It remains a key framework for international cooperation on biodiversity conservation and sustainable use.

2.1.3 Supplementary Agreements to CBD

The CBD has two supplementary agreements called Protocols in addition to the strategic frameworks (i.e., the Strategic Plan for Biodiversity 2011-2020, finalized in 2020, and the Post-2020 Global Biodiversity Framework, adopted at COP15 in 2022) of the Convention that set the global ambition and strategy to achieve the three convention objectives.

These protocols have an impact on business activities in the areas below:

- **Cross-border movements of genetically modified organisms:** The 2003 Cartagena Protocol on Biosafety governs the transnational transfer of living modified organisms developed through modern biotechnology.
- **Use of genetic resources in R&D:** The 2014 Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising (ABS) from their Utilization establishes a framework for international regulation on procedures for gaining access to genetic resources and for sharing benefits resulting from their use (mainly research and development). It also provides guidance on domestic users' adherence to ABS regulations in provider countries.



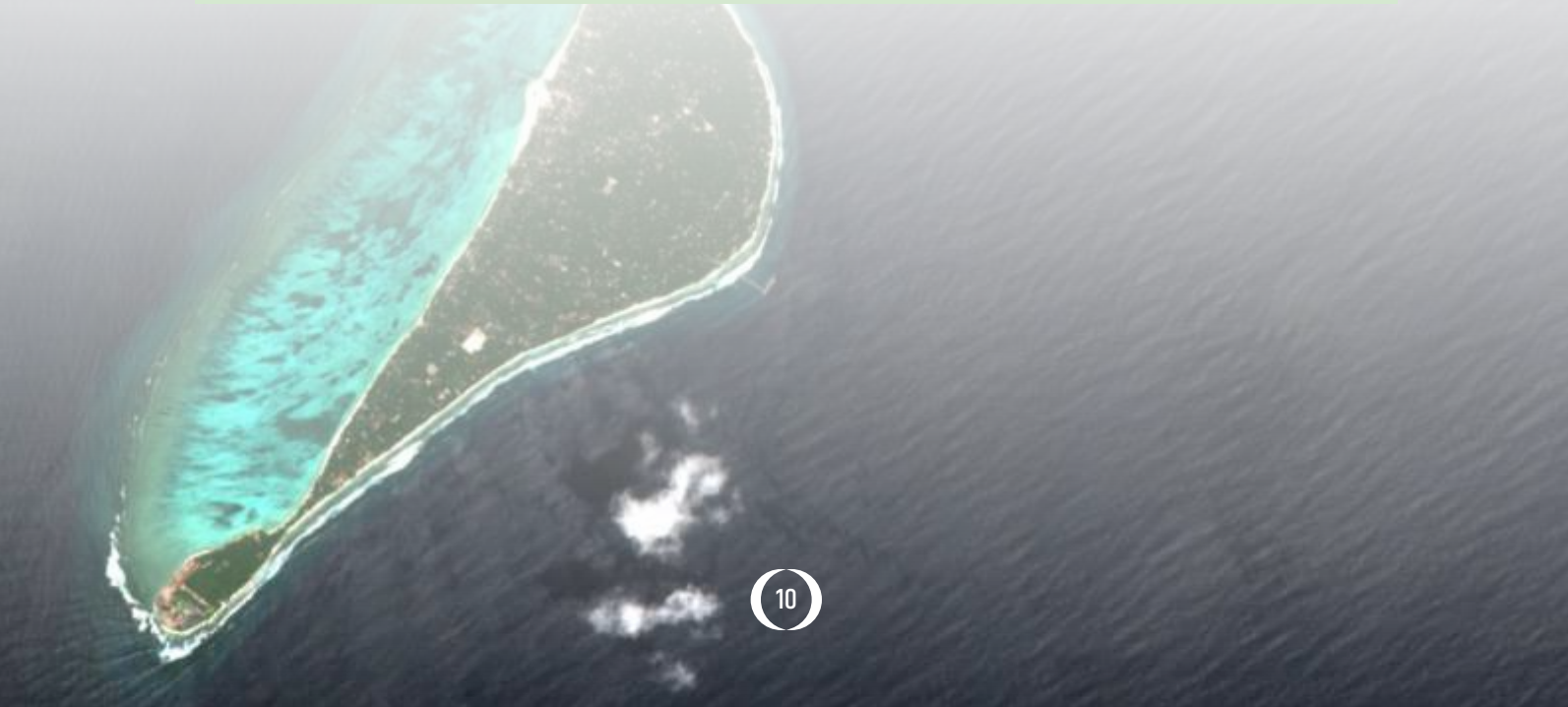
STRATEGY PLAN 2011- 2020

The Strategic Plan for Biodiversity 2011–2020, endorsed at COP-CBD in 2010, aimed to facilitate effective biodiversity action by all stakeholders, while providing a flexible framework for national and regional targets. Additionally, it was recognized by biodiversity-related conventions like the Ramsar Convention for its significant contribution to their objectives. This highlighted the interconnectedness of global efforts in conserving and sustainably managing biodiversity.

The plan encompasses five strategic goals, each aimed at addressing specific aspects of biodiversity conservation and sustainable use. These goals are accompanied by 20 Aichi Biodiversity Targets, which provide measurable objectives to guide and assess progress towards achieving the overarching aims of the plan.

Strategic Goal A	Strategic Goal B:	Strategic Goal C:	Strategic Goal D:	Strategic Goal E:
Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.	Reduce the direct pressures on biodiversity and promote sustainable use.	To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.	Enhance the benefits to all from biodiversity and ecosystem services.	Enhance implementation through participatory planning, knowledge management and capacity building.

Together, these strategic goals and Aichi Targets served as a roadmap for global action on biodiversity, outlining key areas of focus and indicating the desired outcomes over the designated timeframe.



2.1.4 Key Business Engagement Decisions at CBD

COP	Key Business-related Decision
COP 3 (Buenos Aires, Argentina-1996)	**Decision (III/6)** Requested the Executive Secretary with exploring ways to engage the private sector in advancing the Convention's goals.
COP 5 (Nairobi, Kenya–2000)	**Decision (V/11)** resolved involvement of the private sector on the agenda of the CoP and integration into its the sectorial and thematic items.
COP 6 (The Hague, Netherlands–2002)	Under Goal 4.4 of the former Strategic Plan for CBD, the engagement of key actors and stakeholders, including the private sector, was mandated to facilitate partnership in implementing the Convention and embedding biodiversity considerations into their sectoral and cross-sectoral plans, programs, and policies.
COP 8 (Curitiba, Brazil-2006)	First stand-alone decision related to private-sector engagement. **Decision (VIII/17)** urged national focal points to communicate the importance of biodiversity to companies, encouraging them to adopt practices supporting national biodiversity strategies, and include private sector in national delegations and technical expert groups. Businesses invited to develop the business case for biodiversity, undertake voluntary commitments to CBD, promote good practices, and encouraging alignment of policies with the Convention's objectives.
COP 9 (Bonn, Germany-2008)	**Decision (IX/26)** expanded on previous calls for Parties to increase business engagement and awareness of the biodiversity business case.
COP 10 (Nagoya, Japan-2010)	**Decision (X/21)** builds on past COPs and strengthens private sector engagement in implementing biodiversity targets.
COP 11 (Hyderabad, India-2012)	**Decision (XI/7)** which led to new discussion on business and biodiversity, whilst reinforcing existing decisions.
COP 12 (Pyeongchang, Republic of Korea-2014)	**Decision (XII/10)** welcomed the pioneering work on business engagement already undertaken by various Parties. Encouraged support and cooperation with the Global Partnership on Business and Biodiversity to help businesses report on their mainstreaming efforts.
COP 13 (Cancun, Mexico-2016)	**Decision (XIII/3)** urges Parties to establish national or regional initiatives within the Global Partnership on Business and Biodiversity, promoting businesses' generation and assessment of information regarding their impacts on ecosystems.
COP 14 (Sharm El-Sheikh, Egypt-2018)	**Decision XIV/3** reinforces decisions made at COP13 and lays the groundwork for a long-term approach to mainstreaming biodiversity conservation within the mining, infrastructure, manufacturing, and processing sectors.

2.1.5 Business Reporting Recommendations on Biodiversity

The realm of impacts and dependencies of businesses on biodiversity often lacks systematic data and comprehensive reporting. Addressing this gap, the twelfth Conference of Parties (COP) (decision XII/10) sought to enhance comprehension of the existing landscape concerning business reporting on biodiversity and ecosystem functions and services. This assessment involved a thorough examination of current schemes and research in this domain, culminating in the formulation of an initial framework of recommendations for reporting on biodiversity known as a Typology of Actions for business-related reporting.

The report submitted to the Subsidiary Body on Implementation (SBI 1) comprised a review of prevailing government and stock exchange mandates regarding reporting, along with an assessment of existing

reporting mechanisms tailored to biodiversity-related issues for businesses. Subsequent research involved examining sustainability reports from various businesses to evaluate the extent of biodiversity reporting by businesses. This led to the refinement of a more streamlined typology of actions based on both the research findings and existing reporting frameworks like the Global Reporting Initiative (GRI).

2.2 The Global Biodiversity Framework for Managing Biodiversity Through 2030

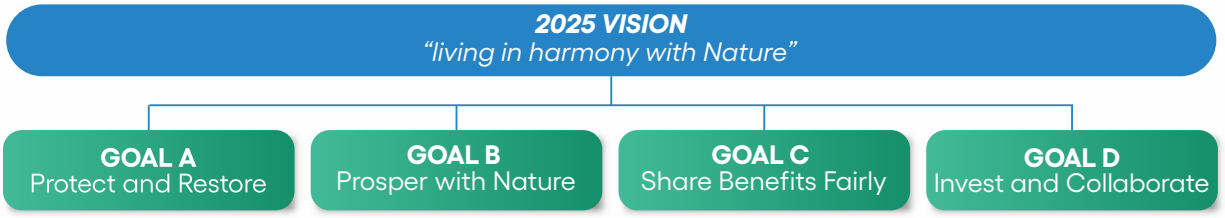
After extensive consultation and negotiation, the Kunming-Montreal Global Biodiversity Framework (GBF) was adopted during the fifteenth Conference of the Parties (COP 15). This landmark plan presents an ambitious plan towards achieving global harmony with nature by 2050.

Building upon the Strategic Plan for Biodiversity 2011-2020 and insights from the IPBES Global Assessment Report on Biodiversity and Ecosystem Services, the GBF aims to halt and reverse biodiversity loss through urgent and transformative action. By fully implementing the CBD's objectives and protocols, it seeks to establish a balanced relationship between humanity and nature.

The framework promotes collaboration and partnerships among diverse stakeholders, aligning with the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs). With a vision of a harmonious world by 2050, the GBF's mission until 2030 is to urgently combat biodiversity loss, restore nature, and promote sustainable use and conservation. This entails providing the necessary means of implementation, such as resources, capacity-building, technology transfer, and fostering cooperation among governments, civil society, indigenous peoples, local communities, and the private sector.

2.2.1 The Key Elements of GBF

The GBF puts forth four long-term goals for 2050 related to the 2050 Vision for biodiversity:



GOAL A

- Preserve, enhance, or restore ecosystem integrity, connectivity, and resilience, expanding natural ecosystems significantly by 2050.
- Halt human-induced extinction of known threatened species and reduce overall extinction risk tenfold by 2050.
- Increase the abundance of native wild species to healthy, resilient levels.
- Safeguard genetic diversity within wild and domesticated species populations, ensuring their adaptive capacity.

GOAL B

- Sustainably use and manage biodiversity by 2050.
- Value, maintain, and enhance nature's contributions to people, including ecosystem functions and services.
- Restore declining ecosystem functions and services.
- Support sustainable development for present and future generations.

GOAL C

- Ensure fair and equitable sharing of benefits (monetary and non-monetary) from genetic resources and digital sequence information by 2050.
- Include indigenous peoples and local communities in benefit-sharing arrangements.
- Increase benefits from genetic resources utilization and protect traditional knowledge associated with genetic resources.
- Contribute to biodiversity conservation and sustainable use in accordance with international agreements on access and benefit-sharing.

GOAL D

- Secure and make accessible means of implementation for the Kunming-Montreal global biodiversity framework by 2050.
- Ensure equitable access to financial resources, capacity-building, and technology transfer.
- Prioritize support for developing countries, least developed countries, small island developing States, and countries in transition.
- Close the biodiversity finance gap of $700 billion per year progressively.
- Align financial flows with the Kunming-Montreal Global Biodiversity Framework and the 2050 Vision for Biodiversity.

Protecting ecosystems and species is at the heart of these goals, with a focus on stopping human-caused extinctions, using biodiversity responsibly, sharing benefits fairly, and tackling the $700 billion annual funding gap.

The framework includes 23 action-oriented global goals requiring urgent action over the decade leading up to 2030. The culmination of these efforts will facilitate the attainment of outcome-oriented goals for 2050. Actions to realize these objectives must be executed consistently and in alignment with the Convention on Biological Diversity and its Protocols, as well as other relevant international obligations, while taking into consideration national circumstances, priorities, and socioeconomic situations.



2030 VISION
"To put nature on a path of recovery"
23 targets for 2030

1 Reducing threats to biodiversity

TARGET 1: Plan and manage all areas to reduce biodiversity loss.

TARGET 2: Restore 30% of all degraded ecosystems.

TARGET 3: Conserve 30% of Land, Waters and Seas.

TARGET 4: Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts.

TARGET 5: Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species.

TARGET 6: Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact.

TARGET 7: Reduce Pollution to Levels That Are Not Harmful to Biodiversity.

TARGET 8: Minimize the Impacts of Climate Change on Biodiversity and Build Resilience

2 Meeting people's needs through sustainable use & benefit-sharing

TARGET 9: Manage Wild Species Sustainably to Benefit People.

TARGET 10: Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry.

TARGET 11: Restore, Maintain and Enhance Nature's Contributions to People.

TARGET 12: Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity.

TARGET 13: Increase the Sharing of Benefits from Genetic Resources, Digital Sequence Information and Traditional Knowledge.

3 Tools and solutions for implementation and mainstreaming

TARGET 14: Integrate Biodiversity in Decision-Making at Every Level.

TARGET 15: Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts.

TARGET 16: Enable Sustainable Consumption Choices to Reduce Waste and Overconsumption.

TARGET 17: Strengthen Biosafety and Distribute the Benefits of Biotechnology.

TARGET 18: Reduce Harmful Incentives by at Least $500 Billion per Year and Scale Up Positive Incentives for Biodiversity.

TARGET 19: Mobilize $200 Billion per Year for Biodiversity From all Sources, Including $30 Billion Through International Finance.

TARGET 20: Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity.

TARGET 21: Ensure That Knowledge Is Available and Accessible to Guide Biodiversity Action.

TARGET 22: Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all.

TARGET 23: Ensure Gender Equality and a Gender-Responsive Approach for Biodiversity Action

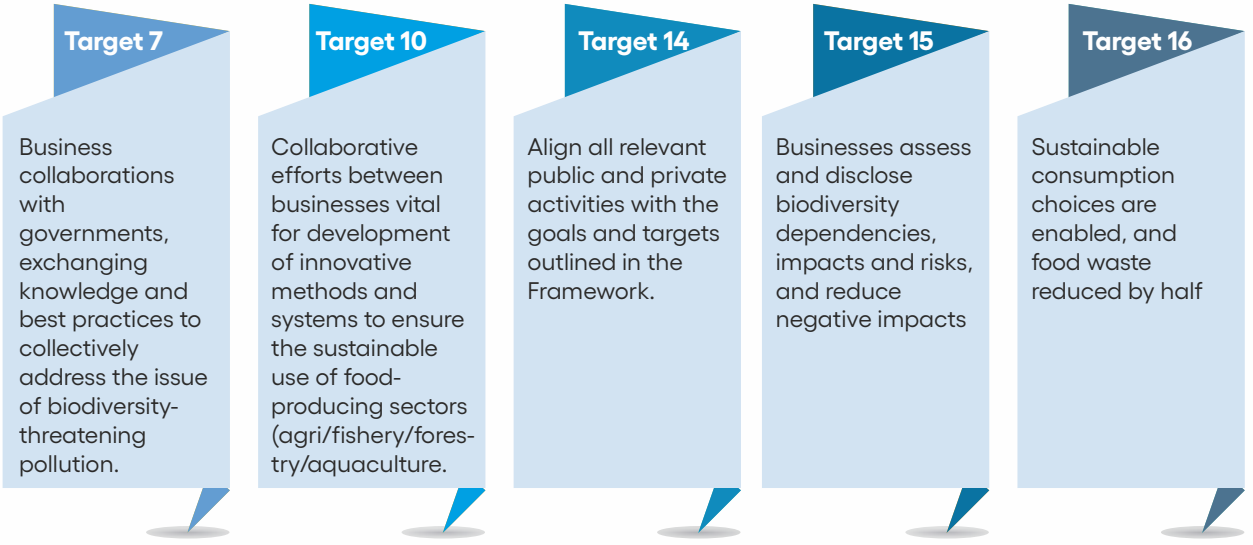
The guidance material for each target within the Kunming-Montreal Global Biodiversity Framework offers a comprehensive overview by introducing key terms, outlining implications for national target setting, and presenting key points and guiding questions for consideration during the process. It also includes adopted indicators to track progress and lists resources to aid in national target setting and implementation. This material undergoes periodic updates based on inputs from Parties and partner organizations to reflect experiences with its application.

The GBF goes beyond guiding national efforts. It also sets out expectations and opportunities for businesses to play a crucial role in halting biodiversity loss and achieving a sustainable future. Through

collaboration and conscious action, businesses can be the champions of change, driving us towards a world where nature thrives, and we all reap the benefits.

2.2.2 Business Targets in the GBF

The Kunming-Montreal Global Biodiversity Framework recognizes that businesses hold a pivotal role in the quest for a thriving and balanced ecosystem. The framework outlines five targets specifically addressing Business and Biodiversity. It acknowledges that businesses, irrespective of size, location, or sector, are impacted by and depend on ecosystem services and biodiversity. Incorporating proactive biodiversity management into core business strategies can present significant opportunities for profit enhancement. Conversely, neglecting biodiversity considerations can incur substantial costs.



Target 15 of the Framework holds significant relevance for businesses, as it focuses on promoting three key policy initiatives. Firstly, it mandates transnational companies and financial institutions to consistently monitor, assess, and transparently disclose their biodiversity-related risks, dependencies, and impacts. Secondly, it emphasizes providing consumers with necessary information to encourage sustainable consumption patterns. Lastly, it requires reporting on compliance with access and benefit-sharing regulations. Given its direct link to businesses and finance, cooperation from the financial sector is essential to fulfill this aspect of the Framework.

In addition to these few other targets also capture the Business - Biodiversity aspect:

- **Target 17** urges businesses to take responsibility for their pollution, reducing harmful substances like excess nutrients, pesticides, and plastic waste.
- **Target 19** recognizes the importance of fair benefit-sharing, encouraging businesses to be part of the solution and contribute to the well-being of indigenous peoples and local communities.
- **Target 21** empowers businesses to make informed decisions, arming them with the best data and information to promote biodiversity-friendly practices and innovations.
- **Target 22** embraces inclusivity and diversity, urging businesses to ensure everyone's voice is heard in the decision-making process. This means standing up for women, indigenous groups, and vulnerable communities, protecting their rights and perspectives.

Overall, the Kunming-Montreal Global Biodiversity Framework represents a critical commitment to tackle the biodiversity crisis and safeguard the Earth's natural resources. Achieving its goals requires collaborative efforts from all sectors of society to ensure a sustainable future for the planet.

2.3 Other International Efforts

I. Global Partnership on Forest and Landscape Restoration (GPFLR)

The GPFLR, initiated by IUCN in 2003, is a global network that brings together governments, organizations, communities, and others with a shared objective: to restore lost and degraded forests and their surrounding landscapes worldwide. In particular, the GPFLR aligns with the Bonn Challenge, which aims to restore 150 million hectares of deforested and degraded land by 2020 and 350 million hectares by 2030.

II. World Forestry Congress and Seoul Declaration

The XV (15th) World Forestry Congress (WFC) 2022, hosted in Seoul by the Korea Forest Service and FAO, marked the second WFC held in Asia, following Indonesia's hosting of the first congress in 1978.

Theme: Building a Green, Healthy, and Resilient Future with Forests.

The WFC serves as the largest gathering of the world's forestry sector, convening every six years since 1926 under FAO auspices and organized by the host country's government. It provides a platform for knowledge and experience sharing.

The Seoul Declaration emphasized the shift toward a circular bioeconomy, where materials, chemicals, and energy originate from renewable biological resources, along with the goal of achieving climate neutrality.

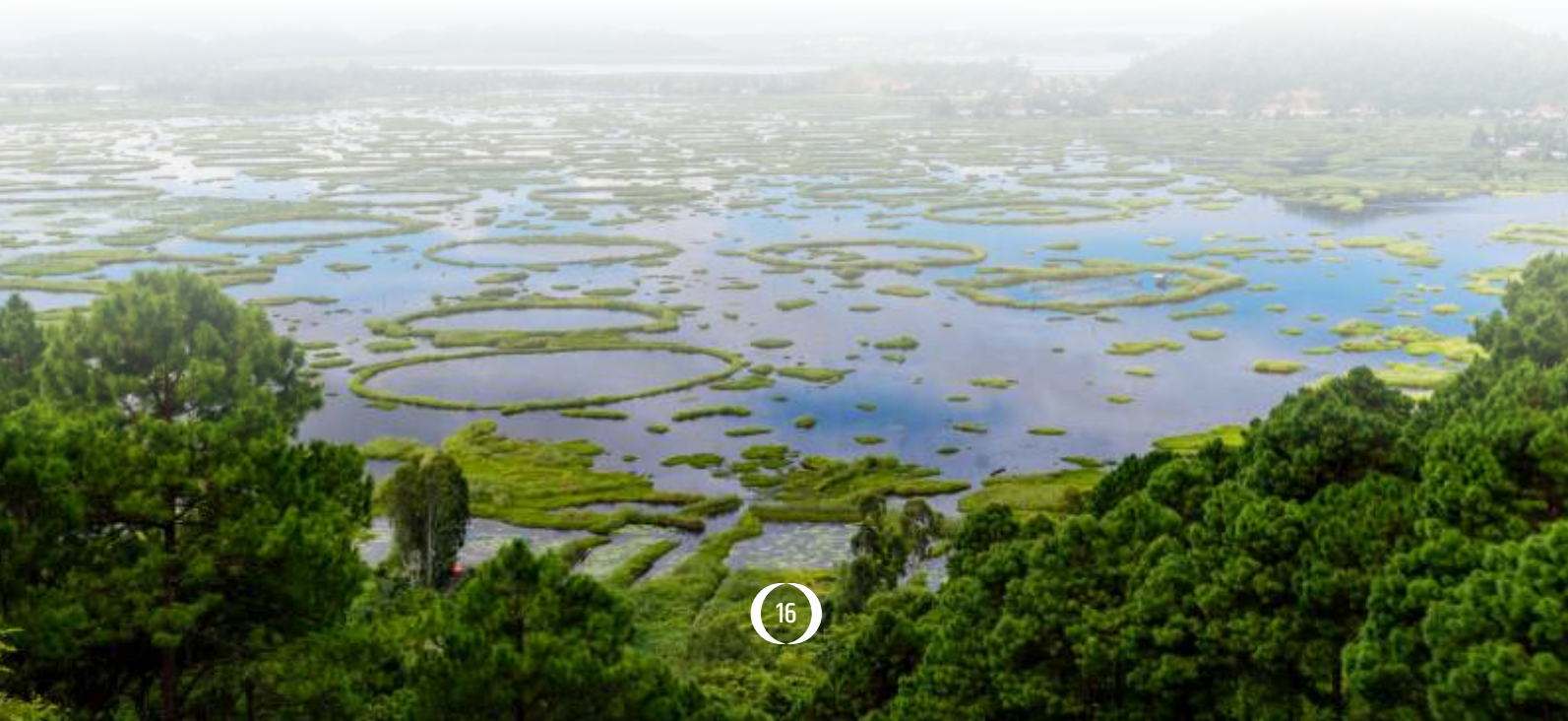
III. Initiatives By The UN

A. United Nations Strategic Plan for Forests 2017–2030

Developed at the UN Forum on Forests in 2017 and endorsed by the UN General Assembly, it comprises six Global Forest Goals and 26 corresponding targets to achieve by 2030. These goals and targets are voluntary and applicable globally. One notable target is to expand the global forest area by 3% by 2030, equating to an increase of 120 million hectares.

B. Decade on Ecosystem Restoration

The United Nations General Assembly designated 2021–2030 as the Decade on Ecosystem Restoration, with collaborative efforts from UNEP, FAO, and various partners worldwide. The initiatives planned for this period aim to contribute to the achievement of targets outlined in several international agreements and conventions, including the 2030 Agenda for Sustainable Development, the Strategic Plan for Biodiversity 2020 (Aichi Targets), the UN Framework Convention on Climate Change, the Paris Agreement, the UN Convention to Combat Desertification and Land Degradation Neutrality (LDN), the Ramsar Convention, the Global Partnership on Forest and Landscape Restoration, the Global Restoration Council, and the UN Strategic Plan for Forests 2017–2030.



C. Biodiversity Finance Initiative (BIOFIN)

Launched by UNDP in 2012, BIOFIN addresses the biodiversity finance gap at the national level, assisting in the implementation of the National Biodiversity Action Plan (NBAP) and advancing progress towards achieving the National Biodiversity Targets (NBTs). In India, BIOFIN is hosted by the National Biodiversity Authority (NBA – MoEFCC), collaborating with relevant State Biodiversity Boards, and receiving technical support from the Wildlife Institute of India (WII) and the National Institute of Public Finance and Policy (NIPFP).

D. UNESCO World Heritage Sites

In 1972, UNESCO adopted the World Heritage Convention, an international treaty aimed at fostering international cooperation to safeguard cultural treasures and natural areas, including those of exceptional biodiversity. Designated sites are recognized for their outstanding universal value, encompassing the protection of both World Cultural Heritage (such as ancient monuments and museums) and Natural Heritage (including biodiversity and geological features).

E. Taskforce on Nature-related Financial Disclosures (TNFD)

The Task Force on Nature-related Financial Disclosures (TNFD) was initiated in 2021 by the United Nations Environment Programme Finance Initiative (UNEP FI) and the Global Canopy. It was established to address the need for a framework to help businesses and financial institutions assess, manage and report on their dependencies and impacts on nature and biodiversity.

TNFD has introduced its beta framework, aimed at assisting businesses in assessing biodiversity risks and opportunities and disclosing their performance. This initiative is anticipated to stimulate investor engagement, mirroring the impact of the Task Force on Climate-Related Disclosures (TCFD).

Taskforce on Nature-related Financial Disclosures (TNFD)

The Taskforce on Nature-related Financial Disclosures (TNFD) is a market-driven, science based global initiative focused on creating a framework for businesses and financial institutions to evaluate, disclose, and address their dependencies, risks, and opportunities associated with nature. These are designed to offer relevant information for decision-making to capital providers and other stakeholders. The Additional Guidance aids organizations in identifying and evaluating their nature-related concerns.

The disclosure recommendations are organized into four pillars, in alignment with the Task Force on Climate-related Financial Disclosures (TCFD) and the International Sustainability Standards Board (ISSB). These pillars encompass Governance, Strategy, Risk & Impact, and Metrics & Targets. They are designed to accommodate various approaches to materiality currently in practice and are congruent with the objectives and targets outlined in the Kunming-Montreal Global Biodiversity Framework.

The TNFD released its final recommendations in September 2023. The framework is currently voluntary, but adoption is expected to grow as companies seek to improve their sustainability practices and access sustainable finance. The TNFD marks a notable advancement in integrating nature considerations into financial decision-making. Through its emphasis on transparency and accountability, the TNFD has the capacity to catalyse a transition toward a more sustainable future.

COP16 CBD

The 16th Conference of the Parties to the Convention on Biological Diversity (COP 16) will be the first biodiversity COP since the adoption of the Kunming-Montreal Global Biodiversity Framework at COP 15 in December 2022 in Montreal, Canada.

COP 16 is scheduled to take place from October 21 to November 1, 2024. The conference will encompass three key meetings:

A) COP 16: Sixteenth meeting of the Conference of the Parties to the Convention on Biological Diversity.

B) Cartagena Protocol: Eleventh meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety.

C) Nagoya Protocol: Fifth meeting of the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.

The conference will include a high-level ministerial segment, providing an opportunity for global leaders to discuss and address biodiversity-related issues.

COP 16 will be a crucial platform for the international community to assess progress, share best practices, and chart the way forward in implementing the Kunming-Montreal Global Biodiversity Framework adopted at COP 15. The framework sets out an ambitious plan to halt and reverse biodiversity loss by 2030, with a focus on areas such as protected areas, restoration, sustainable use, and resource mobilization.

The logo for COP 16, inspired by the Inírida flower, a species endemic to Colombia, was unveiled on the margins of the 6th United Nations Environment Assembly (UNEA-6), along with the Host Country's slogan for COP 16: “Peace with Nature”.

Three important messages that the COP 16 logo and slogan convey		
The Biodiversity Plan constitutes an indivisible whole	It is time to make peace with nature for the sake of planet and people	Biodiversity is a bulwark against the triple environmental crisis afflicting our world

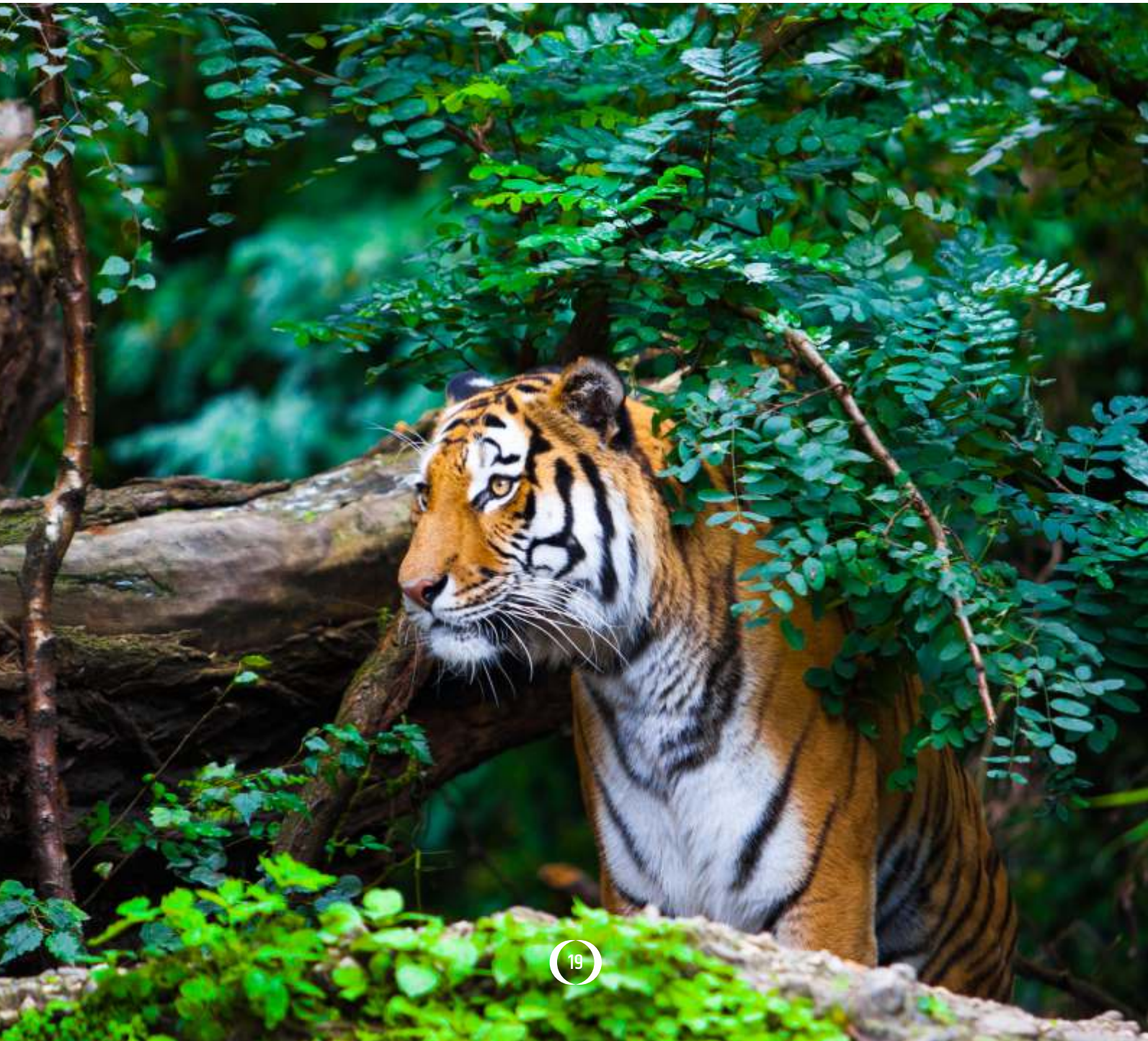
The three areas where the Parties to the Convention on Biological Diversity will be expected to accelerate the momentum of action are as follows:

1. Translate the Biodiversity Plan into National Action:
    - Goals: Achieve Sustainable Development Goals (SDGs) and live in harmony with nature by 2050.
    - Action Plans: Align National Biodiversity Strategies and Action Plans (NBSAPs) with the Biodiversity Plan.
    - Monitoring: Monitor, report, and review progress, with a checkpoint at the Subsidiary Body on Implementation (SBI) meeting in Nairobi in May.
2. Mobilize and bolster the means of implementation:
    - Resources: Ensure financial resources, capacity-building, and technology transfer for full implementation.

- Financial Gap: Address the $700 billion per year biodiversity finance gap.
- Support Mechanisms: Utilize the Global Biodiversity Framework Fund and GEF-8 resources.

3. Accelerate progress on Access and Benefit-Sharing (ABS):
    - ABS Goals: Maximize benefits for users, providers, and communities where genetic resources are found.
    - Nagoya Protocol: Increase the number of countries party to the Protocol.

Negotiations: Focus on operationalizing a multilateral mechanism for fair and equitable sharing of benefits from Digital Sequence Information (DSI) on genetic resources, including establishing a global fund.



2.4 The Institutional Landscape of Indian Biodiversity Management

India occupies a unique position at the intersection of three biogeographic realms: the Palearctic, the Indomalayan, and the Afrotropical. This convergence gives rise to a diverse array of habitats, ranging from the snowy peaks of the Himalayas to lush tropical rainforests and expansive deserts. India's diverse climate zones supports a wide array of flora and fauna, some exclusive to India, especially in globally recognised biodiversity hotspots like the Western Ghats and Eastern Himalayas. Traditional ecological knowledge and cultural reverence for nature have played crucial roles in biodiversity conservation over generations. The Indian constitution reflects this commitment through directives for state policy, fundamental duties, and rights aimed at protecting the environment.

2.4.1 Constitutional Provisions for Environmental Protection

The Constitution of India is a dynamic document that evolves to meet the changing needs of society. This adaptability is evident in its provisions for environmental protection, which have developed over time. The preamble, emphasizing a socialist society and the dignity of the individual, inherently includes the pursuit of a decent standard of living and a pollution-free environment. Following the 1972 Stockholm Conference, which raised global awareness about environmental issues, India recognized the urgency of conserving and protecting its forests. In 1976, the Indian Constitution was amended through the Forty-Second Amendment, adding Articles 48-A (Directive Principles of State Policy) and 51-A (g) (Fundamental Duty) to emphasize environmental protection.

Article 48-A

Mandates the government to strive for the preservation and enhancement of the environment.

Emphasizes the safeguarding of forests and wildlife as an essential aspect of environmental conservation.

Article 51-A (g)

Imposes a fundamental duty on every Indian citizen to protect and improve the natural environment.

Thereby elevating environmental concerns to a legal and ethical level.

Article 21 - Right to Life

Includes the protection and preservation of the environment and ecological balance.

Ensures a life free from pollution of air and water, as these are essential for a dignified human life.

Article 13 - Limitation on Fundamental Rights

States that no law or rule can be enacted that diminishes any of the Fundamental Rights listed, and if such a law is passed, it will be considered void to that extent.

India's Constitution, through Articles 32 and 226, empowers citizens to file Public Interest Litigation (PIL) to address environmental concerns. This has led to a surge in environmental lawsuits, with the Supreme Court playing a pivotal role in shaping environmental jurisprudence. Landmark cases like the closure of limestone quarries in Dehradun (Dehradun Quarrying case, 1985) and the mandating of safety measures at a Delhi chlorine plant (M.C. Mehta V. Union of India, 1988) stand as testaments to this impact.

Furthermore, the Supreme Court, in the Vellore Citizens Welfare Forum case (1996), recognized the "Precautionary Principle" and the "Polluter Pays Principle" as fundamental tenets of "Sustainable Development." This landmark decision highlights the proactive and responsible approach essential for attaining a sustainable future.

Additionally, India's constitution empowers Panchayats (local village councils) to address environmental concerns, extending the power to protect the environment beyond the national level.

These councils have the authority to enact measures pertaining to soil conservation, water management, forestry, and the promotion of ecological well-being within their communities.

2.4.2 National Policies Addressing Biological Diversity in India

Despite covering just 2% of the global landmass, India is home to an impressive 8% of the world's biodiversity, making it one of the 17 megadiverse nations. Within its borders, India encompasses four of the world's 34 Biodiversity Hotspots, including the Himalayas and Western Ghats entirely within its territory.

The nation's diverse cultures are intricately linked to biological diversity, directly or indirectly. The loss of biodiversity not only disrupts food chains and livelihoods but also the cultures of millions, underlining its far-reaching consequences.

In modern India, the Shore Nuisance (Bombay and Kolaba) Act of 1853 marked the inception of British-era legislation focused on water quality management. It targeted the control of waste materials discharged by factories in the coastal regions of Bombay and Colaba (now Mumbai). Subsequently, a series of legislations were enacted across the nation, including the Oriental Gas Company Act (1857), Indian Penal Code (1860), The Serais Act (1867), North India Canal and Drainage Act (1873), Obstruction in Fairways Act (1881), Indian Easements Act (1882) - Riparian Rights, Fisheries Act (1897), Indian Ports Act (1908), and Indian Forest Act (1927).

I. Indian Forest Act, 1927

The Indian Forest Act of 1927 aimed to consolidate and reform forest laws in India, initiating the codification of forest officials' practices and activities. It also sought to regulate rights over forest lands and resources, introducing various classifications of forests and expanding state control over them. The preceding Forest Act of 1878 established a de facto State monopoly over forests and asserted that villagers' customary forest use was a 'privilege,' not a 'right,' subject to withdrawal at the State's discretion.

The 1927 act did not recognize community rights over forests, requiring individuals to assert their claims over forest lands. Additionally, it aimed to regulate the transportation of forest produce and impose duties on forest products, reflecting colonial emphasis on revenue generation from forests. The act categorized forests into (i) Reserve Forest (ii) Village Forest (iii) Protected Forest (iv) Non-government Forest.

Considering the contradictions and overlaps in forest legislation, the effectiveness of the 1927 Act is diminished. While it remains a significant piece of legislation for forest management in India, there is ongoing discussion about potential reforms to address its limitations and adapt to changing environmental and social realities.

II. The Wildlife Protection Act, 1972[1]

The Wildlife (Protection) Act of 1972 stands as a cornerstone legislation for wildlife protection in India, establishing a comprehensive national framework for wildlife conservation. Its key objectives include implementing conservation strategies for endangered species and ensuring protection for all species within designated areas.

The Act aligns with the constitutional objectives outlined in Article 48 A and Article 51 A(g) by prohibiting the hunting of wild animals, except under specific circumstances. Courts have upheld the importance of the Act's provisions, emphasizing their role in preserving ecological balance and the integrity of the ecological chain. Additionally, India's accession to the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) was facilitated by the Wildlife Act.

The act also encompasses six schedules outlining plants and animals subject to varying levels of protection and oversight by the government. Additionally, multiple bodies have been constituted under the act to institutionalize wildlife protection and conservation efforts:

[1] *Amended in 1991, 2001, 2006 and 2022.*

National Board for Wildlife (NBWL)

- NBWL acts as the apex body overseeing all wildlife-related matters and project approvals within national parks and sanctuaries

State Board for Wildlife (SBWL)

- Chaired by the Chief Minister of the respective state/UT, SBWL oversees wildlife-related affairs at the state level.

Central Zoo Authority (CZA)

- Comprising 10 members, a Chairperson and a Member-Secretary.
- Recognizes and regulates zoos nationwide. Sets guidelines and rules for animal transfers between zoos nationally and internationally.

National Tiger Conservation Authority (NTCA)

- Established in 2005 based on Tiger Task Force recommendations.
- Chaired by the Union Environment Minister and vice-chaired by the State Environment Minister. It recommends areas for declaration as Tiger Reserves by the Central Government.

Wildlife Crime Control Bureau (WCCB)

- Established to combat organized wildlife crime, is mandated by the Act to enforce wildlife protection laws in the country.

Amendments to the Act:

- ***Wildlife (Protection) Amendment Act of 1991:***

This amendment increased penalties and fines for wildlife-related offenses and introduced provisions for safeguarding endangered species.

- ***Wildlife (Protection) Amendment Act of 2002:***

This amendment introduced the concept of community reserves and conservation reserves, designating protected areas specifically for conservation purposes.

- ***Wildlife (Protection) Amendment Act of 2006:***

This amendment addressed human-wildlife conflicts by establishing the National Tiger Conservation Authority (NTCA) to oversee the management and protection of tiger reserves. Furthermore, it established the Tiger and Other Endangered Species Crime Control Bureau to combat wildlife-related crimes.

- ***Wildlife (Protection) Amendment Act, 2022:***

This amendment aims to expand species protection and implement CITES regulations. Notable changes include reducing the schedules to four in number, with Schedule I offering the highest protection for animal species. The other three schedules cover animal species subject to a lesser degree of protection, protected plant species, and scheduled specimens under CITES, respectively. The Act also allows the use of elephants for religious or other purposes and increases penalties for violations concerning both general and specially protected animals.



III. Forest Conservation Act, 1980[2]

The Forest Conservation Act of 1980 was enacted to regulate the diversion of forest land for non-forestry purposes and ensure the conservation of forests and their ecological balance. It empowers the State Government to utilize forests solely for forestry purposes, with any alternative usage requiring prior approval from the Central Government. The Act mandates the establishment of an advisory committee to advise the Central Government on matters related to forest de-reservation for non-forest purposes.

Under this Act, any illegal non-forest activity within a forest area can be promptly halted. Forest officers and their staff are responsible for administering the Forest Act, which categorizes forests into reserved forests, village forests, protected forests, and private forests. An amendment was done in 1988 to include criminal penalties for violating its provisions.

The case of T.N. Godavarman Thirumulkpad vs. Union of India and Others (1997) significantly bolstered forest conservation efforts in India. It focused on interpreting the Forest (Conservation) Act, 1980, particularly its application to private forests. The court ruled that the conservation provisions of the Act must apply universally to all forests, regardless of ownership or classification. Additionally, it mandated that prior approval from the Central Government is necessary for any non-forest activity within forest areas.

Amendments to the Act:

- ***Forest (Conservation) Amendment Act 2023***

The amended Forest (Conservation) Act of 1980 aims to balance sustainable development with safeguarding India's forests and biodiversity. It exempts certain categories of land from requiring central government approval for diversion, including land not officially recorded as forest before October 25, 1980.

Additionally, the amendment allows for relaxed approval procedures for specific project categories such as strategic infrastructure projects near international borders, linear infrastructure projects (roads, railways), and projects related to public utilities in districts affected by left-wing extremism. Furthermore, it reduces the timeframe for public consultation on forest land diversion proposals.

However, concerns have been raised regarding the narrowed definition of 'forest,' potentially excluding 28% of India's forests outside Recorded Forest Areas from the Act's purview. Apprehensions also arise regarding the stake of forest dwellers, exclusion of fragile ecosystems around international borders, and exploitation of forests for eco-tourism and safari development. Additionally, the amendment grants the central government authority to issue directives for the Act's implementation to any recognized authority or organization under the jurisdiction of the central, state, or union territory governments.

IV. Environment Protection Act ,1986

The Environment Protection Act of 1986 (EPA 1986) was enacted following the UN Conference on Human Environment held in Stockholm in 1972. It grants the Centre authority to enforce environmental protection measures, enabling nationwide coordination of environmental programs and the establishment of standards for pollutant emissions and discharges. The Act imposes location restrictions on industries and empowers government officials to enter premises for examination and sampling purposes. Strict prohibitions are in place for the discharge of pollutants exceeding regulatory limits, with specific provisions for hazardous substances. Additionally, any individual is allowed to file a complaint in court for violations of the Act's provisions, a right not limited to government officers.

The Environment (Protection) Act, 1986 (EPA), mandates the Environmental Impact Assessment (EIA) process, governed by guidelines and procedures outlined in notifications issued by the MoEFCC.

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[2] *Amended in 1988, 2010 and 2023.*

At its core, the act comprehensively addresses environmental protection, empowering the State to issue notifications as necessary to safeguard the environment. A notable example is the Coastal Regulation Zone Notification (CRZN) issued by the Ministry of Environment and Forests in 2019, designating coastal stretches as Coastal Regulation Zones (CRZ). This measure aims to regulate industrial and other activities within CRZ areas to preserve and protect coastal regions, ecosystems, and the livelihoods of coastal communities.

V. National Forest Policy, 1988

The first forest policy was articulated in 1894, which was revised in 1952 and the present National Forest Policy was declared in 1988. The 1952 policy prioritized forest production and revenue generation, whereas the 1988 policy shifted its focus to ensuring environmental stability and ecological balance, essential for sustaining all life forms. It aims to safeguard forests, restore ecological balance, and involve local communities in forest management.

It encourages the efficient utilization of forest produce while promoting the involvement of local communities in forest management through initiatives like Joint Forest Management. Moreover, the 1988 policy marks a shift from a top-down management style to a more collaborative approach.

The 1988 National Forest Policy has shown significant progress in key areas:

- Increased forest and tree cover in India.
- Active involvement of local communities in forest protection through Joint Forest Management.
- Ensuring sustainable access to forest resources for rural and tribal populations.
- Conservation measures for preserving India's biodiversity and genetic resources.
- Substantial contribution to environmental stability and ecological balance.



Since the inception of the Forest Policy 1988, the forest and tree cover in the country has increased from 19.7% of the geographical area (State Forest Report, 1987) to 24.62% of the geographical area (State Forest Report, 2021). This positive trend suggests that the Forest Policy's prescriptions are gradually contributing to environmental stability and ecological balance.

Draft National Forest Policy, 2018[3]

Acknowledging the evolving environmental landscape, the 2018 draft forest policy seeks to modernize the 1988 policy by integrating the principles of sustainable forest management. by integrating principles of sustainable forest management, including strengthening ecosystem security, addressing climate change, ensuring forest water security, empowering communities, promoting urban forestry, building a robust monitoring system, facilitating collaboration, preserving cultural heritage, and leveraging forest resources.

The draft Policy recommends integrating climate change mitigation and adaptation measures in forest management including resilience to climate change by forest dependent communities. Due to concerns about conflicts with the Forest Rights Act (FRA) 2006 and The Provisions of the Panchayats (Extension to the Scheduled Areas) (PESA) Act of 1996 and difficulty of implementation of policy with a wide array of objectives, the draft was withdrawn.

[3] *Present Status: Withdrawn in 2019*

VI. The Protection of Plant Varieties and Farmers' Rights Act, 2001

The Protection of Plant Varieties and Farmers' Rights Act (PPVFRA) was enacted in 2001 amidst debates over intellectual property rights in agriculture, spurred by India's accession to the World Trade Organisation (WTO) in 1995 and commitment to Trade-Related Aspects of Intellectual Property Rights (TRIPS). Faced with a crucial decision, India chose to safeguard the interests of farming communities rather than adopting the International Union for Protection of New Plant Varieties (UPOV Convention) framework, which restricts farmers' rights to reuse farm-saved seeds and to exchange them with their neighbours. The Act has created a comprehensive framework to:

(i) Safeguard plant varieties

(ii) Acknowledge varieties cultivated and developed by farmers over time

(iii) Recognize wild relatives or local varieties known to farmers (based on community knowledge)

(iv) Provide farmers and plant breeders with rights to conserve and enhance plant genetic resources

(v) Foster the development of novel plant varieties

The implementation of these provisions is overseen by the Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA), established under the Act. It underscores the significance of conserving biodiversity. It permits farmers to save seeds of protected varieties for their personal use and exchange them with fellow farmers in their vicinity. This practice contributes to the preservation of on-farm biodiversity. Additionally, the Act promotes the creation of National Gene Banks to conserve a broader spectrum of plant varieties.

VII. The Biological Diversity Act 2002[4]

The inception of the Biological Diversity Act (referred to as BD Act) finds its roots in the Convention on Biological Diversity (CBD), which was signed at the Rio Summit in 1992. The Act establishes an institutional framework to fulfill the three objectives of the Convention: conservation, sustainable use, and equitable sharing of benefits arising from biological resources and related knowledge.

The Act delineates "biological diversity" as the diversity among living organisms from various sources and the ecological systems they constitute, encompassing diversity within and between species, as well as ecosystem diversity. Additionally, it defines "biological resources" as comprising plants, animals, microorganisms, or their parts, genetic material, and by-products (excluding value-added products) possessing actual or potential utility or value, while excluding human genetic material explicitly.

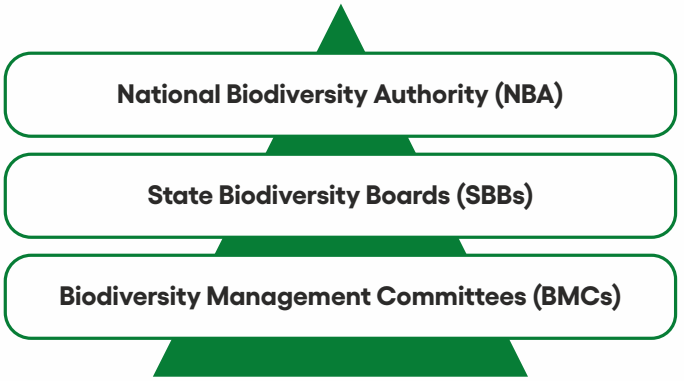
Three key principles enshrined in the Biological Diversity Act (BDA) of India, 2002 are:

Prior Informed Consent	Technology Transfer	Benefit Sharing
Ensures obtaining prior approval for utilizing a country's biological resources, emphasizing free and informed consent. This entails providing sufficient information to communities about the aims, risks, implications, and commercial value of resource usage.	Provides an exception to the standard access process for biological resources, for collaborative research projects, aiming to balance economic development and environmental concerns by facilitating technology transfer.	Mandates inclusion of benefit-sharing provisions in access agreements, covering mutually agreed terms for commercial use of biological resources or knowledge derived from India for commercial use, bioprospecting, or any other monetary purposes.

[4] *Amended in 2023*

It also includes provision wherein the State Government, in consultation with local bodies, may designate areas of significant biodiversity importance as ***Biodiversity Heritage Sites.***

The legislation establishes a three-tier regulatory structure:



These authorities are allocated dedicated funds and budgets to conduct research on the country's biological resources, oversee resource usage, ensure sustainable practices, manage financial investments, and allocate returns appropriately. Additionally, the Act empowers the Central Government, in consultation with the NBA, to:

1. Identify threatened species and regulate their collection, rehabilitation, and conservation.
2. Designate institutions as repositories for various categories of biological resources.

Offences under the Act are considered cognizable and non-bailable. Any disputes regarding benefit sharing or orders issued by the NBA or SBBs can be brought before the National Green Tribunal (NGT).

The Act mandates prior approval from the National Biodiversity Authority (NBA) for the following activities:

1. Procuring any biological resource in India for research or commercial use, whether by individuals or organizations, regardless of their location.
2. Transferring research findings related to Indian biological resources.
3. Asserting intellectual property rights over inventions resulting from research on Indian biological resources.

The Biological Diversity Act extends its coverage to include foreigners, non-resident Indians, as well as corporate bodies, associations, or organizations that are either not incorporated in India or are incorporated in India with non-Indian participation in their share capital or management. These entities must obtain approval from the NBA for accessing or utilizing biological resources and associated knowledge present in India for commercial, research, or bio-survey purposes.

On the other hand, Indian individuals and institutions are exempt from seeking approval from the NBA for engaging in the aforementioned activities. However, they are required to inform the respective SBBs before initiating any research with the intention of commercialization. Moreover, Intellectual Property Rights (IPR) applications based on biological resources need NBA approval.

The Act exempts Indian biological resources traded as commodities, provided they are solely used for commercial purposes. This exclusion applies strictly to commodity trading. Additionally, traditional uses of Indian biological resources and associated knowledge are exempt, particularly in collaborative research projects between Indian and foreign institutions approved by the central government. Furthermore, uses by cultivators, breeders (such as farmers, livestock keepers, and beekeepers), and traditional healers (e.g., vaids and hakims) are also exempted under the Act.

Significant Amendments to the Act:

- ***The Biological Diversity (Amendment) Act of 2023***

The amendment focuses on Access and Benefit Sharing through the following measures:

1. Streamlined Approval Process: Simplifying access toc biological resources for research, bio-surveys, and bio-utilization, potentially reducing bureaucratic obstacles for researchers and businesses.
2. Relaxed Benefit Sharing Requirements: The act no longer mandates benefit sharing for certain activities like research, bio-surveys, and bio-utilization. Raising concerns about equitable compensation for local communities holding traditional knowledge or residing in biodiverse areas.

It further revises the definition of Biological Resources and excludes "value-added products" containing unrecognizable portions of plants or animals from the act's scope. This may create loopholes to avoid regulations on accessing certain biological resources. Furthermore, the amendments strengthen the NBA, enhancing its control over accessing and utilizing biological resources. This centralized approach may improve biodiversity conservation efforts.

The overall impact:



- Research and Development: Streamlined access procedures could accelerate research and development in areas like biopharmaceuticals and agriculture.
- Benefit Sharing: Relaxed benefit-sharing requirements may adversely affect local communities and discourage biodiversity conservation efforts.
- Need for Clarity: Further clarification of the definition of "value-added products" is necessary to prevent misuse and ensure regulatory compliance.

VIII. Environmental Impact Assessment Notification, 2006

The Environmental Impact Assessment (EIA) process, mandated by the Environment (Protection) Act, 1986 (EPA), is governed by specific guidelines and procedures outlined in notifications issued by the MoEFCC. Key notifications include the EIA Notification 1994 (introducing the EIA process) and the EIA Notification 2006 (which introduced a two-tier system for clearances). The current framework for EIA in India is based on the EIA Notification 2006, with subsequent amendments.

The EIA Notification of 2006, though not exclusively targeted at biodiversity, significantly contributes to its conservation in India. This regulation mandates environmental assessments for diverse development projects to evaluate potential ecological impacts. By necessitating assessments of potential effects on flora, fauna, and ecosystems, the EIA process aids in mitigating negative impacts on biodiversity. Projects with notable biodiversity implications may undergo rigorous scrutiny or even rejection. This ensures that development initiatives consider and mitigate harm to India's abundant natural heritage.

Amendments to the Act:

- ***EIA Amendment Act 2006***

The amendment classified different development projects into Category A (national level appraisal) and Category B (state level appraisal). It also integrated four distinct stages: Screening, Scoping, Public Hearing, and Appraisal to the assessment. Category A projects, which necessitate compulsory environmental clearance. On the other hand, Category B projects undergo screening and are subsequently categorized into B1 (requiring mandatory EIA) and B2 (not requiring EIA). Mandatory clearance projects include mining, thermal power plants, river valley projects, infrastructure developments (roads, highways, ports, harbours, airports), and certain industries.

Environment Impact Assessment Draft 2020[5]

The draft aimed to amend the 2006 EIA act to facilitate business operations. Proposed changes included reducing the notice period for public hearings, expanding the list of exempted projects from public scrutiny, and altering compliance reporting requirements. Additionally, it introduced the concept of post-facto clearance for projects operating without environmental approval. However, concerns over weakened public scrutiny, lax compliance with environmental laws, and non-alignment with international conventions led to the withdrawal of the draft notification.

IX. Compensatory Afforestation Fund Act, 2016 (CAF Act)

It establishes a legal framework to compensate for the loss of forest and ecosystem services due to forest land diversion. Funds, such as the Net Present Value (NPV), are collected from user agencies as compensatory levies and allocated for specific projects. The Compensatory Afforestation Fund Rules of 2018 govern how NPV funds are utilized by State/Union Territory Compensatory Afforestation Fund Management and Planning Authorities (CAMPA). CAMPA funds are separate from regular state funds and are dedicated to ecological restoration, afforestation, forest quality improvement, wildlife habitat enhancement, biodiversity conservation, and ecosystem services enhancement. State/Union Territories CAMPA develop Annual Plans of Operations to implement afforestation and related activities in compliance with the CAF Act & CAF Rules, including the utilization of NPV funds.

2.4.2.1 State level Policies for Biodiversity

State Forest Policies provide guidance on the management of state forests, which are important habitats for biodiversity. These policies typically focus on conservation, sustainable use, and community participation. While the State Wildlife Policies provide guidance on the conservation and management of wildlife in the state. These policies typically focus on the protection of threatened and endangered species, the establishment and management of protected areas, and the sustainable use of wildlife resources. In addition to the above many states have also developed specific policies for the conservation and management of specific ecosystems, such as coastal ecosystems, wetland ecosystems, and mountain ecosystems.

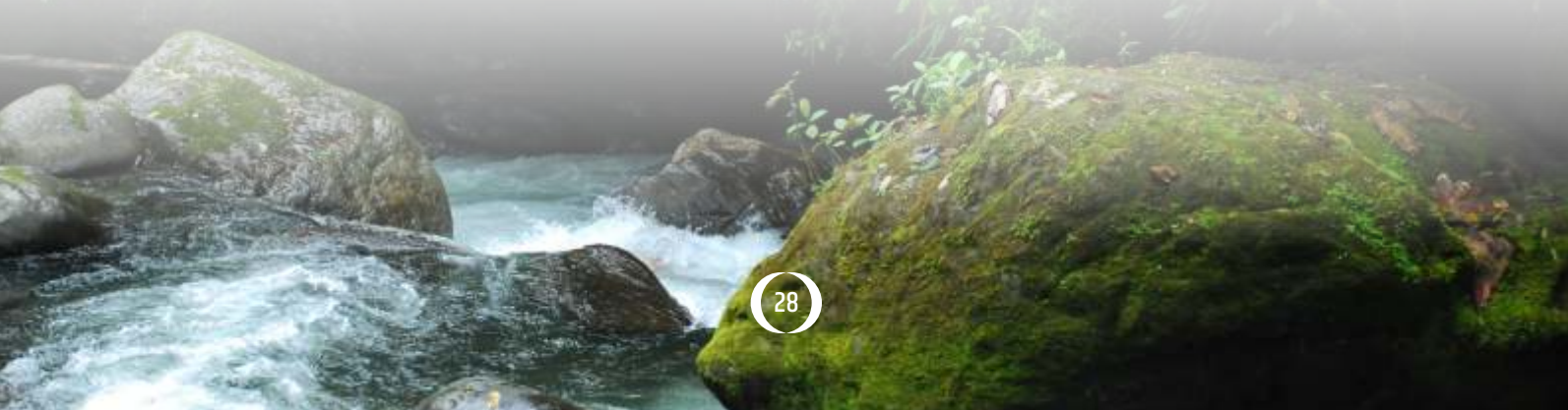
State Biodiversity Boards (SBBs)

Each state in India has a State Biodiversity Board (SBB) established under the BDA 2002, while Union Territory Biodiversity Councils (UTBCs) are set up across Indian union territories. These boards and councils are instrumental in implementing national biodiversity policies at the state and UT level. They advise respective governments on biodiversity conservation, sustainable use of its components, and the fair distribution of benefits arising from it. Additionally, they regulate commercial utilization, bio-surveys and bio-utilization, and may undertake initiatives for biodiversity conservation and public awareness.

Some examples of specific state-level policies for biodiversity conservation and management include:

1. Gujarat State Forest Policy 2017: Emphasizes the importance of forests for biodiversity conservation, sustainable development, and climate change mitigation. Goals include the protection of forests

[5] *Withdrawn due to concerns.*



from encroachment and illegal activities, the promotion of afforestation and reforestation, and the involvement of local communities in forest management.

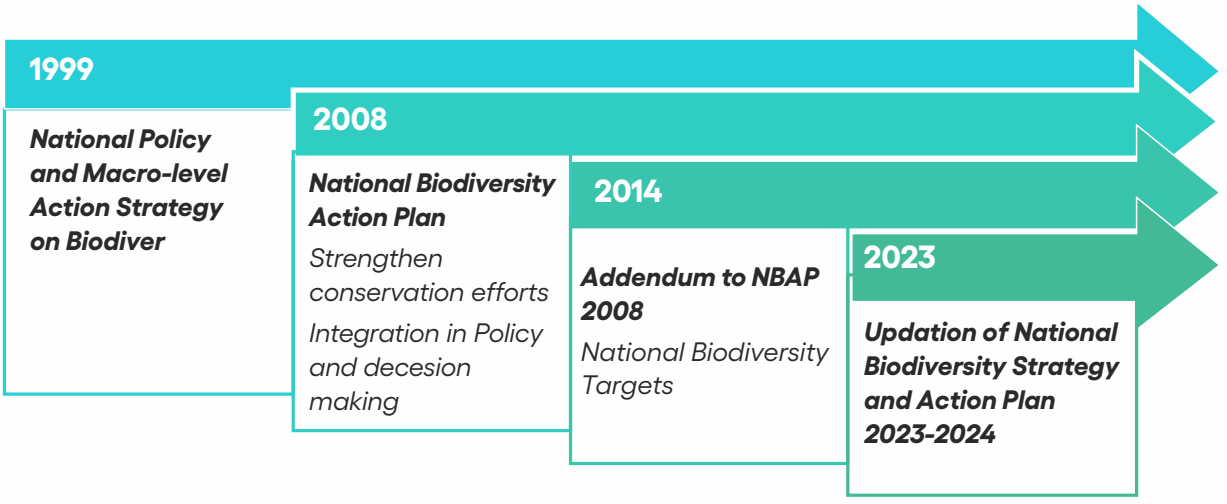
2. Karnataka State Wildlife Policy 2010: Aims to conserve wildlife heritage and promote its sustainable use. Focus area includes protected area management, species conservation, sustainable use of wildlife resources, and human-wildlife conflict management.
3. Kerala State Biodiversity Policy 2017: Aims to conserve biodiversity and promote its sustainable use. Focus areas includes protected area management, species conservation, sustainable use of biodiversity resources, and benefit-sharing.

In case of conflict between the State Forest Act and either the Indian Forest Act of 1927 or the Forest (Conservation) Act of 1980, the latter will supersede the State law.

2.4.3 National Biodiversity Action Plans in India

India ratified the Convention on Biological Diversity (CBD) in 1993, obligating signatory countries to develop national biodiversity strategies and action plans to implement the Convention's objectives nationally. In 1999, India established its National Policy and Macro-level Action Strategy on Biodiversity through extensive stakeholder consultations. This strategy aimed to raise awareness and facilitate effective CBD implementation. Subsequently, the Biological Diversity Act, 2002 (referred to as BD Act) was enacted to provide the necessary legislative framework for Convention implementation. Section 36(3) of the Act mandates integrating biodiversity conservation into relevant sectoral or cross-sectoral plans, programs, and policies at the Central Government level.

Both the 1999 Strategy and the BD Act stressed integrating biodiversity into sectoral programs. Alignment with policies like the National Forest Policy (NFP) of 1988, the National Conservation Strategy and Policy Statement on Environment and Development of 1992 (NCS-PED), and others was crucial. This led to the updating of national strategies and plans accordingly.



Following the adoption of the National Environment Policy (NEP) in 2006, India revised the 1999 strategy and updated into **National Biodiversity Action Plan (NBAP)** in 2008. This plan was further enhanced with the Addendum 2014, integrating the Strategic Plan for Biodiversity 2011-20 (SPB 2011-20) adopted during the CBD-COP 10 in Nagoya, Japan. The SPB 2011-20 comprises 20 Aichi Biodiversity Targets (ABTs) organized under five strategic goals to be implemented from 2011 to 2020.

As per the CBD mandate, India developed **National Biodiversity Targets (NBTs)** aligned with the SPB 2011-20 framework, tailored to their respective national priorities and requirements in line with the shared Biodiversity Vision 2050. Annexure provides detailed information on the NBTs, including the associated ABTs and relevant SDGs.

The CBD has formulated new global biodiversity targets for the post-2020 era. Signatory countries are currently revising their national plans to align with these targets. Public participation and civil society engagement play vital roles in ensuring effective implementation of these plans.

Implementation

The implementation of the National Biodiversity Action Plan (NBAP) involves collaboration among the Central Government, state governments, and local governance institutions across States/Union Territories (UTs). This collaborative effort involves active participation from various stakeholders, such as Non-Governmental Organizations (NGOs), Civil Society Organizations (CSOs), industry and business sectors, technical and educational institutions, as well as local and traditional communities.

Local communities are actively engaged in governance and implementation processes through mandatory representation in committees and government institutions at various levels. Thus, ensuring their involvement in government programs and promoting their economic well-being. They play a vital role in biodiversity conservation and sustainable use, contributing as both users and conservers.

Joint Forest Management Committees (JFMCs), Biodiversity Management Committees (BMCs), along with numerous Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs), facilitate and strengthen their participation. The effective execution of the National Biodiversity Action Plan (NBAP) also fulfils India's commitments under other relevant international conventions.

2.4.3.1 State Biodiversity Strategies and Action Plans

India adopts a two-tiered approach to biodiversity conservation. The NBSAP sets the national framework, while **State Biodiversity Strategies and Action Plans (SBSAPs)** serve as action plans at the state level. Each state has its own set of policies for biodiversity conservation and management. These policies are often aligned with the NBSAP, which is the overarching national policy for biodiversity conservation. SBSAPs are comprehensive plans that outline the state's goals and objectives for biodiversity conservation and management. They are developed by the State Biodiversity Boards (SBBs) in consultation with various stakeholders.



Some of the key state-level plans for biodiversity conservation and management include:

S. No	State Biodiversity Strategy and Action Plan	Focus Areas
1	Andhra Pradesh State Biodiversity Action Plan 2019-2023	Livelihood security and biodiversity conservation efforts
2	Assam State Biodiversity Strategy and Action Plan 2014-2023	Domestic and wild biodiversity, invasive species management.
3	Bihar State Biodiversity Strategy and Action Plan 2016-2025	Awareness and capacity building.
4	Chhattisgarh State Biodiversity Strategy and Action Plan 2020-2030	Mainstreaming biodiversity into development planning.
5	Goa State Biodiversity Strategy and Action Plan 2020-2025	Benefit-sharing.
6	Haryana State Biodiversity Strategy and Action Plan 2019-2028	Protected area management, species conservation, sustainable use of biodiversity resources, and mainstreaming biodiversity into development planning.
7	Himachal Pradesh State Biodiversity Strategy and Action Plan 2020-2029	Sustainable use of biodiversity resources, and climate change adaptation. Conservation efforts across the state with a special focus on the Lahaul-Pangi and Kinnaur Landscapes.
8	Jharkhand State Biodiversity Strategy and Action Plan 2019-2028	Mainstreaming biodiversity into development planning.
9	Maharashtra State Biodiversity Strategy and Action Plan 2019-2023	Protected area management, species-specific conservation plans for threatened flora and fauna. Sustainable use of biodiversity resources, and capacity building.

Additionally in collaboration with local authorities, State Governments have the authority to designate areas of significant biodiversity importance as Biodiversity Heritage Sites (BHS) under the Biological Diversity Act, 2002. They can establish regulations for the management and conservation of these sites in consultation with the Central Government.

Biodiversity Management Committees (BMCs)

Section 41 of the Biological Diversity Act mandates that every local body must establish a Biodiversity Management Committee within its jurisdiction. The primary objective of these committees is to advance the conservation, sustainable utilization, and documentation of biological diversity. This includes endeavours such as preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals and microorganisms. Additionally, these committees are tasked with compiling and preserving knowledge related to biological diversity as People's Biodiversity Registers.

Furthermore, the Biodiversity Management Committee is entrusted with the responsibility of furnishing feedback to the State Biodiversity Board (SBB) regarding Intellectual Property Rights (IPR), Traditional Knowledge, and local biodiversity issues, whenever feasible. Additionally, essential feedback is to be communicated to the National Biodiversity Authority (NBA) as necessary.

2.4.4 Government Bodies Driving Biodiversity Initiatives in India

India's approach to biodiversity conservation involves a well-structured framework with central and state government bodies playing significant roles. Following are these key institutions:

Institution	Brief
CENTRE LEVEL	
Ministry of Environment, Forest and Climate Change (MoEFCC)	Nodal ministry for biodiversity conservation and management in India. Responsible for formulating and overseeing the implementation of policies and plans for environment and biodiversity conservation.
National Biodiversity Authority (NBA)	Established under the Biological Diversity Act (BDA). Regulate access to biological resources and ensure equitable sharing of benefits arising from their utilization.
Botanical Survey of India (BSI)	Research organization under the MoEF&CC. Responsible for the survey, exploration, research, and conservation of the plant resources of India.
Zoological Survey of India (ZSI)	Research organization under the MoEF&CC. Responsible for the survey, exploration, research, and conservation of the animal resources of India.
Wildlife Institute of India (WII)	Undertakes research and capacity-building initiatives related to wildlife conservation and biodiversity management.
STATE LEVEL	
State Departments of Environment and Forests	Responsible for monitoring and assessing biodiversity conservation and management programs at the state level.
State Biodiversity Boards (SBBs)	Established under the BDA to implement biodiversity conservation policies at the state level and regulate access to biological resources.
State Forest Departments	Manage and conserve forest resources, including protected areas and wildlife sanctuaries, within their respective states.
State Wildlife Boards	Established under the Wildlife (Protection) Act, 1972. Tasked with the conservation and management of wildlife and protected areas within the state.
LOCAL LEVEL	
Biodiversity Management Committees (BMCs)	Established under the Biological Diversity Act (BDA) 2002, BMCs at the Gram Panchayat level is tasked with documenting local biodiversity, devising conservation plans, and monitoring biodiversity within their jurisdiction.

In addition to government bodies, numerous non-governmental organizations (NGOs) and community-based organizations (CBOs) are integral to biodiversity conservation in India. They focus on wildlife protection, habitat restoration, and sustainable livelihoods. While the institutional framework continues to evolve, the NBA and BMCs represent strides toward decentralized decision-making and community empowerment in conservation efforts.

2.4.4.1 Other Institutions Involved in Biodiversity Efforts

The Wildlife Crime Control Bureau (WCCB) is a central agency tasked with coordinating and implementing measures to prevent and control wildlife crime. It works to combat illegal activities related to wildlife trade and poaching. Meanwhile, the Indian Council of Forestry Research and Education (ICFRE) is an autonomous body under the MoEF&CC focused on conducting research in forestry and wildlife management. Additionally, it provides education and training in forestry and related sciences.

Bodies other than government involved in biodiversity conservation efforts in India are following:

I. *Joint Forest Management Committees (JFMCs):* JFMCs are local institutions formed to involve forest-dependent communities in the protection and management of forest resources. They work closely with forest departments to implement sustainable forest management practices and prevent illegal activities like poaching and logging.

Joint Forest Management (JFM) is a collaborative program initiated under the National Forest Policy of 1988 to restore degraded forest land in India. It delegates forest management to local Joint Forest Management Committees (JFMCs), comprising forest-dwelling communities. JFMCs operate democratically within the Gram Sabha framework and are established according to state JFM guidelines. They manage forest resources, with some covering multiple villages or hamlets. JFM has widespread participation, with thousands of committees managing forest areas, monitored by a dedicated JFM Cell within the Ministry of Environment and Forests.

The ***Eco-Development Committee (EDC)*** serves a similar purpose to JFMCs but is specifically tailored for villages located within Protected Areas and their buffer zones.

ii. *Village Forest Committees (VFCs):* VFCs are community-based organizations responsible for managing and protecting village forests. They play a significant role in afforestation, fire prevention, and wildlife conservation at the village level.

iii. *Watershed Committees:* These committees are involved in the conservation and management of watershed areas, which are critical for maintaining biodiversity and regulating water resources. They work to prevent soil erosion, promote reforestation, and implement sustainable agricultural practices.

iv. *Community-based Organizations (CBOs):* Various community-based organizations, including NGOs and local conservation groups, play an active role in biodiversity conservation initiatives at the grassroots level. They often collaborate with government agencies and other stakeholders to implement conservation projects and raise awareness among local communities.

At local and village level also, Panchayats have been empowered under the constitution to take measures such as soil conservation, water management, forestry and protection of the environment and promotion of ecological aspect.

2.5 Government Initiatives/ Projects for Biodiversity Conservation

The Wildlife Protection Act, 1972, and The Biodiversity Act, 2002, provide provisions for declaring various protected areas and conservation sites such as National Parks, Wildlife Sanctuaries, Conservation Reserves, Biosphere Reserves, Community Reserves, Wetlands, Botanical Gardens, Zoological Parks, and Gene Banks. Alongside these legislative measures, the Government of India implements numerous in-situ and ex-situ conservation efforts to protect ecosystems and biodiversity. Few are listed below:

1) *National Afforestation Programme (NAP):* Launched in 2000, this flagship initiative aims to restore degraded forest lands and promote sustainable forest management practices nationwide. In pursuit of enhancing greening efforts and meeting objectives, the Ministry is transitioning towards integrating the National Afforestation Programme (NAP) into the Green India Mission (GIM).

2) *National Mission for Green India (GIM):* As part of the National Action Plan on Climate Change (NAPCC), GIM aims to protect and restore India's forests while addressing climate change through adaptation and mitigation measures. It targets multiple ecosystem services like biodiversity preservation, water resources, and carbon sequestration, involving local communities. Goals include expanding forest cover by 5 million hectares, enhancing ecosystem services, and improving livelihoods for around 3 million households. Budget allocation increased from Rs. 160 crores in 2020-21 to Rs. 220 crores in 2024-25.

3) *National Coastal Management Programme (NCMP):* Launched in 1999, NCMP aims at integrated coastal area management in India. It focuses on conserving coastal ecosystems, promoting sustainable development, and addressing climate change impacts. NCMP prepares Integrated Coastal Zone Management Plans (ICZMPs) and is implemented by the National Centre for Sustainable Coastal Management (NCSCM).

   The government has introduced the Amrit Dharohar scheme to promote sustainable wetland utilization and the Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) for shoreline protection and climate adaptation.

4) *National Mission on Himalayan Studies (NMHS):* Launched in 2010 with the objective of generating knowledge and developing technologies for the sustainable management of the Himalayan ecosystem. The program focuses on research on climate change, biodiversity conservation, and disaster management.

5) *National Wildlife Action Plan (NWAP):* It focuses on preserving genetic diversity and sustainable development. It comprises five components, 17 themes, 103 conservation actions, and 250 projects. These components include enhancing integrated wildlife and habitat management, addressing climate change impacts, promoting sustainable aquatic biodiversity management, fostering eco-tourism and participatory management, advancing wildlife research and human resource development, and facilitating policy support and resource allocation for wildlife conservation. NWAP aims to integrate wildlife conservation into development planning.

6) *National Plan for Conservation of Aquatic Eco-systems (NPCA):* It consolidates the National Wetlands Conservation Programme (NWCP) and National Lake Conservation Plan (NLCP). Initiated in 2013, NPCA is a centrally sponsored scheme implemented by MoEF&CC. It focuses on wetlands including lakes across India, with cost sharing between the Central Government and respective State Governments.

7) *National Action Programme to Combat Desertification:* Initiated in 2001, it is India's primary strategy to tackle the issues of desertification and land degradation. It focuses on strengthening institutions, adopting sustainable land management practices, improving water resource management, and fostering community engagement. By implementing initiatives like soil conservation, afforestation, and enhancing water usage efficiency, NAPCD aims to combat desertification and ensure the long-term sustainability of India's land resources.

8) *Species Recovery Programmes (SRPs):* SRPs are developed and implemented for the recovery of threatened and endangered species. SRPs focus on protection of critical habitats, reduction of threats, and augmentation of populations. A number of SRPs have been implemented for threatened and endangered species in India, such as the tiger, the elephant, and the vulture.

9) *Integrated Wildlife Habitat Development:* The Ministry oversees two key schemes aimed at safeguarding the nation's wildlife: Project Tiger & Elephant and the Development of Wildlife Habitats. Previously, Project Tiger and Project Elephant were distinct initiatives, but they have since been merged into a unified program known as Project Tiger & Elephant.

2.5.1 Major Projects and Budgetary Allocations Towards Biodiversity

The Government of India allocates funds for biodiversity conservation through various centrally sponsored and central sector schemes. Below is a list of major allocations:

Table 2: Biodiversity Conservation related Budget Allocation by Government of India

S.No.	Scheme	Budget Allocation (in crores)		
		FY 2022-23	FY 2023-24	FY 2024-25
Centre Sector Schemes				
1	National Coastal Management Programme	16.38	40.3	50
2	National Mission on Himalayan Studies	26.6	NA	NA
Centrally Sponsored Schemes				
3	National Mission for a Green India	217.17	220	220
4	Conservation of Natural Resources and Ecosystems	20.91	47	43.5
5	Integrated Development of Wildlife Habitats	485.24	758.8	713.5
a)	Project Tiger	151.97	NA	NA
b)	Project Elephant	16.3	NA	NA
c)	Project Tiger & Elephant	NA	331.8	713.5

Source: sbe28.pdf (indiabudget.gov.in)

Furthermore, the Government of India has implemented numerous initiatives to protect biodiversity and promote conservation through schemes such as the National Action Plan for Climate Change (NAPCC), National Mission on Sustainable Habitat, National Water Mission, National Mission for Sustaining Himalayan Ecosystem, National Mission for Sustainable Agriculture, Biosphere Reserves, Watershed Development Project in Shifting Cultivation Areas, Water Resources programme for Repair, Renovation & Restoration of Water bodies, and Compensatory Afforestation Fund Management and Planning Authority (CAMPA).





3 BUSINESS CASE FOR BIODIVERSITY

Businesses rely on genetic biodiversity and ecosystem services as critical inputs to their production processes and depend on healthy ecosystems to manage waste and maintain other resources. As per World Economic Forum, more than half of the global total GDP relies on nature and its services, making it vulnerable to nature loss. This global crisis presents both systemic risks and development opportunities to businesses. The intrinsic dependency of business on biodiversity for value and resilience makes it crucial for long term sustainability.

Five primary pressures, including land-use and sea-use change, overexploitation of natural resources, climate change, pollution, and the spread of invasive species, are leading to a steep decline in biodiversity. This decline in ecosystem functionality already results in a yearly global economic loss exceeding $5 trillion due to diminished natural services.

Five Major Factors Drive Biodiversity Loss

Land-use and sea-use change	Direct overexploitation	Climate change	Pollution of soil, water, and air	Spread of invasive species
Habitat conversion (e.g., deforestation), habitat fragmentation, and degradation through overintensive use of ecosystems	Overexploitation of animals, plants, and ecosystems in general (e.g., from poaching, unsustainable logging, or overfishing)	Shifts in temperature, precipitation, and wind flows caused by increased levels of greenhouse gases in the atmosphere	Release of harmful substances (e.g., through excessive chemical use) into ecosystems; also, light and noise pollution	Plants, animals, or other nonnative organisms entering or expanding their presence in a given habitat

Source: IPBES, "Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services" (2019).

Numerous business activities, particularly those linked to resource extraction and agriculture, contribute significantly to the factors driving biodiversity loss. Specifically, the operations within four major value chains—food, energy, infrastructure, and fashion—account for over 90% of the human-induced pressure on biodiversity.

Thus, making businesses a pivotal force in realizing the global bio/diversity targets and objectives of the Convention on Biological Diversity, which emphasize biodiversity conservation, sustainable utilization, and equitable sharing of benefits arising out of genetic resource usage. Efforts such as the Global Partnership for Business and Biodiversity, established under the Convention, foster collaboration between businesses and governments toward achieving these goals. As awareness of the dual materiality of biodiversity issues grows, businesses are increasingly measuring and managing associated risks.

3.1 Business and Biodiversity Interlinkages

To effectively manage costs and foster long-term value creation throughout supply chains, businesses must gain a deeper understanding of their dependencies on biodiversity and ecosystem services. Integrating these considerations into long-term business strategies, risk management approaches, and other operational activities is essential for effective long term business sustainability.

The profitability and sustained viability of various business sectors are intricately linked to biodiversity and well-functioning ecosystems. The loss of biodiversity directly affects key activities within value chains, leading to increased costs of inputs and raw materials. This impact is particularly evident in sectors such as agriculture, forestry, fisheries, aquaculture, and ecotourism. Few such examples are:

- The agricultural sector heavily relies on pollination services with an annual global food production valued between USD 235 to 577 billion directly attributed to pollinators (IPBES, 2016).
- Forests plays a crucial role in the timber, pulp, and paper sectors, contributing significantly to global trade exports valued at USD 247 billion (FAOSTAT-Forestry database, 2017).
- Sustainable water supply is essential across various sectors. For instance, the garment and footwear industry alone accounts for approximately 20% of global wastewater use (UNECE, 2018).
- Additionally, the ecotourism sector benefits greatly from well-functioning coral reefs, generating a substantial global tourism value of USD 36 billion annually (Spalding et al., 2017).

Business operations, supply chains, and investment decisions can yield both direct and indirect adverse effects on biodiversity and ecosystem services. These activities can directly cause adverse impacts on biodiversity, contribute to actual and potential impacts, or have indirect impacts.

3.1.1 Business Risks Associated with Biodiversity Loss

Biodiversity-related risks for businesses primarily arise from their dependencies on biodiversity and the impacts they exert on biodiversity i.e., dual materiality. This applies particularly to business and financial organizations, including investors, lenders, and insurers. The risks associated with biodiversity loss can be categorized as follows:

1) ***Ecological Risks:*** These risks comprise of those tied to biodiversity, ecological impacts, and dependencies, primarily operational challenges linked to resource scarcity and quality. Examples include increased costs of raw materials due to limited resources like timber or freshwater, compromised supply chains from resource scarcity or variable production of natural inputs, and disruptions to business operations.

2) ***Liability Risks:*** These risks arise when parties affected by biodiversity-related loss or damage seek compensation from those deemed responsible. The likelihood of legal action tied to biodiversity issues may rise as companies' disclosure and external reporting on their biodiversity impact assessments increase.

3) ***Regulatory Risks:*** Such risks encompass limitations on land and resource access, obligations for cleanup and compensation, adherence to procurement standards, and licensing and permitting processes, including moratoriums on new permits.

4) ***Reputational Risks:*** These risks arise as businesses encounter increased pressure from investors, consumers, shareholders, policymakers, and civil society to assess, report, and mitigate risks to society and the environment, including those related to biodiversity. According to the Union for Ethical BioTrade (UEBT) 2018 Biodiversity Barometer, while the majority of consumers expect companies to uphold biodiversity standards, they lack trust in their ability to do so, which can result in consumer boycotts.

5) ***Market Risks:*** Market risks stem from shifts in consumer preferences towards products with minimized biodiversity impacts or evolving purchaser requirements, such as the inclusion of biodiversity safeguards in supply-chain criteria. These risks are poised to escalate with increasing consumer awareness and understanding of biodiversity on a global scale. Investors are also incorporating biodiversity considerations into their assessments and investment decisions, favouring companies with robust biodiversity strategies and reporting capabilities.

6) ***Financial Risks:*** Financial risks extend to businesses, banks, and investors, encompassing insurance risks, challenges in accessing capital, and the potential loss of investment opportunities. These risks may arise from higher insurance premiums due to biodiversity loss, increased costs of capital, or stricter lending criteria tied to negative biodiversity impacts or dependencies. Additionally, as ecological risks escalate, businesses and financial entities may face asset depreciation, particularly evident in sectors like agriculture and food production.

Business impacts and dependencies on biodiversity introduce risks not only to the businesses themselves but also to society and the environment, encompassing broader "responsible business conduct" (RBC) risks.



Responsible business conduct (RBC) entails an expectation for all businesses, irrespective of their legal status, size, ownership, or sector, to prevent and mitigate adverse impacts resulting from their operations while simultaneously fostering sustainable development in the regions where they conduct business.

According to the OECD[6] Guidelines on Multinational Enterprises, RBC risks encompass potential adverse impacts on society and the environment related to various factors, including the environment, human rights, workers, bribery, consumers, and corporate governance. Upholding RBC is crucial for fostering trust in business. By recognizing and effectively managing their dependencies and impacts on biodiversity, businesses and financial organizations can mitigate and prevent risks associated with biodiversity loss and threats to ecosystem services.

While biodiversity loss and associated issues pose risks and challenges for businesses worldwide, biodiversity and ecosystem services also present new opportunities for business growth and innovation.

3.1.2 Biodiversity and Business Opportunities

Business opportunities for biodiversity and ecosystem services (BES) are emerging as companies recognize the critical role that nature plays in supporting their operations and long-term success. By integrating BES considerations into their strategies, businesses can not only mitigate risks associated with biodiversity loss but also unlock new revenue streams and enhance their brand reputation. For instance, multiple companies worldwide are already implementing conservation initiatives and mitigation measures to protect biodiversity, demonstrating the potential for businesses to benefit from a more sustainable approach. Such opportunities include:

1) Long-term viability of business models: Enhancing the sustainable utilization of resources to address business reliance on biodiversity help ensure the long-term availability of natural resources. This, in turn, ensures the sustained viability of business operations and fosters the creation of long-term value.

2) Cost savings and increases in operational efficiency: Improved monitoring of the origin and processing of inputs and resources, such as energy savings from green roofs or increased productivity of permaculture, can aid in cost control while mitigating negative impacts on biodiversity.

3) Increased market share: Customer loyalty in favour of environmentally responsible business conduct can result in gains in market share. This increased trust from consumers may also translate into increased investor confidence, potentially attracting more investment.

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[6] *Organisation for Economic Co-operation and Development: India is a non-member economy which shares a working relationship. India has been cooperating with the OECD since 1995 and participates in selected OECD committees and their subsidiary bodies. This allows Indian policymakers to benefit from the OECD's technical expertise and analytical capacity.*

4) New business models: Business initiatives aimed at biodiversity can lead to development of novel products, technologies, and services with reduced adverse impact on biodiversity. This is often driven by shifts in consumer awareness and preferences, as well as the adoption of new business models.

Additionally, it can unlock opportunities in new markets, such as ecotourism, organic agriculture, and certified sustainable products. Moreover, it can spur the emergence of new businesses, like ecosystem restoration ventures, and create new revenue streams, such as payments for ecosystem services in wetlands and forests.

5) Business- Stakeholder relationships: Improved relationships with stakeholders, including customers, shareholders, regulators, civil society, and employees.

Table 3: Scale and growth potential of new markets with reduced biodiversity impacts and dependencies

Sector/market (globally)	Current market size (annual revenue, USD billion) (latest year available)	Forecasted compound annual growth rate (timeframe)	Projected market size (annual revenue) (USD billion) (year)	Estimated annual investment needs (USD billion)
Organic food and beverages	116 (2015)	16.4% (2015-22)	327 (2022)	n/a
Ecotourism	77 (2009)	10-30%	n/a	n/a
Eco fibres	n/a	11.46% (2015-20)	75 (2020)	n/a
Sustainable forest management	n/a	n/a	n/a	70-160
Sustainable seafood	12.7 (2017)	4.97% (2017-25)	18.6 (2025)	n/a
Biopharma	240-270 (2018)	n/a	n/a	n/a

Source: OECD (2019), Biodiversity: Finance and the Economic and Business Case for Action, OECD

Additionally, businesses can develop innovative products and services that leverage biodiversity, such as eco-friendly materials or nature-based solutions for climate resilience. Collaboration with conservation organizations and local communities can lead to mutually beneficial partnerships that support biodiversity conservation while creating economic opportunities. Furthermore, adopting sustainable supply chain practices can reduce risks and costs associated with resource scarcity and regulatory compliance. Overall, embracing biodiversity and ecosystem services not only benefits the environment but also unlocks new avenues for business growth and sustainability.



3.2 Business Engagement Approaches to Biodiversity

Companies engage in biodiversity conservation projects through two main approaches: compliance-driven and business-driven.

Compliance-Driven Projects	Business-Driven Projects
• To comply with legal mandates or industry standards. • Environmental regulations requiring companies to offset their biodiversity impact or mitigate environmental damage. • Adherence to regulatory standards and legal obligations concerning biodiversity conservation, aligning their operations with environmental laws and regulations. • example: A mining company may be required to rehabilitate a degraded forest area as stipulated in its EC conditions.	• Voluntary biodiversity conservation initiatives as part of their corporate social responsibility (CSR) or sustainability efforts. • Goes beyond legal requirements and focuses on integrating biodiversity conservation into business strategies to create positive environmental impacts and enhance corporate reputation. • Also aim to sustain the supply of biodiversity-related raw materials for businesses. • A food and beverage company may allocate resources towards sustainable agriculture practices to safeguard pollinators essential for crop cultivation.

Understanding these two approaches enables companies to make informed decisions regarding their engagement in biodiversity conservation projects. While compliance remains crucial, acknowledging the business case for biodiversity protection can drive more strategic and impactful initiatives.

3.3 Frameworks of Biodiversity Related Business Sustainability

The business landscape is experiencing a profound shift: sustainability is becoming more prevalent, and both consumers and investors are demanding companies to adapt. In response, many businesses are actively striving to improve their contributions to communities and society at large. This trend has led to an increased focus on Environmental, Social, and Governance (ESG) and Corporate Social Responsibility (CSR) reporting. While these concepts are part of the broader sustainability framework, they each represent distinct approaches to business reporting.

Similarities

Shared Goals

Both ESG and CSR aim to promote sustainability and social responsibility within a company. They focus on the positive impact a company can have on the environment, society, and the economy

Stakeholder Engagement

Both frameworks involve engaging with stakeholders, including investors, customers, employees, and the broader community, to understand their expectations and concerns

While they share some similarities, they differ in their focus, scope, and application.

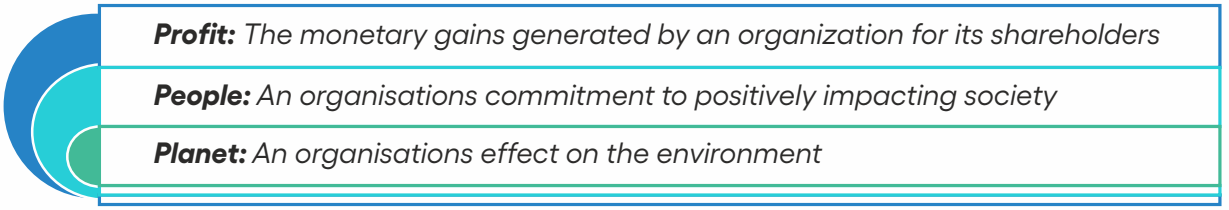
CSR	ESG
Focus	
Focused on the internal aspects of a company's operations, such as corporate volunteering, community investment, and charitable giving.	Focused on the external impact of a company's operations, including environmental (pollution, resource use, climate change), social (labour practices, human rights, diversity), and governance (ethics, transparency, board structure) factors.
Scope	
More qualitative measure, focusing on the company's values, policies, and practices.	More quantitative measure, providing metrics and ratings that can be used by investors and other stakeholders to assess a company's sustainability performance.
Application	
Often used as an internal framework for a company to guide its sustainability initiatives.	An external framework for investors and other stakeholders to assess a company's sustainability performance.
Governance	
Doest not include such factors typically.	Explicitly includes governance factors, such as board composition and executive compensation.
Quantification	
More qualitative and subjective.	Provides a more quantifiable measure of sustainability, which can be used by investors to make informed decisions.

According to the Corporate Social Responsibility Statistics 2024 report, 55% of global consumers online are willing to pay more for goods and services from companies committed to CSR.

The concept of the "Triple Bottom Line" provides a valuable framework for organizations embracing corporate social responsibility (CSR). This financial approach emphasizes the importance of considering three key aspects: people, planet, and profit. By prioritizing these elements, companies strive to generate positive societal impact while also fostering sustainable growth.



The Triple Bottom Line Approach



To some, embracing a triple bottom line approach might appear idealistic in a profit-driven world. Yet, innovative companies consistently demonstrate the feasibility of achieving success through positive impact. Numerous firms have found financial rewards through sustainable business practices.

CSR, ESG, and the Triple Bottom Line are interconnected strategies for promoting sustainable business practices. CSR focuses on ethical conduct and societal contributions, ESG assesses sustainability performance, and the Triple Bottom Line prioritizes social, environmental, and economic impacts. Integrating ESG and CSR enables companies to pursue the Triple Bottom Line, fostering overall sustainability. This holistic approach ensures responsible operations, risk mitigation, investor appeal, and stakeholder trust. This holistic approach emphasizes that financial success shouldn't compromise environmental and social welfare. Consequently, these concepts complement each other, fostering a sustainable and inclusive business model that prioritizes long-term prosperity for all stakeholders.

3.4 Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) is a management principle where companies incorporate social and environmental considerations into their business activities and interactions with stakeholders. CSR aims to balance economic, environmental, and social goals (referred to as the "Triple-Bottom-Line Approach") while addressing shareholder and stakeholder expectations. As per World Bank, Corporate Social Responsibility (CSR) is the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve quality of life, in ways that are both good for business and good for development. CSR programs encourage ethical decision-making, safety, and positive societal impact. These initiatives help companies minimize environmental harm, address social issues like poverty and inequality, and align their brand identity with their values. By integrating CSR into their operations, companies can contribute to a more sustainable and socially responsible business environment.

3.4.1 The Evolving Landscape of Corporate Social Responsibility in India

In India, the practice of CSR has evolved from traditional philanthropy focused on institutional building to community development projects. However, influenced by global trends and increasing community activism, CSR is becoming more strategic, integrating with business objectives rather than being purely philanthropic. Many companies are now reporting their CSR activities on official websites, annual reports, sustainability reports, and dedicated CSR reports.

The significance of inclusive growth is widely acknowledged as integral to India's development agenda. It underscores the firm commitment to incorporate marginalized sections of society into the growth trajectory thus ensuring their inclusion in the nation's development. Aligned with this national objective, Corporate Social Responsibility (CSR) was conceptualized as a mechanism to embed social, environmental, and human development considerations across the corporate business value chain.

2009

- MCA issues Voluntary Guidelines on Corporate Social Responsibility
- A step towards mainstreaming the concept of business responsibility

2011

- MCA issues National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVGs)
- It contained a Business Responsibility Reporting framework.

2012

- SEBI mandated the top 100 listed companies by market capitalisation to file Business Responsibility Reports (SEBI-BRRs/ BRR) through the Listing Agreement.

2014

- Corporate Social Responsibility is made mandatory

2015

- Requirement for filing BRRs extended to top 500 listed companies by market capitalisation from FY 2015-16

2019

- Updated NVGs were released as the 'National Guidelines for Responsible Business Conduct' (NGRBCs)
- BRR requirement extended to top 1000 listed companies by market capitalisation, from FY 2019-20.

Source: Ministry of Corporate Affairs (MCA). (2020, August 11). Business Responsibility & Sustainability Reporting Format.



3.4.2 Guiding Principles of CSR for Businesses

The NGRBC offers a framework for companies to achieve inclusive and sustainable growth while addressing stakeholder concerns. These guidelines emphasize the implementation of principles both in letter and in spirit. The principles include:



Source: Ministry of Corporate Affairs. (2023) History. (https://www.mca.gov.in/content/csr/global/master/home/aboutcsr/history.html)

3.4.3 Key Provisions, Eligibility and Disclosure

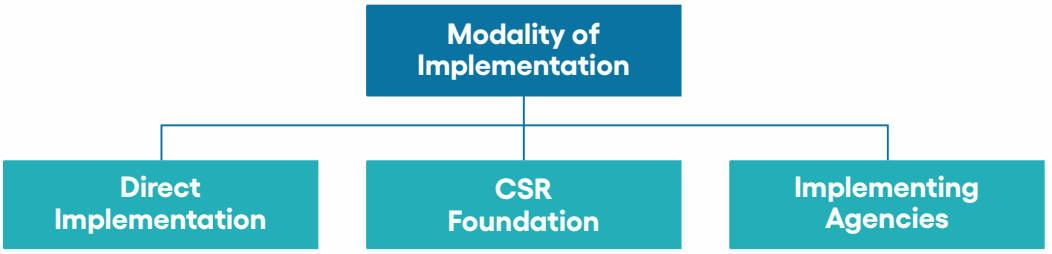
Key government documents that establish the framework for Corporate Social Responsibility (CSR) in India:

Section 135 of the Companies Act, 2013 Enumerates the provisions regarding CSR	**Schedule VII to the Companies Act, 2013** Indicates the activities to be undertaken by the company under CSR	**Companies (CSR Policy) Rules, 2014** Prescribes the manner in which companies shall comply with CSR provisions of the Act

In India, CSR is governed by Section 135 of the Companies Act, 2013, Schedule VII of the Act, and the Companies (CSR Policy) Rules, 2014. As per the provisions of the Companies Act, 2013, read with the Companies (CSR Policy) Rules, 2014 corporations that meet any of the subsequent criteria in the preceding financial year must engage in Corporate Social Responsibility (CSR) initiatives:

- Companies with a net worth of INR 500 crore or more.
- Companies with a turnover of INR 1,000 crore or more.
- Companies with a net profit of INR 5 crore or more.

According to the Companies Act, 2013, qualifying companies are required to spend at least two percent of the average net profits made during the three immediately preceding financial years on Corporate Social Responsibility (CSR) activities. These regulations outline criteria for CSR eligibility, implementation, and reporting.

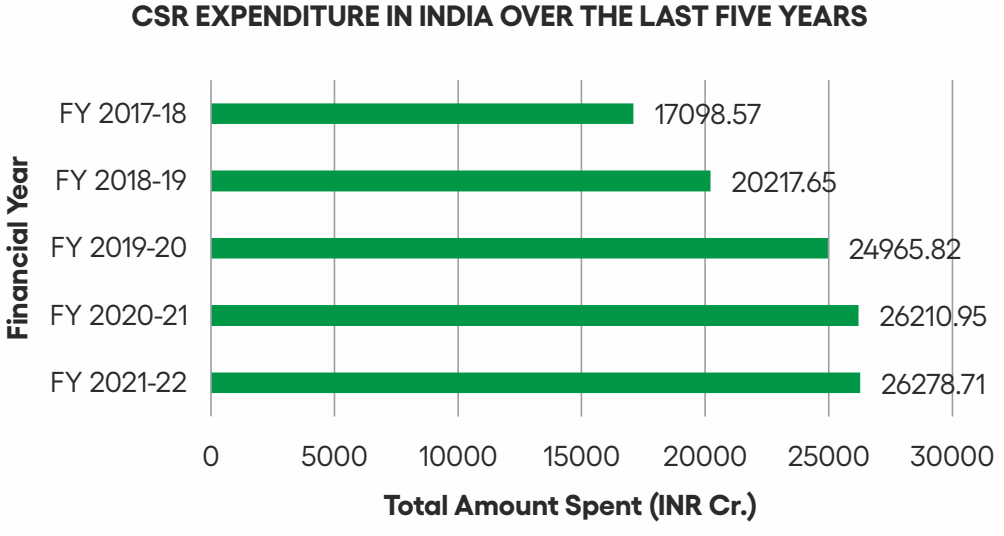


Source: CSRBOX & NGOBOX. (2023, October). India CSR Outlook Report 2023 (10 Years of CSR Compliance in India and Envisioning the Next 10 Years)

The CSR framework is based on disclosure, with CSR-mandated companies obligated to annually file CSR activity details in the MCA21 registry. These companies must disclose CSR activities, including any non-compliance, in their financial statements. Legal provisions mandate disclosure, hold the CSR Committee and Board accountable, and provide mechanisms for auditing company accounts, ensuring effective monitoring. India's comprehensive CSR mechanism reflects its commitment to sustainability and stakeholder engagement in nation-building. As the CSR landscape expands, India is poised to become a leading example in achieving sustainability goals. Mandating CSR through legislative action underscores India's dedication to corporate responsibility and societal welfare.

3.4.4 Impact of CSR on Indian Businesses

The enactment of the Companies Act, 2013 by the Ministry of Corporate Affairs marked a pivotal moment for India's CSR landscape. This legislation mandates certain companies to allocate a portion of their profits to CSR initiatives, promoting widespread adoption of social responsibility practices. This statutory obligation ensures a structured and consistent approach to corporate giving, directing CSR spending towards critical areas like education, healthcare, poverty alleviation, and environmental protection in alignment with Sustainable Development Goals (SDGs). By fostering collaboration among companies, NGOs, and communities, the Act encourages vital partnerships essential for advancing sustainable development initiatives.



Source: MCA, GoI(https://www.mca.gov.in/content/csr/global/master/home/home.html)

The mandatory CSR regime in India applies to certain categories of companies, both listed and non-listed. However, there are some key differences in how their CSR spending is reported and tracked.

Listed Companies

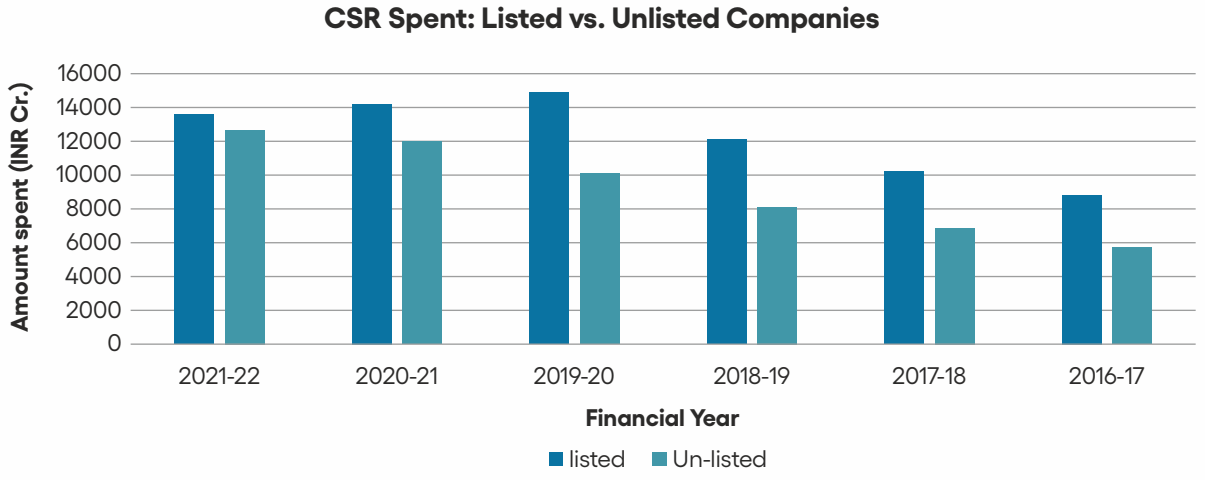
Higher Visibility: Subject to stricter reporting requirements.

Annual Reports: Requirement of CSR activities and expenditure disclosure.

Un-listed Companies

Limited Visibility: Not held to the same extent of reporting obligations as listed firms.

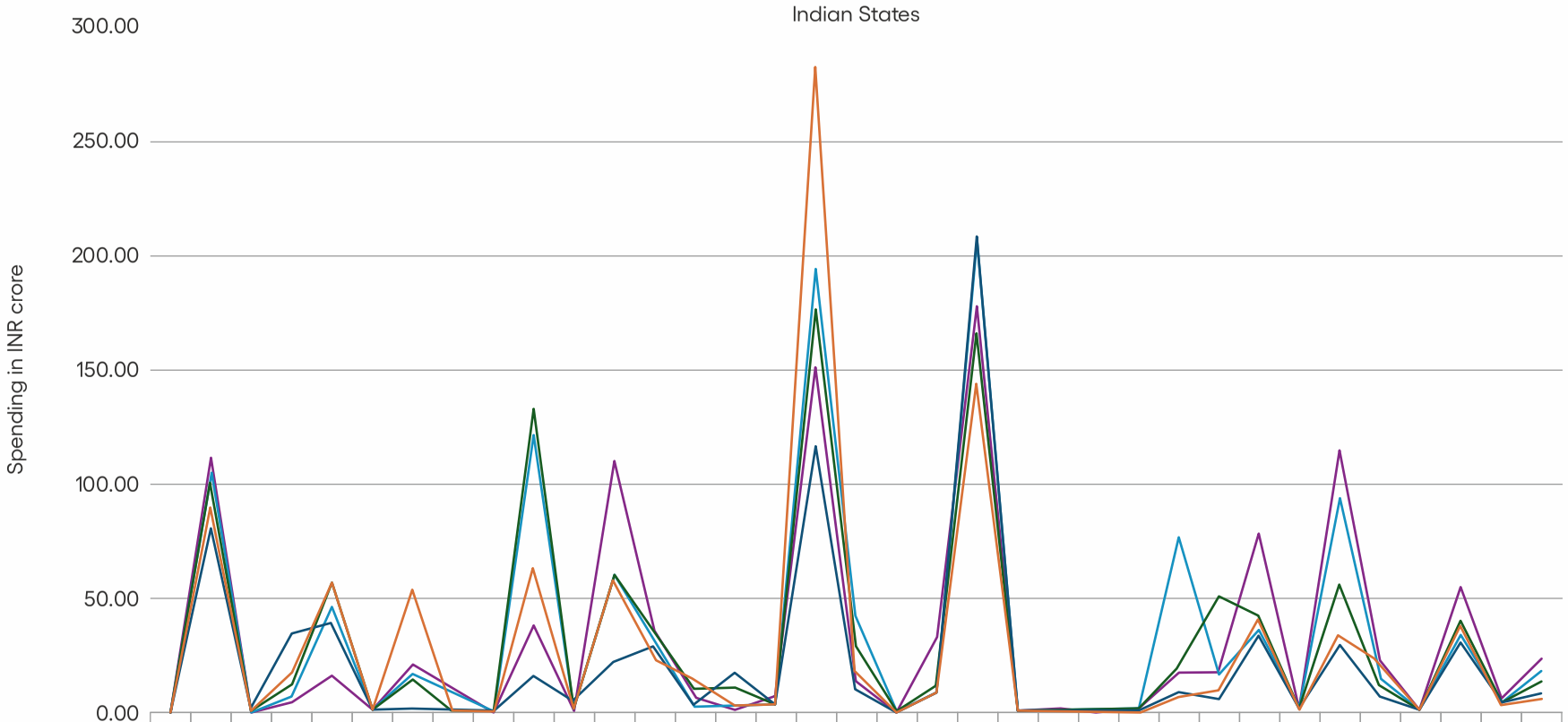
Limited Data Availability: Absence of centralised database for CSR data.



Source: MCA, GoI(https://www.mca.gov.in/content/csr/global/master/home/home.html)



CSR Spending on Environment, animal welfare and conservation of resource over the five years: FY 2016-17 to FY 2020-21



	Andaman And Nicobar	Andhra Pradesh	Arunachal Pradesh	Assam	Bihar	Chandigarh	Chhattisgarh	Dadra And Nagar Haveli	Daman And Diu	Delhi	Goa	Gujarat	Haryana	Himachal Pradesh	Jammu And Kashmir	Jharkhand	Karnataka	Kerala	Lakshadweep	Madhya Pradesh	Maharashtra	Manipur	Meghalaya	Mizoram	Nagaland	Odisha	Punjab	Rajasthan	Sikkim	Tamil Nadu	Telangana	Tripura	Uttar Pradesh	Uttarakhand	West Bengat
FY 2016-17 (INR Cr.)	0.06	82.4	0.8	34.7	39.5	0	1.68	0.34	0	16.1	5.48	22.2	29.6	4.01	17.2	5.54	118	9.95	0	8.65	204	0.04	0.97	0	0	9.22	5.58	34.4	0	29.7	7.84	0.25	31.6	3.77	8.31
FY 2017-18 (INR Cr.)	0	92.1	0.59	17.4	57.3	0.2	54.4	0.14	0	63.6	0.96	58.2	23.5	14.1	3.84	4.17	283	17.7	0.43	11.8	146	0	0.42	0.02	0.02	6.87	9.34	41.4	0.04	34.3	21.5	0.12	38	3.52	6.58
FY 2018-19 (INR Cr.)	0.14	101	0.86	12.5	57.6	0.17	15.2	0.29	0.43	134	0.86	60.4	31.2	10.3	10.8	3.88	180	29.5	0	11.7	172	0.07	0.34	0	0	20	51.3	42.8	1.03	56.9	12.3	0.32	40.9	7.06	13.2
FY 2019-20 (INR Cr.)	0.21	106	1.78	7.61	46.6	0.12	16.8	9.88	0.01	124	1.01	60.9	35.3	2.61	3.53	3.81	196	42.1	0	8.64	209	0.02	0.29	0	0.04	78.2	16.5	37.5	0.01	94.9	15.1	0	34.7	4.28	18.4
FY 2020-21 (INR Cr.)	0.06	111	0.27	4.11	16.5	1.05	21.5	9.18	0.11	38.6	0.61	110	36	6.95	1.64	7.08	152	13.3	0	32.9	179	1.28	1.38	0	1.52	17.3	17.5	78.8	0	116	22.7	0.07	55.7	5.69	23.7

The Ministry of Corporate Affairs, Government of India, has established the National Corporate Responsibility (CSR) Awards to honour companies that have demonstrated exemplary and sustainable CSR initiatives contributing positively to society. These awards represent the highest accolade for CSR endeavours in India. The 1st edition of National CSR Awards ceremony took place on October 29, 2019, with the esteemed presence of the Honourable President of India as the Chief Guest.

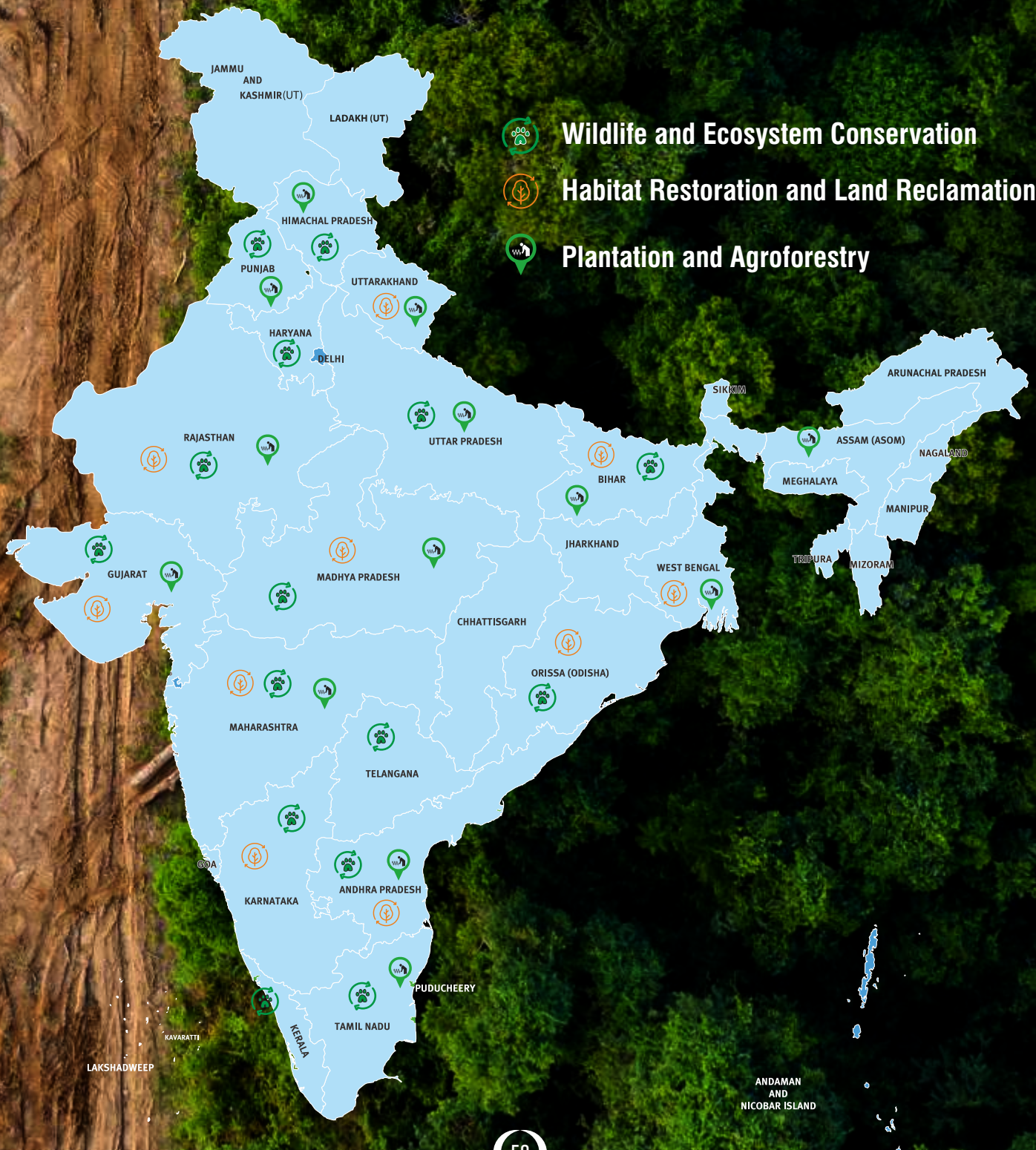
The mandatory CSR regime in India applies to certain categories of companies, both listed and non-listed. However, there are some key differences in how their CSR spending is reported and tracked.



Corporate Social Responsibility (CSR) forms an essential component of business strategy. By integrating CSR initiatives with their core strengths and value chains, companies can foster shared value, achieving financial gains while addressing societal needs. This mutually beneficial relationship between business success and social advancement epitomizes impactful and sustainable CSR practices. Moving forward, the CSR landscape in India will continue to evolve, placing greater emphasis on transparency, stakeholder engagement, and tangible outcomes. Companies that proactively embrace this shift and seamlessly embed CSR into their operations will be poised to drive inclusive growth and contribute significantly to the nation's developmental trajectory.

The path ahead requires sustained commitment, innovative thinking, and collaborative endeavours among the private sector, government, and civil society. Through harnessing the collective power of business, CSR has the potential to emerge as a transformative catalyst, shaping a more equitable and sustainable future for all stakeholders.

4 BUSSINESS ACTIONS: BIODIVERSITY CONSERVATION CASE STUDIES



ACC LIMITED

Afforestation Initiative at ACC Gagal, Himachal Pradesh

While the cement sector may not directly depend on biodiversity for provisioning services, it benefits from biodiversity's regulating services, such as air pollution control and climate regulation. Biodiverse areas also hold cultural and aesthetic value. Cement plants, including the Gagal plant of ACC Ltd, are required to invest in greening initiatives as part of regulatory clearances. ACC Ltd has significantly invested in greening efforts across its operations, including non-mine areas, closed mine sites, manufacturing facilities, and the integrated township. These initiatives have transformed the Gagal plant area into one of the greenest regions in Bilaspur district, Himachal Pradesh, attracting visitors with its scenic beauty and environmental consciousness.

At the Gagal Cement plant, the first mining operations commenced in Barmana Hill in 1984. After mineral extraction from Barmana Hill concluded around 1990, mining activity shifted to Gagal Hill, where it is ongoing. The rehabilitation of the closed Barmana mine into a mango orchard is an additional attraction for plant visitors.

At the Gagal plant, the total mining lease area spans 231.25 hectares, with only 58 hectares designated for active mining. The remaining land was characterized by barren or degraded hilly terrain with sporadic vegetation. This area was transformed into a dense forest through artificial regeneration using local species, fostering floral and faunal diversity. Plantation work was conducted systematically in blocks, with annual replenishment of plant mortality. It took nearly two decades to develop this biodiverse area, maintained by the company for over four decades. The hilly landscape's most prominent feature is the concentration of species diversity along a vertical projection, providing suitable habitats for animals like leopards, monitor lizards, geckos, and various bird species. Since its inception, over 1 million trees have been planted, covering approximately 202.5 hectares in and around the plant, mines, township, community areas, and along the National Highway. Notable fauna species that have adapted to the ecosystem include langurs, macaques, grey mongooses, Bengal monitor lizards, striped palm squirrels, reptiles like house lizards, Indian chameleons, and toads.

Several factors facilitated the transformation of the area:

- Involvement of local people in plantation work, providing them with employment opportunities.
- Selection of security guards from the local community for forest protection.
- Awareness campaigns highlighting the ecosystem's provisioning services for the local community, such as firewood, fodder, and small timber obtained from the forest.
- Engagement with the local forest department, aiding in knowledge creation regarding suitable species and acting as a deterrent against poaching and illegal felling.
- Collaboration with local bodies like gram panchayats, NGOs, and mahila mandals for enhanced community participation and support.

During the initiative's implementation, challenges like site and species selection, technical know-how, and issues such as illegal felling and poaching were faced. Forest fires, fuelled by pine needles, were a significant challenge. Additionally, the greening of the area attracted wild animals, leading to damage to nearby agricultural crops and encounters with community livestock.

These challenges were addressed by employing watch and ward guards from the local community and providing firewood, fodder, and small timber to build relations with the surrounding community. Fencing was implemented in plain areas, where feasible, except for steep hills. Forest fires, mainly caused by dry pine needles during summer, were tackled by collecting them from the community and compensating them financially. This initiative created livelihood opportunities under the Company's CSR initiatives. Collected pine needles are now co-processed in the cement kiln as an alternate fuel source, reducing dependence on fossil fuels.

The initiative has led to increased biodiversity in the area and has also addressed various environmental challenges such as soil erosion, flood control to protect agricultural land, and prevention of silting in natural reservoirs. Additionally, it has resulted in an increase in the water level of the surrounding area and has enhanced ecosystem services, including provisioning, regulating, support, and cultural services. Overall, the transformation of the area into a dense green forest with rich biodiversity has been a significant achievement of the initiative.

Moving forward, ACC plans to plant over 2000 saplings annually in the open forest area, as well as extend our operations to community areas belonging to Panchayats, communities, and Shamlat land. Additionally, maintaining the areas that have already been developed is another regular activity for the Company.








Mangrove Conservation at Kunhimangalam, Kannur Kandal, Kerala

The sustenance of environmental capital is a core area of focus for Apollo Tyres, whereby projects are designed to mutually benefit all stakeholders. Biodiversity Conservation initiatives stem from robust partnerships that educate, enrich, and engage in strategically selected locations. At Apollo Tyres, biodiversity has taken a centre stage with a global commitment to reach half a million beneficiaries by FY'26. The tailored interventions and community engagement activities aim to make the planet greener each year. The company has launched projects focused on Natural Resource Management and Biodiversity Conservation to mitigate adverse impacts on biodiversity.

Major initiatives undertaken towards biodiversity conservation (SDGs 13, 14 & 15) are:

A) In Kerala, Apollo Tyres initiated the ***Mangrove Conservation: Kannur Kandal Project*** in 2016, covering 18.65 acres. This project aims to address mangrove degradation by securing forest plots, establishing a learning centre, initiating mangrove restoration, and promoting community monitoring in collaboration with the Kerala Forest Department (KFD). By FY'26, the goal is to eco-restore 5 acres of degraded mangrove land, with a cumulative restoration target of 18 acres. This involves planting 17,500 new saplings and establishing a State-level Mangrove Nursery. An integrated conservation, research, and outreach model is employed to ensure the survival and protection of existing mangroves, thereby sustaining ecosystem services and fostering local community development. The Mangrove Conservation project initiated in 2017 has received a total investment of ₹2.51 crore until FY'23, entirely funded by Apollo Tyres Ltd.

The project encountered several challenges, including the private ownership of land, which required time to convince individuals of the project's benefits. Additionally, finding partners with the technical expertise for project implementation and long-term maintenance was difficult. Furthermore, assessing the impact on biodiversity initiatives required a longer time horizon, adding complexity. Overcoming these challenges necessitated careful planning and collaboration among stakeholders.

B) Apollo Tyres initiated a project on ***Afforestation and Carbon Sequestration***, planting 3.50lac trees and training farmers in intercropping to enhance soil organic carbon content. The project spans Tiruvannamalai District, Tamil Nadu, and Valsad District, Gujarat. The initiative aims to plant 2lac new saplings by 2026, fostering forest cover growth, enhancing community livelihoods, and creating a carbon sink for GHGs mitigation. The initiative has received a total investment of ₹36.99 crore until FY'23, entirely funded by Apollo Tyres Ltd.















A variety of initiatives have also been undertaken to raise awareness about biodiversity conservation and mangrove protection. These include organizing awareness sessions for students and communities through street plays and nature trails. Additionally, periodic plantation drives are conducted in collaboration with local government bodies to promote afforestation efforts. A national-level photography contest has been organized to engage a wider audience, focusing on thematic topics related to mangrove habitats, flora and fauna, and the relationship between mangroves and humans. Furthermore, an inter-state 'Environment and Nature Quiz' for college students has been organized to highlight the significance of biodiversity and mangrove conservation. These initiatives aim to foster a deeper understanding and appreciation for the importance of preserving biodiversity and mangrove ecosystems among different segments of society.

Various biodiversity conservation initiatives have successfully restored approximately 10.4 acres of land, benefiting over 230,000 individuals, which includes the Kannur Kandal Project. Additionally, 350,000 trees have been planted in Tamil Nadu as part of the Afforestation initiative, while 10,000 trees have been planted under the Miyawaki project in the Gujarat region.

Significant insights gained from these projects emphasize the significance of collaboration and stakeholder ownership in effective biodiversity conservation. Projects aligned with public policy and in partnership with government agencies yield a higher impact. Additionally, understanding farmers' decisions regarding biodiversity management is crucial for addressing biodiversity loss while maintaining food production.

Pragati - Sustainable Castor Bean Programme in North Gujarat

The world's first sustainable castor program, Pragati, was launched in 2016 by BASF and two partner companies (Arkema and Jayant Agro-Organics) in collaboration with Solidaridad as the implementation partner. Spanning the years 2016 to 2022, the initiative showcases BASF's commitment to sustainable initiatives. Pragati aimed to enroll over 6200 farmers across more than 80 villages in North Gujarat to cultivate certified castor seeds sustainably and profitably. The program was conceived with the understanding of castor's potential as an often-overlooked crop thriving in semi-arid climates. Despite its wild growth, castor seeds yield versatile oil with applications in various industries such as paints, adhesives, pharmaceuticals, and textiles.

Castor cultivation holds significant importance for smallholder farmers in India, serving as a reliable option due to its resilience to drought and its reputation for being low-input and easy to manage. The widespread cultivation of castor in the country is supported by the substantial number of these farmers. Farmers were encouraged to enroll in the program and cultivate castor with training from technical experts. Soil and water testing of their farms was conducted, and farmers were provided with safety kits and crop protection products free of charge. The project ensured regular medical monitoring for all workers and encouraged the use of renewable energy wherever possible. School-age children of the farmers were actively enrolled for education in a school. Partnerships with like-minded industries and engagement with NGOs expanded the reach to communities, fostering collaborative efforts in the project.

Additionally, castor cultivation results in minimal waste, with the seed yielding approximately fifty percent oil, while the residual cake serves as a valuable organic fertilizer or a carbon-neutral biofuel. This efficient utilization of the crop minimizes waste and maximizes its benefits. By promoting the use of castor oil derivatives, the reliance on non-renewable fossil fuels can be reduced, contributing to a more sustainable future. The project also encountered few challenges which included remote location of these villages and social reluctance to accept new technology.





Promoting castor production in the agro-climatic region of North Gujarat has significantly improved the lives of farmers by addressing crop productivity, safety, health, and human rights issues. Over 6,200 farmers have been trained, audited, and certified, resulting in 22% higher yields reported by farmers. 2019 over 50,000 tons of certified castor seed were cultivated under Pragati. Regular farming on over 6,000 hectares aligns with the SuCCESS sustainable castor code. Approximately 6,300 safety kits and crop protection products were distributed to the farmers. A reduction of 30% in water consumption was recorded in demo plots with precise measurement and control. Over 260 individual training sessions with farmers were conducted in 2021. Pragati has led to the upliftment of underprivileged communities and the utilization of biofuel alongside effective agricultural waste management, in addition to reducing the pressure on natural ecosystems, particularly in water-scarce regions.

The project highlighted significant insights, showing that neglected crops like castor can be profitable with the right technical inputs. The initiative's holistic approach to sustainable farming and community development served as a hallmark.











Reclamation of Atladara Dumpsite in Gujarat





The Atladara dumpsite reclamation project in Vadodara, conducted between July 2018 and February 2021, is an exemplary case of biodiversity conservation through innovative waste management. Situated along the Vishwamitri River, this 20-year-old landfill posed a severe pollution threat to the river's ecosystem, including the habitat of critically endangered Gharials protected by the International Union for Conservation of Nature (IUCN).

By processing 4,21,187 cubic meters of legacy waste and reclaiming 10.5 acres of land, the project mitigated 2,91,462 metric tons of CO2 emissions and disposed of 58,897 metric tons of refuse-derived fuel (RDF). These efforts equated to the carbon sequestration of 3.59 lakh acres

of US forests in one year, the greenhouse gas emissions avoided by 84 wind turbines, and the prevention of carbon emissions from 67,061 gasoline-powered vehicles annually. Blue Planet's strategic approach, aligned with the Swachh Bharat and Make in India missions, included site preparation, waste segregation, and recycling, leading to significant cost savings of ₹250 crores for the government.



This initiative eliminated a major pollution source and preserved the Gharials' natural habitat, demonstrating the critical role of integrated waste management in biodiversity conservation and providing a sustainable model for similar projects across India.



Protecting Avifauna by Mitigating Electrocution Risks from 33kV Overhead Power Lines in Rajasthan

In the Barmer hydrocarbon block in the Thar Desert, a unique and climate-resilient ecosystem attracts a diverse range of birds, including prey, raptors, and pollinators. A 2023 biodiversity assessment by M/s ERM identified approximately 122 avifauna species in the RJ Block, with around 48 migratory species visiting during different seasons. The area hosts two protected avifauna species under Schedule I of the Wildlife Protection Act, 1972: the Indian peafowl (India's national bird) and the Eurasian Spoonbill. Additionally, seven avifauna species listed on the IUCN Red List, such as the Egyptian Vulture, Steppe Eagle, and Greater Spotted Eagle, are frequently sighted in the region.

Recently, electrocution on power lines has emerged as a significant cause of avian mortality, posing a conservation challenge worldwide. Species like peacocks, vultures, and large raptors are particularly vulnerable to electrocution from 33kV transmission lines. This threatens the survival of endangered and vulnerable species and contributes to biodiversity loss and ecological imbalance. Thus, this negatively impacts Cairn's "No Net Loss of Biodiversity" target. Such instances lead to power outages, damaging power line network integrity, and resulting in reduced power availability, which can hinder the continuous operation of oil wells' submersible pumps, thereby impacting production.

To Safeguard Birds from Electrocution and ensure "Safe Production," Cairn conducted several studies to understand bird behaviour and patterns, analysed different mitigation methods available in the market, and implemented the most sustainable and economically viable infrastructure upgrades in different stages. Some of these are:

- Installation of 33kV transmission line with insulating switches, jumpers, circuit breakers, cross arms, and jumpers at the pole with PVC insulation to prevent electrocution of large birds by touching two energized conductor/poles during perch along with individual bird diverters that comply with the technical specifications of 'Central Electricity Authority of India.'



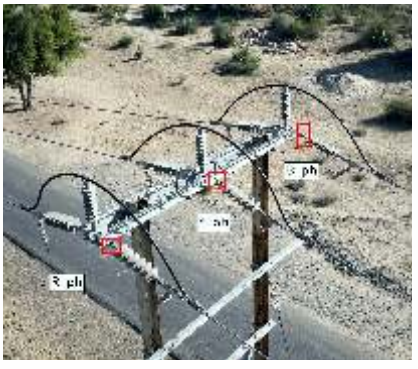
- Installation of Medium-Voltage Conductor Covers (MVCC) over the OHL network. Medium-voltage line Covers (MVLC) were provided at all poles (~2500 Poles), and the straight cross arm was replaced with a bird-friendly V-cross arm.
- Installation of 120 bird caps and 1422 spikes on double poles to deter birds from using poles as perching sites across the 140 KM OHL network in RJON Block.

These initiatives have reduced birds' hit frequency from 21 hits per year to Zero hits and helped Vedanta achieve its "Zero Harm" goal to Biodiversity. Additionally, it has improved power availability and reduced the failure of submersible pumps, leading to the continuous operation of submersible pumps in oil wells leading to increased production. It reduced maintenance costs due to reduced breakdown of power lines and their equipment.

The project faced unique challenges during implementation, which impacted its progress. These challenges included conductor erosion and slippage, leading to downtime of the overhead line (OHL) and production losses, as well as dislocation of sleeve-type MVLC covers during abnormal weather conditions. Additionally, nesting and perching of birds inside the MVLC cover provided over the jumper and PG clamp posed further challenges. To address these issues, several steps were taken. This included replacing MVLC line covers with MVCC conductor covers and installing bird guards, bird spikes, and reflectors to prevent nesting and perching of birds at potential locations along the overhead lines.

The initiative yielded key lessons, including the realization that implementing appropriate practices and initiatives can minimize an organization's ecological impact and foster harmonious coexistence between its projects and the surrounding biodiversity.

Future initiatives will involve periodic inspections of the overhead power lines (OHL) to detect conductor erosion and slippage of conductor covers. Additionally, there are plans to extend bird spikes until the end to ensure no exposed areas are left for birds to perch. Furthermore, the Casablanca Conductor will be replaced with MVCC, LA Tap-off conductor, Cable take-off-dropper conductor, Double pole jumper conductor, and Four Pole jumper conductor, among others. These measures aim to enhance the initiative's effectiveness and mitigate the risks of bird electrocution on overhead power lines.

















Pond Restoration in village Jalalabad, Ghaziabad, Uttar Pradesh

In 2023, the Coca-Cola India Foundation and 'Say Earth' collaborated to revitalize and rehabilitate Jalalabad Lake in the village of Jalalabad, Ghaziabad, Uttar Pradesh. The joint effort focused on enhancing the lake's water quality and ecosystem, fostering a clean and sustainable environment for the local community. This initiative falls under the CSR efforts of Coca-Cola India, aligning with the Government of India's Amrit Sarovar Mission, which seeks to revitalize local water sources across the nation.

This endeavor was carried out in partnership with local government officials, community stakeholders, and environmental specialists. 'Say Earth', an environmentally conscious organization led by Ramveer Tanwar, known as the Pondman of India, was the implementation partner. The organization strives to revitalize ponds and establish forest ecosystems severely affected by urbanization and industrialization. The initiative aligns with Coca-Cola's global sustainability, water stewardship, and responsible business practices to accelerate actions needed to increase water security where the company operates, sources ingredients, and impacts people's lives.

Jalalabad, a small village in Murad Nagar Tehsil of Ghaziabad district, Uttar Pradesh, is primarily rural and relies on agriculture and animal husbandry for its economy. The initiative addresses the long-standing neglect of the village's ponds (nearly three decades), which had become a dumping ground, thus affecting water quality and groundwater recharge. The project aims to promote environmental restoration and community involvement in conservation efforts through cleanup, biodiversity restoration, and community awareness.

The process of implementing pond rejuvenation commenced by marking the boundaries of two ponds in collaboration with Gram Panchayats and relevant revenue departments. Community involvement, awareness, and engagement in the initiative were enhanced through a Jal Chaupal meeting, mobilization activity, promoting community participation, and leveraging local knowledge. Clearing water hyacinths and debris from the ponds and shores required manpower and heavy machinery such as diggers, excavators, tractors, and dumpers. Plastic bags and waste were safely disposed of to restore the ecosystem. Recycled plastic was used to make tree guards and benches. Diesel and electric pumps were used to pump out water, while earthmovers were used for silt removal, creating bunds around the pond, and filling potholes in villages and fields. Damaged inlets were repaired, and new pipes were installed to improve inflow transfer efficiency. Additionally, a secondary pond with screening for primary treatment was established.

A walkway with ramps was constructed along the shoreline, with designated areas for planting native trees and shrubs to support local wildlife. The restored pond is also earmarked for future aquaculture activities, with the Gram Panchayat and local fish farming cooperative securing necessary permissions from authorities.

A significant challenge during the initiative was the lack of awareness among local residents. To address this, several steps were taken to increase visibility and encourage participation. Display boards were installed on-site to provide project information, plantation drives involved Say Earth representatives, local officials, and villagers, and promotion was conducted via online platforms and print media. These efforts successfully raised awareness and attracted more participants to join the cause.

The project's impact is evident in the enhanced habitat, increased presence of aquatic bird species, groundwater replenishment, and a 40% rise in pond water retention capacity, leading to improved water quality. As the region relies on agriculture and animal husbandry, the initiative has restored and created livelihood opportunities, improving overall health conditions and reducing vector-borne illnesses near the pond. This signifies a more conducive environment for human habitation and well-being.

For long-term sustainability, the revitalized lakes are being utilized for fish cultivation. The proceeds generated from this endeavor contribute supplementary revenue to the Panchayat, which is then reinvested in community development initiatives, fostering growth and advancement.

The project underscored valuable insights: comprehensive restoration efforts, community engagement, and sustainable initiatives restore ecosystems, boost economic growth, and improve local health conditions. Continued community involvement in post-awareness activities ensures the project's long-term sustainability and lasting impact on local ecosystems and communities.








Water Conservation and Plantation around Kadapa Mine, Andhra Pradesh

The impact of cement production on landscapes and local biodiversity can be minimized with adequate management practices and targets to reduce biodiversity loss. This presents an opportunity for responsible stewardship, aiming to maintain or improve social and environmental equity. Dalmia Bharat has developed and implemented biodiversity and ecosystem management plans in the areas of operations to maintain the ecological balance around their units. The operational practices involve a judicious blending of low and marginal-grade limestone with cement grade to enhance the life of the mine and ensure only need-based mining operations. Bird habitats have been established in some plants, alongside water bodies and tree cover, to facilitate the thriving of flora and fauna in and around these units. While it is acknowledged that even the best biodiversity management practices may result in biodiversity losses, as a robust policy measure, Dalmia Bharat has committed to achieving No Net Loss, aiming for a positive biodiversity value creation.

Responsible mining for biodiversity management is a key focus area. To minimize the impact of mining on surrounding areas, saplings are planted in the core and buffer zones of mines. Additionally, water harvesting structures are developed in mined-out areas to improve biodiversity by providing water in remote mining areas. Furthermore, the topsoil containing vital nutrients for plant growth is repurposed in the area to support plant growth.

Activities contributing to positive biodiversity value addition include:

Water conservation and harvesting measures:

The company set a target in 2015 to become water-positive by 2017. This initiative aimed to mitigate the impact on society, nature, and local biodiversity. The roadmap included:

- promoting water harvesting and conservation in mines and cement plants,
- increasing recycled water usage and
- implementing beyond-boundary water conservation through the Dalmia Bharat Foundation.

Through focused efforts and local team involvement, freshwater withdrawal was significantly reduced, primarily by minimizing water consumption in power and cement plants. This long-term endeavor led to a 14-fold increase in cumulative rainwater harvesting potential across plants, mines, and CSR activities.



The company's water-positive initiative has evolved into a movement, with the next target aiming for a 20-fold increase by 2030. The water reservoirs developed as part of these efforts have enhanced biodiversity, attracting various bird species during migration cycles. Additionally, supplying additional water to nearby villages for agriculture and drinking purposes reduces societal dependence on other local resources, contributing to the balance of the local ecosystem.

Native Tree plantations through the Miyawaki technique:

In FY21, Dalmia Bharat proposed the development of a High-Density plantation in the Kadapa mine to enhance the local biodiversity. Following expert recommendations, the Miyawaki Method was adopted for this initiative. This technique involves planting native saplings close to each other, ensuring they receive sunlight only from the top and grow vertically. As a result, the plantation becomes approximately 30 times denser, grows ten times faster, and becomes maintenance-free within three years. Additionally, environmentally friendly practices developed a hectare of land without pesticides or fertilizers. Using the Miyawaki method, the mature forest is expected to grow within 20 to 30 years, significantly enhancing the region's biodiversity compared to the natural maturity cycle of 200 to 300 years.

Furthermore, crushers for reject boulders are strategically placed to minimize waste generation and produce aggregates for building materials. Hydraulic rock breakers are used near habitation and national highways to reduce ground vibration. A cross-functional team conducts regular environmental and safety observations across mines, taking timely corrective actions per the PDCA cycle and third-party certification of ISO 14001. Dalmia Bharat's risk aversion approach minimizes biodiversity risks.



Kutki, an endangered medicinal plant conservation in Uttarakhand

India's traditional medicine systems, like the Indian Systems of Medicine (ISM), are gaining global recognition and are vital for a large population segment. However, ensuring a steady supply of quality herbal raw drugs is crucial for their sustainability. With nearly 1200 medicinal plant species in commercial use, there's a need to develop assured supply lines for each. Limited cultivation results in significant reliance on wild collections, straining wild medicinal plant resources. One such endangered species is *Picrorhiza kurroa* Royle ex Benth, commonly known as Kutki / Karu, found at 3000–5000m asl. Valued for its hepato-protective and immune-modulating properties, Kutki's natural population has sharply declined, making it "Endangered" in India.

Additionally, the crude drug is included in the "Negative List of Exports" from India. Ensuring a sustainable supply of authentic and quality herbal raw materials is crucial for the Ayurveda, Siddha, and Unani (ASU) and wellness formulation industries, especially for Himalayan species like Kutki. Farmer training and capacity building in good agricultural practices are essential to maintain raw material quality and ensure the industry's long-term viability.

Emami Ltd., in collaboration with Zandu Foundation for Health Care, initiated nursery and cultivation efforts in Uttarakhand to conserve and sustainably supply Kutki, playing a pivotal role in its conservation and ensuring a sustainable supply for user industries. GB Pant National Institute of Himalayan Environment and Development, Himachal Pradesh, conducted a study and capacity building for local farmers, while Bennett University, Uttar Pradesh, served as the main hub for research activities. Department of Biotechnology, Ministry of Science and Technology, Govt. of India provided the financial support for this project.

To facilitate cultivation, identifying the optimal germplasm for multiplication was essential. Germplasm from various regions underwent Phytochemical analysis based on API standards (The Ayurvedic Pharmacopoeia of India). Since Kutki is a temperate species, a suitable zone of Uttarakhand Himalaya was carefully selected to raise quality planting material. The best germplasm was then multiplied at a nursery spread across 5 acres in Village Ramni, district Chamoli Garhwal, at an altitude of 2700 m. Concurrently, farmers were selected and trained in Good Agricultural Practices (GAP). Approximately 40 farmers initiated cultivation, ensuring a sustainable supply to the industry.

Several challenges were also faced during the project; these included the time-consuming process of selecting elite germplasm for large-scale cultivation, which requires considerable effort. The availability of sufficient financial assistance for farmers and their readiness for medicinal plant cultivation also posed a hurdle. Challenges also arose from the lack of field-tested agro-technology for medicinal plants and inadequate infrastructure at the primary level for tasks such as drying, sorting, and storing. Another hurdle was ensuring the right price for cultivated medicinal plants and developing proper market linkages. Moreover, the long gestation period of high-altitude medicinal plants added to the complexity of the process.



The project's success can be attributed to several enabling

factors, such as strong commitment from all project partners. The presence of a qualified team of scientists and technical staff, along with excellent R&D facilities at Emami Ltd. and Bennett University, helped overcome various challenges. The robust plan increased farmers' willingness to adopt medicinal plant cultivation. Emami Ltd. and Zandu Foundation for Health Care provided ongoing support to farmers at every stage of the implementation process. The establishment of firm marketing linkages during the project and supportive Uttarakhand state policy for medicinal plant cultivation and conservation were other enabling factors.

Cultivating medicinal plants has provided farmers with alternative livelihood options, diversifying their income beyond traditional crops. Through training in good agricultural practices, farmers have witnessed improved returns from medicinal plants and other crops due to enhanced agricultural techniques and information on high-yielding varieties. This has led to increased receptivity among farmers to new technologies. Furthermore, large-scale cultivation of kutki benefits pharmaceutical industries by providing pure drugs sustainably and reducing exploitation pressure on natural populations, thereby contributing to species conservation in their natural habitat. Overall, farmers are experiencing better returns for their produce.

The project yielded important insights, emphasizing the urgent need to conserve all critical medicinal plant species, particularly as many enter India's RET (Rare, Endangered, and Threatened) category. This underscores the importance of species-specific conservation and cultivation plans. Adhering to GAP (Good Agricultural Practices) and GFCP (Good Field Collection Practices) at the primary level is crucial. Providing financial support to farmers involved in medicinal plant cultivation, ensuring marketing assistance, and addressing price mechanisms for cultivated medicinal produce are essential for sustaining the medicinal plant sector and preserving biodiversity.

Building on the success of the Kutki initiative in Uttarakhand, Emami plans to replicate similar efforts in other suitable regions. Another project focusing on the cultivation and conservation of Chirayta (Swertia chirata Buch.-Ham, Family Gentianaceae) has been initiated. Chirayta, like Kutki, is also listed under the “Negative list for Export” and categorized as “Threatened,” highlighting the urgency of conservation efforts for this commercially important species.









Project Madhu Shakti - Sustainable Bee Keeping in Kumaon Region of Uttarakhand

The adverse impact of human activity on the environment is palpable. The drop in the population of bees and other pollinators may partly be attributed to such activity. Honeybees, both domestic and wild, contribute to approximately 80% of global pollination. They play a crucial role in pollinating 70 of the top 100 crops vital for human consumption, collectively supplying 90% of the world's nutrition.

FMC Corporation, supported by GB Pant University, Pantnagar, initiated Project Madhu-Shakti. Where "Madhu" means honey in Hindi while "Shakti" refers to female energy. This three-year project, recently launched in Uttarakhand, aims to harness the potential of rural women and beekeeping in an entrepreneurial endeavor. By teaching rural women how to become beekeepers, Madhu-Shakti aims to expand bee colonies, help rural women earn additional income, help flora thrive, encourage female entrepreneurship, and educate farmers on the effective use of pesticides.

Uttarakhand was selected for Project Madhu-Shakti due to its abundant herbs and natural flora, which provide an ideal environment for honey production. Moreover, 53% of its population resides in rural areas, of which 60% fall below the poverty line. The project will give an impetus to entrepreneurship in the region, resulting in additional income accruing economic and societal benefits. Uttarakhand produces just 12,500 metric tonnes of honey annually despite its rich flora. However, initiatives like Project Madhu Shakti are poised to increase this figure substantially.

In the project's initial phase, three groups comprising 25 women farmers each from Sitarganj, Kotabagh, and the towns of Almora and Ranikhet underwent a two-week training in beekeeping at GB Pant University. The project utilizes beehives of the Apis Mellifera variety, sourced from authentic sources, with better-performing colonies being maintained and multiplied at the Honeybee Research and Training Centre (HBRTC) at GB Pant University.



Continuous stock culture maintenance ensures a steady supply of beehives for farmers. Following their training as Master Trainers, the 75 women received beehives and returned to their villages with them. The presence of bees in these villages has since increased. Beekeepers will earn income when the honey produced by their beehives is collected and aggregated at GB Pant University. Payment will be promptly made to beekeepers following quality checks on the honey. The honey produced will be branded with GB Pant University's name as part of the initiative. GB Pant University's honey brand will be closely associated with the women trained under the Madhu Shakti project.

The increased number of bee colonies will lead to a substantial rise in pollination rates across Uttarakhand. This will benefit farmers reliant on cross-pollination and horticulturists, given the significant presence of horticulture in the state. Consequently, the state's biodiversity will flourish, enriching farmers and the environment. With enhanced outputs and incomes, farmers throughout the region will experience considerable growth, further bolstering sustainable farming practices.

Project Madhu Shakti will provide an opportunity to formulate mechanisms around how pesticides can be safely used on commercially important crops without harming benign pollinators, including bees. Such trials will be conducted in farmers' fields to demonstrate first-hand to farmers how best to use pesticides safely. This initiative will be crucial in protecting the bee population from potential harm and ensuring their continued well-being.

Despite its early stages, the project has shown promising insights. Educating farmers about pollination and pesticides leads to the adoption of sustainable farming practices, which also benefit biodiversity in the region. This approach mitigates the threat posed by the indiscriminate use of pesticides.










Biodiversity Conservation Park & Garden in Haldia, West Bengal

M/s Haldia Energy Limited (HEL), a group company of the RP-Sanjiv Goenka Group has a coal-based thermal power plant located at Jhikurkhali village near Haldia town in Purba Medinipur district in the Indian state of West Bengal. HEL has prioritized sustainable growth with biodiversity conservation as a cornerstone. This includes a butterfly conservation park, a medicinal herb garden, a spice garden, and diverse tree species. Organizations like UNDP, BMC at the block and state levels, and other government bodies have been actively involved in most activities. HEL remains committed to the ethos of "The earth has enough for everyone's need but not for everyone's greed."

The land was primarily low-lying with seasonal waterlogging and was dotted with ponds. Excluding the barren patches, the land was mainly utilized for paddy cultivation. However, there was rarely any wildlife in Haldia due to the dearth of natural forest cover. Moreover, a few species that were once common to this rural landscape became rare due to loss of habitat, hunting activities, and the people's lack of acceptance/awareness. This stemmed from their being associated with damages to poultry and domestic livestock. HEL not only improved the conservation-oriented awareness amongst the local people but also improved their mindset through the seedling distribution of endemic floral species and frequent meetings to propagate the essence of sustainability of the environment.

The conservation area, overseen by HEL's Managing Director and Executive Director, is managed by the Environment Management Committee. This committee develops management plans and monitors conservation activities. Following major initiatives were undertaken in Haldia for Biodiversity conservation:

- During construction, a ***green belt*** was established around the power plant. As the area grading and land excavation work progressed, excavated soil was used for ***plantation areas***, and bottom ash was utilized for soil conditioning later. Over 1.25 lakh saplings of fifty types of tree, shrub, herb, and grass species have been planted since 2013.
- ***Project' Titli Rani'***, or Butterfly Conservation Park, commenced as an open-air and ex-situ conservation initiative. The project accommodates 50 types of host plants and nectar plants, which attract butterflies by providing a conducive environment for feeding and egg-laying. To date, almost 30 types of butterflies have been observed in the garden.





- An Ayurvedic garden under the ***'Rishi Krishi' project*** to conserve rare medicinal species and promote natural remedies. The garden accommodates nearly 100 types of Ayurvedic species, using organic pesticides specially manufactured for herbal plants.
- The **"Swad *Ka Bagicha' Spice Garden*** conserves and produces 30 spice species originating from various locations in India.
- A 106-acre ***Biodiversity Conservation Park*** with ponds, water reservoirs, and natural vegetation to support local flora and fauna has also been established.

Due to these efforts, the campus now boasts 38 bird species, including winter migratory ones like the Common Kestrel, Green Sandpiper, and Brown Shrimp. Over 1500 Lesser Whistling Teals were spotted in water bodies on the premises. The plant area provides a secure habitat for various mammalian species, such as the golden jackal, Jungle Cat, and Small Indian Civet.

HEL is a power generation company using fossil fuel. Though such industries are perceived as sources of pollution, the organization has demonstrated its larger environmental responsibility objectives in both letter and spirit as it continues to work towards promoting a sustainable environment where diverse flora and fauna thrive naturally. It has undertaken a slew of above measures to arrest environmental damage and reverse the decline of the various forms of nonhuman life and their habitat around its area of operation.

Critical insights from these efforts highlighted that the remarkable diversity of species in an area contributes to creating a micro-habitat, fostering a rich environment for various flora and fauna. This supports both local and migratory bird and butterfly species, enhancing biodiversity. Implementing such initiatives can significantly contribute to the flourishing of diverse ecosystems.

Currently, two new projects, "Panchavati Vatika" and "Miyawaki Forest," are underway in collaboration with the West Bengal Biodiversity Board and the Government of West Bengal, facilitated by Haldia Energy Limited. "Panchavati Vatika" features five trees known for pollution reduction and oxygen generation. The "Miyawaki Forest" boasts dense foliage, with plant growth ten times faster, making a plantation thirty times denser than usual. In response to the threat posed by water hyacinth to the aquatic ecosystem in Southern West Bengal, HEL has also initiated a project to recycle it into bio-fertilizers, enhancing soil nutrient levels. Additionally, HEL is embarking on agroforestry involving Amla (Emblica) farming in Kukrahati, Purba Medinipur, leveraging its medicinal properties and vitamin C content.

The organization, as a responsible power producer, understand that respecting biodiversity and ecosystems must be an integral part of any business activity. HEL therefore strives to ensure that all activities in the organization are carried out in a sustainable manner, by integrating conservation and promotion of the natural heritage into the business strategy.



HCLTech

Harit Upvan - Habitat Restoration and Enhancing Biodiversity in Sorkha, Uttar Pradesh

The 4.5-hectare land in Sorkha village of Gautam Budh Nagar district, previously barren and filled with invasive alien weeds and construction waste, was converted into a Harit Upvan. Once believed to be on the banks of the Hindon River, urbanization and agricultural activities shifted the river's course, leaving the land unused and converted into a dump yard. Additionally, cattle grazing, and encroachments threatened the area's integrity and biodiversity. Low groundwater levels potentially impacting the ecosystem's sustainability, and the heat island effect caused by insufficient forest and tree cover exacerbating local temperature extremes. The dump yard has now been transformed into an urban mini forest through a partnership between the HCLFoundation, Give Me Trees Trust, the district administration, the local community, and volunteers. The initiative aimed to increase green cover and habitat restoration, improve soil and water quality through analysis. As well as enhance tree health and biodiversity index for better air quality and temperature regulation, while engaging residents, public agencies, and the private sector in protecting the urban forest.

The district administration allocated land for the initiative. Systematic tools and techniques such as deployment of camera traps, transect walks, point counts, opportunistic surveys, and habitat surveys were introduced, accompanied by hands-on training to prepare the biodiversity record document.

Traditional afforestation techniques, including land demarcation, fencing, contour survey planning, soil-bed mapping, and soil testing, were employed. The process entailed several vital steps, such as soil preparation, composting, mulching, the installation of water harvesting structures, and the establishment of nurseries. Followed by careful selection of native saplings, including flowering, fruiting trees, shrubs, herbs, and climber species. Lastly, selected saplings were planted with the creation of constructed wetlands for runoff water treatment. Field-based capacity building of ground staff and communities was conducted, along with initiatives like bird watching and nature walks to enhance scientific knowledge.

Post-plantation activities like de-weeding and mulching are ongoing and involves active participation of students, the local community, and HCL Tech Volunteers. Sorkha now boasts over 100+native species and 87,000+ standing trees, creating a habitat for urban biodiversity, including residential and migratory birds, butterflies, amphibians, reptiles, and small mammalian species.

Challenges in undertaking this habitat restoration included poor in nutrition and fertility land and soil conditions, compounded by dumping and solid waste. The lack of proper drainage systems, channels, and boundaries posed difficulty in implementing the site plan. Additionally, high chemical content and toxins in the water adversely affected plant health in the vicinity. To address these issues, trenches were laid around the perimeter to deter feral animal encroachments and facilitate wastewater management. A constructed wetland was established to treat wastewater from neighbouring areas, enhancing the natural purification processes.

Undertaken as a CSR initiative, so far 77 bird species belonging to 30 families of 16 orders were recorded from Harit Upvan Sorkha. A globally Endangered Egyptian vulture (*Neophron Percnopterus*) and Near-Threatened Alexandrine Parakeet (*Palaeornis Eupatria*) (IUCN, 2021) was one of the recorded species. Other than bird species, 16 butterflies, dragonflies, and damselflies, 10 reptiles & amphibians, and 13 mammalian species have also been recorded through various tools and techniques from Harit Upvan Sorkha. Reduced water run-off and waterlogging enhanced regional air quality in and around, habitat for terrestrial and aquatic wildlife, and temperature regulation. The total soil carbon stock was calculated to be 69.59 tonnes and total CO2 sequestered was calculated 526.18 tonnes from Harit Upvan Sorkha. It also improved the local populace's physical and mental health and enhanced knowledge of ecological processes through campaigns. Overall, it enhanced biodiversity, improved soil conditions, and decreased temperatures.

The insights from this initiative emphasize the vital role Mini-urban forests play in regulating the temperature of their surrounding areas and providing habitat for numerous species. Successful restoration projects often result from collaboration between private entities, government agencies, and local communities. The inclusion of native species is particularly important in these efforts, contributing to the resilience and sustainability of the restored ecosystem. The detailed baseline information gathered about local biodiversity is a valuable reference for future studies, raising awareness about conservation efforts and highlighting the positive impact of mini-urban forests in urban areas.

HCLFoundation has also been conducting Urban Biodiversity workshops across various locations, covering Sundarbans' coastal regions, Uttarakhand's mid hills, and mainland northern and central Indian HCL locations. Moving ahead, HCLTech, through its foundation, is planning additional studies at rejuvenated sites across India to explore other biodiverse taxa and their responses. Capacity building for ground staff and community members will be prioritized in the coming months, with university students in environmental and allied sciences receiving training for these studies in collaboration with the HCLFoundation.



Eco restoration of Hirakud Ash Mound in Sambalpur, Odisha



The Hirakud Ash Mound, established in 1993, has accumulated approximately 80.8 Lacs Tons of ash by March 2022. Disposal to the mound ceased in March 2022, with only a designated stretch remaining active for emergency storage. Over the past two years, 100% ash utilization was achieved through dispatch to cement industries, road projects, brick plants, and the development of low-lying areas.

The project undertaken by Hindalco Industries Ltd. includes the development of a biodiversity and ecological baseline for the Ash Mound and its 10 km buffer zone. Stakeholder consultation was conducted to gather input for ecological restoration efforts. A comprehensive Ecological Restoration Plan was prepared specifically for the Ash Mound, outlining strategies for enhancing biodiversity and ecosystem health. Additionally, the project included audio-visual documentation of the ecological restoration process, providing valuable insights and documentation of the restoration efforts.

In 2023, the on-site reclamation and restoration efforts were initiated, including vegetation restoration, soil stabilization, and erosion control measures. The project began with a Stability Assessment by IIT Delhi, evaluating factors like soil composition and erosion risk. This led to the formulation of an Eco-restoration Plan, addressing vegetation restoration and erosion control. A Closure Application was submitted to SPCB, followed by site inspections by OSPCB to ensure compliance. Once completed, OSPCB provided Final Closure Certification. Reclamation of the Ash Mound commenced which involved levelling, soil capping, and amender mixing for

soil stabilization. Native trees and shrubs were then planted with proper spacing, selected based on local adaptation and ecosystem needs.

Through vegetation restoration and soil stabilization measures, the project has revitalized the ecosystem, promoted biodiversity, and restored natural habitat. It has created habitats suitable for native and migratory fauna, offering essential resources and shelter. Additionally, by mitigating erosion and stabilizing the soil, the project has prevented contamination of underground and surface water sources, safeguarding water quality and environmental health. Furthermore, the rejuvenation of the site has transformed it into an aesthetically pleasing environment for local communities, enhancing the area's natural beauty and providing recreational spaces for residents to enjoy.









Green Belt establishment in OSR land in Sriperumbudur, Tamil Nadu



In 2020, Hyundai and SIPCOT collaborated to designate approximately 12.16 acres of land for open space reservation (OSR) to promote environmental sustainability, with the Center for Sustainable Development (CSD) as the implementation partner. As a CSR initiative by the Hyundai Motor India Foundation, the Hyundai Green Belt project incurred a total project cost of Rs 1.37 Crores over three years (2020–2023). The initiative aimed to achieve ecological balance by planting 5000 trees as part of an afforestation program. Over three years, HMIF aimed to continue promoting ecosystem balance and increasing bird and butterfly species diversity in the area.

The project focuses on promoting green cover in SIPCOT Industrial Park to enhance ecosystem services essential for human well-being and biodiversity. Its primary goal is to convert barren land into cultivable land by increasing species diversity. This includes establishing facilities such as nurseries, apiculture, herbal plantations, bio-fencing, vermicomposting pits, vegetable gardens, and pet animal rearing. Additionally, awareness campaigns target the public, school children, institutions, and industries. Citizens are encouraged to become green champions by receiving saplings free of charge. Furthermore, tribal laborers in the OSR area are equipped with gardening and entrepreneurial skills to promote sustainable livelihoods.

Liaison with SIPCOT officials, tribal families' involvement in program implementation, and continuous maintenance by the Hyundai Motor India Foundation enabled the project's successful implementation.

During the monsoon season, the proximity to Sembarampakkam Lake exposes the OSR land to excess water flow, leading to soil erosion and tree damage from strong winds. Measures such as reinforcing bunds and ensuring proper drainage have been implemented to address this. Additionally, trees in precarious condition were provided additional support to withstand cyclones. In the summer season, contract laborers residing in nearby villages inadvertently cause fire incidents by discarding matchsticks in the OSR land. HMIF has deployed dedicated security personnel to monitor the 12.16 acres of land to prevent such incidents. Regular patrols are conducted twice daily to ensure safety and to avoid fire outbreaks.

The project has resulted in numerous sustainable benefits, including the establishment of over

40 species of native plants, the creation of a nursery with 43,281 saplings (22,581 distributed to citizens), and the sequestration of over 3000 tons of CO2in the last three years with an 80% survival rate. Additionally, the initiative has provided employment opportunities for more than 15 socially backward families (scheduled tribes), resulting in an annual income of INR 2.59 Lakhs. It has also positively impacted over 21,000 people in the vicinity of the plant and contributed to the enhancement of forest-based sustainable livelihoods.

The project's insights underscore the importance of considering the entire ecosystem, including various flora and fauna and the diverse habitats within open space reserves. Successful projects necessitate a long-term commitment due to trees' lengthy maturation period and ecological restoration efforts' generational span. Prioritizing native tree species is critical for ecosystem health, as they are well-suited to the local environment and enhance biodiversity.

Engaging the local community fosters a sense of ownership and responsibility, whether through volunteer events or educational programs. Regular monitoring is essential to assess the project's success and guide management decisions. Collaboration with government agencies, environmental organizations, and stakeholders is vital for project success. Remaining adaptable and willing to learn from mistakes is crucial. Adaptive management involves adjusting strategies based on ongoing evaluation.

HMIF is expanding its green initiatives, transforming projects in Andhra Pradesh into Sustainable Social Afforestation ventures. The CSV team plans to launch OSR 2.0, enhancing the existing land with a Sustainable Livelihood Empowerment Project post-Oct 2024. Additionally, HMIF has executed similar projects in Haryana, including Green Metro pillars and park restoration, planting over 2 lakh trees across four districts.









Agroforestry and Sustainable livelihoods for Chenchu Tribals in Nandyal, Andhra Pradesh

The project covers four Chenchu tribal habitations along the foothills of the Nallamala forest region. Its primary objectives include:

- integrating trees with food crops to improve productivity and environmental sustainability,
- protecting and stabilizing ecosystems,
- promoting resilient farming systems to mitigate risks during extreme climatic events.

Thus, land is efficiently managed to increase and restore productivity, and the income of tribal households is enhanced by establishing sustainable livelihood sources through tree-crop integration. By pursuing these goals, the initiative aims to foster environmental resilience and uplift the livelihoods of the local tribal community. The project was undertaken as a CSR initiative through the Hyundai Motor India Foundation, with a total investment of Rs 3.31 crores.

A total of 116 tribal farmers in these four villages were identified, covering an area of 246.61 acres of barren land to be transformed into an agroforestry model. The project involved the Village Renewal Organisation (local NGO) as an implementation partner and collaborative effort with various government departments, including Tribal Welfare, the Department of Forestry, the Department of Horticulture, and the Mahatma Gandhi National Rural Employment Guarantee Scheme.

Key project activities included motivating farmers to clear the Prosopis jungle and convert barren land into orchard plantations, conducting technical feasibility studies to select appropriate plants and varieties based on climate, topography, rainfall pattern, and soil health, and providing bore wells and drip facilities for plantation, fencing lands and trees with chain link mesh wire to protect them from wildlife and cattle. Simultaneously encouraging farmers to undertake horticulture block plantation on a cluster basis to boost farm income, distributing horticulture/forestry plants such as mango, guava, and citrus. Farmers were also trained on planting techniques and post-plantation maintenance and were supported with incentives for replantation, manuring, watering, pruning, and plant protection. Assistance with geotagging individual farms using GPS for monitoring plant growth and forming Farmer Producer Organizations (FPOs) to enhance farmers' competitiveness in emerging market opportunities was also undertaken.

The efforts were met with a few obstacles, some of them being groundwater availability, which is limited in Narapureddy Kunta village, and no electricity for bore wells. However, the village has two bore wells connected to solar pump sets and utilizes drip irrigation systems. Despite lands being granted to tribals under the Recognition of Forest Rights Act (RFR Act) for cultivation, stringent rules from the Forest Department posed challenges. Additionally, wage payments under the Mahatma Gandhi National Rural Employment Guarantee Scheme are irregular, and it often takes months to be released to the tribals, which was another hurdle.

The project addresses multiple interconnected issues, such as land degradation, unemployment, and migration, which exacerbate tribal communities' alienation while

underscoring the importance of addressing food security for particularly vulnerable tribal groups (PVTGs).

Key enabling factors for the project's successful progress included the strong desire of tribal communities to develop their lands for agriculture and plantation, although hindered by a lack of input capital support. Beneficiary participation in project activities has been impressive, aided by land suitability and favorable climatic conditions for horticulture and food crops. Additionally, the proximity to marketing facilities in Nandyal, the district headquarters, and support from state government departments such as Tribal Welfare, Forestry, Horticulture, and the Mahatma Gandhi National Rural Employment Guarantee Scheme have contributed to the project's success.

The initiative has generated a substantial impact, with 250 acres of previously barren land now transformed into a valuable asset benefiting 116 families across four habitations. Plantation efforts have successfully covered 125 acres, totalling approximately 14,555 plants. Additionally, tribals now have access to bank loan facilities supported by the plantation on their cultivated lands. This initiative has significantly improved the social and economic status of the tribals, leading to their transformation into farmers, with farming becoming their primary occupation.

Key insights from the project highlight the importance of devising a convergence plan before commencing, outlining the roles and resources allocated by the government and other stakeholders. It is crucial to secure all necessary clearances and approvals from relevant government departments in writing to mitigate uncertainties throughout the project implementation process. Additionally, there is significant potential and urgency to expand the project to an additional 250 acres of land for plantation in neighbouring tribal villages within the Nandyal district.



Project Vanya Jeevan Across Forests and Tiger Reserves Nationwide

In FY2021-22, Project Vanya Jeevan was launched across 58 forests and tiger reserves in India, aiming to conserve biodiversity and promote sustainable livelihoods. This nationwide approach ensures a comprehensive strategy with the potential for significant impact while tailoring efforts to address the unique challenges and requirements of each forest, tiger reserve, and surrounding community. The initiative is inspired by global best practices and emphasizes community engagement, awareness, and sustainable management. Operating in challenging terrains and remote areas, it aims to reduce human-wildlife conflict and foster local conservation champions. Through a co-creative approach, it collaborates with stakeholders to design effective interventions. It is undertaken as a CSR initiative through the Bank's CSR implementing arm - ICICI Foundation for Inclusive Growth (ICICI Foundation).

Starting in Sariska Tiger Reserve, Rajasthan, and Tadoba-Andhari Tiger Reserve, Maharashtra, it expanded to other reserves like Satpura, Bandipur, Similipal, and Valmiki. The project aligns with reserve guidelines, addressing specific needs and issues. Interventions include wildlife protection, habitat restoration, watershed development, environmental conservation, and sustainable livelihoods for local communities. Efforts focus on quality, sustainability, and need-based implementation. Efforts include enhancing wildlife protection with 81 patrolling vehicles, 27 animal rescue vans, four rapid response vehicles, one veterinary van, and one animal ambulance. These resources bolster wildlife monitoring and healthcare, promptly addressing injuries and medical issues. Habitat Restoration and Conservation efforts include:

- constructing enclosure for Barasingha - Enclosure is one only, in the first phase 16 brasingha deers were introduced in the enclosure.
- developing 4,115 acres of grasslands, and
- removing invasive weeds from 14,480 acres to restore natural habitats for wildlife.
- About 100 solar-powered borewells have reduced electricity consumption and increased water availability for flora and fauna.
- Grid-free power through installation of solar panels and other equipment in Tadoba Andhari Tiger Reserve and other solar power support in various forests have reduced conventional energy consumption thereby lowering the carbon footprint and preventing electrocution of animals and birds.
- Construction of approx. 60 water holes and 75 bunds have enhanced the water availability, water storage and reduced the distance for the animals to access drinking water.
- Over 34,000 beneficiaries have been positively impacted with an additional source of income and alternative sustainable livelihood options.
- An average annual income enhancement ranging from INR 8,500 to INR 68,000 per family has been generated through the livelihood activities across the forests.

Watershed Development activities involve creating and rejuvenating water sources like ponds, watering holes, check dams, and bunds to ensure continuous water availability. Environmental Conservation initiatives comprise planting 8,500 fruit, medicinal, and herb trees, implementing afforestation, grid-free electricity in Tadoba, soil erosion prevention, solar borewells, rainwater

harvesting, and fire-fighting machines to mitigate deforestation and environmental pollution. The initiative addressed the Human-wildlife conflict, depleting forest cover, electrocution of animals and deteriorating health of wildlife, environmental degradation, and overexploitation of forests.

The primary facilitating factor here was the active involvement of state forest departments, officials, and local communities. Designing interventions tailored to specific needs amplified the positive impact. Creating additional livelihood opportunities for local communities, as well as training and capacity building, played a crucial role. This included offering training in two-wheeler repair, electrical skills, agriculture, and allied activities, reducing forest dependency and human-wildlife conflict. Adherence to government guidelines, utilization of the latest technology and equipment, provision of alternative livelihood options, and support to residents in the periphery were instrumental in the initiative's success. Additionally, nominating environmental stewards from the local community and forest officials further contributed to its effectiveness.

Securing approvals and permissions from state departments posed a significant challenge, leading to delays and necessitating adjustments to planned initiatives. Convincing stakeholders and fostering collaborative interventions was also challenging. Designing interventions that balanced the interests of all parties while adhering to norms and project values was a key concern. Furthermore, shifting communities towards alternative livelihoods, raising environmental awareness, and cultivating them as stewards demanded considerable effort.

Insights gained from the initiative highlighted the Importance of perseverance despite challenges, seeking quality alternatives, and designing projects collaboratively with participation from all stakeholders. Need assessment is crucial for successful interventions, and clear communication of project values and benefits is essential. These efforts have been instrumental in the successful execution and implementation of the project.

The initiative will expand to include other forest and tiger reserves that still need to be covered, with additional initiatives tailored to existing forests based on needs assessments. New elements will be evaluated to further biodiversity and environmental conservation goals. ICICI Bank emphasizes collaboration and co-creation, aligning with robust governance and legal compliance. Partnering with other institutions will leverage resources and expertise for a greater positive impact.



Transcontinental Relocation of Cheetahs to Kuno National Park, Madhya Pradesh

Founded in 1959, Indian Oil Corporation Ltd (IOCL) is a leading Oil & Gas public sector entity under the Ministry of Petroleum and Natural Gas. Achieving 'Maharatna' status in 2010, IOCL prioritizes environmental stewardship, notably through CSR initiatives like translocating 20 Cheetahs from Namibia and South Africa to Kuno National Park, Madhya Pradesh, reintroducing the species to India after their extinction in 1952.

Historically, Cheetahs thrived in India, Iran, and Africa, but habitat conversion, declining prey, and hunting led to their extinction in India by 1952. Their absence highlights the need for conservation efforts. Categorized as 'Vulnerable' by the IUCN and protected under CITES, Cheetahs face threats to their habitats. Reintroducing them is crucial for ecosystem restoration and the protection of other species like the Caracal, Indian Wolf, and endangered bustard species.

The restoration of the Cheetah population in India aims to establish breeding populations in safe habitats across its historical range and restore open forest and savanna ecosystems, thereby benefiting biodiversity and enhancing ecosystem services. The initiative began with a consultative meeting on Cheetah reintroduction in Gajner, Rajasthan in 2009. Subsequent surveys conducted by the Wildlife Institute of India (WII) identified 10 potential sites for Cheetah introduction, with specific recommendations for each. Considering the IUCN 'Guidelines for Re-introductions' and the presence of a suitable habitat with an adequate prey base, Kuno National Park (KNP) in Madhya Pradesh was deemed ready for receiving Cheetahs. This decision was facilitated by prior initiatives undertaken in KNP for reintroducing Asiatic lions.

Efforts to translocate and reintroduce Cheetahs in India began under the Ministry of Environment, Forest and Climate Change's 'Species Recovery' Program. As part of the first phase of Indian Oil's CSR project, 'Intercontinental Translocation of Cheetah,' a group of 5 male and 3 female Cheetahs was flown from Namibia to Kuno National Park in 2022. Subsequently, 12 more Cheetahs were translocated to KNP from South Africa.

The National Tiger Conservation Authority (NTCA) manages the Cheetah translocation project, providing administrative support, while the State Government oversees implementation. The WII offers technical guidance, conducting scientific surveys and liaising with the scientific community on behalf of KNP. Indian Oil funds major components of the project for four years, up to FY 2024-25, with implementation by the Madhya Pradesh Forest Department under NTCA's supervision. The Madhya Pradesh State Office (MPSO) of Indian Oil monitors resource utilization.

The initiative involves establishing a 500-hectare predator-proof enclosure, fitted with GPS/GPM/Satellite transmitters, facilitating a soft release to minimize Cheetah dispersal. The Madhya Pradesh Forest Department prepared the enclosure by clearing brushwood and excess Rimjha trees, planting palatable grasses. Initially, Cheetahs were housed in separate compartments, undergoing quarantine. Subsequently, they were released into larger enclosures to adapt to Kuno National Park's landscape.

In addition to grassland conservation, habitat management activities include developing three ponds for Cheetahs' drinking water, installing solar borewells, and rainwater harvesting with groundwater recharge. Maintenance of water pipelines is also ongoing in phases.

For Cheetah protection and monitoring, construction of patrolling camps, a well-equipped training hall for field staff capacity building, and road maintenance are underway. Solar lights are being provided for enhanced visibility. Furthermore, procurement of field and patrolling vehicles, equipment like JCB, fire brigade, horses, camels, and safety accessories such as shotguns, flashlights, and wireless handsets is in progress. Accommodation for field staff will be upgraded, along with equipping them with the latest technological tools for surveys, patrolling, and protection.

In KNP, situated within the Sheopur - Shivpuri forested landscape, several villages exist within a 10 km radius. The Sheopur district hosts a significant tribal population, primarily Sahariya and Mongya tribes. Eco-development activities and alternate livelihood training will be provided to these communities as part of the initiative, along with community support. Additionally, a rescue center and hospital building will be constructed, along with procuring animal ambulances, multi-purpose vehicles, and capture equipment for optimal veterinary healthcare.

To raise awareness about cheetah protection, KNP celebrated International Cheetah Day on December 4, 2022. The celebration included a 6 'Cheetah Run', 'Nukkad Natak' and 'Kathputli Show' was organized along with 'Cheetah Mitra Sammelan'.

This initiative is poised to conserve and preserve habitats for a thriving Cheetah population in India, contributing to the restoration of grassland, scrub, and open forest ecosystems and enhancing associated ecosystem services. It will also safeguard several threatened and endangered species at lower trophic levels. Additionally, efforts to introduce Cheetahs pave the way for potential lion reintroduction projects. Moreover, the initiative is expected to boost livelihood opportunities for local communities through ecotourism, supported by skill development programs aimed at enhancing their capacity for effective park management.

IOCL's commitment to biodiversity conservation and ecosystem restoration is evident across multiple initiatives. It has spearheaded urban afforestation projects using Miyawaki's method, planting over 80,000 trees in 13 cities. With a tree cover exceeding 40 lakhs, including 25 lakhs in green belts and eco-parks. In 2021-22, it planted over 20 lakhs mangrove and Casuarina saplings across 122 hectares in Purba Medinipur, safeguarding coastal ecosystems. IOCL successfully translocated threatened coral reefs during pipeline renovations in Vadinar, Gujarat. Additionally, it rejuvenated 37 water bodies by removing pollutants.

Moreover, IOCL supports the care of 'Critically Endangered' one-horned rhinos in zoological parks and collaborates with wildlife departments to safely release Olive Ridley Turtles' hatchlings. It has also partnered with Wildlife SOS to establish an Elephant Rehabilitation Centre in Mathura, Uttar Pradesh, providing a nurturing environment for elephants.







Restoration of Village Commons and Sustainable Agriculture Promotion Across Indian States

ITC's operations and value chains rely heavily on nature, encompassing vital resources such as water, essential raw materials, agricultural commodities, and ecosystem services. While ITC implements resource efficiency initiatives within its operations to mitigate its impact on nature, it also engages in various initiatives within the catchment areas of its agri value chains and where its units operate. The biodiversity conservation programme aims to conserve and reduce impacts on shared resources, improve community livelihoods and restore eco-system services provided by nature such as regulatory (water, pollination etc.) and provisional (fuelwood, fodder etc.) services. There are two approaches in improving biodiversity:

- Community-driven biodiversity conservation at the watershed level.
- Focusing on landscape renewal and rehabilitation of degraded plots to achieve mosaic restoration.

Assessing the mutual impacts and dependencies of agriculture and biodiversity and planning appropriate responses is done by using methodologies and tools like Sustainable Agriscapes and Biodiversity Risk and Opportunity Assessment (BROA) etc. Responded to the risks by taking up initiatives like forest fringe area development to reduce pressures on forests, sustainable natural resources utilisation – climate smart agriculture, water use efficiency, agrochemical management, soil protection, and energy conservation cum GHG reduction etc.

As part of commons restoration, ITC works with the community ensure ownership, success and livelihood improvement and the program covered, multiple states, including Rajasthan, Madhya Pradesh, Maharashtra, Haryana, Himachal Pradesh, Uttar Pradesh, Punjab, Bihar, Andhra Pradesh, Telangana, Tamil Nadu, and Karnataka.

Commons Restoration involves three main components and promote community institutions.

- Map the degraded village commons and promote biodiversity conservation committees, such as Charagah Vikas Samitis (CVS), Banjar Bhoomi, and Charagah Vikas Samitis (BBCVS) etc.
- Community institutions to be trained and helped in taking up release of encroachments if any, decide on regulating grazing and protection of the plots and prepare the physical work plan along with the institutions.
- Implementing physical work - soil and moisture conservation to facilitate in-situ regeneration of native flora and planting of native tree species in highly degraded areas, accompanied by protective measures.

The initiative addresses encroachment on village common areas, which leads to loss of green cover and habitat decline, deterioration of village commons due to excessive grazing and firewood collection, and a lack of awareness among rural communities regarding the importance of protecting common areas and their ecosystem benefits.

Establishing enduring partnerships with multiple stakeholders, where community ownership is central, served as a significant enabler. Key aspects were the active involvement of local communities and strong livelihood connections between locals and village commons. Multi-stakeholder partnerships with government bodies and technical experts further facilitated the initiative's success. However, at some sites, clearing encroachments from village commons proved challenging. Community mobilization to foster ownership and achieve sustainable outcomes was another hurdle. Additionally, local communities needed to be made aware of the benefits of healthy village commons for overall health and livelihood.

The program's success is evident in the tangible benefits it brings. An acre of restored village commons annually provides approximately 1 ton of fodder and 0.5 tons of fuelwood. In few regions in Andhra Pradesh state, communities generated income of around Rs. 1-1.2 lakh per acre each year through controlled harvesting of native species like uphill broom. Similar benefits are observed with other plantations, such as kejri and medicinal plants elsewhere. Moreover, the initiative leads to improved groundwater levels in adjacent fields and increased bird predator populations, contributing to crop pest control.

Following insights were found through technical studies conducted in FY 2022-23, in collaboration with external agencies:

- Above ground carbon stocks 15% to 148% higher than control.
- Soil Organic Carbon 20% to 38% higher than control.
- Wide variety of flora.
- Healthy Simpson Index (10) for Homogeneity & Shannon Index (2.55 to 3.87 range) for Diversity.

As of 2022-23, the cumulative area of Biodiversity Plots is 5,140 units, whereas the Biodiversity Conservation Area spans 2,90,688 acres. In 2022-23, ITC's community-driven biodiversity efforts have conserved over 1.56 lakh acres, bringing the cumulative total to over 2.9 lakh acres. ITC aims to cover 1 million acres by 2030, prioritizing actions to minimize impacts across land, freshwater, and atmosphere.







Mangrove Restoration and conservation in Dolvi, Maharashtra

The JSW Group, a leading Indian conglomerate in sectors like steel, energy, infrastructure, and cement, emphasizes social and environmental development, particularly biodiversity conservation. In 2016, the JSW Foundation initiated a mangrove restoration project in Dolvi, Raigad, Maharashtra, spanning 18 km along the Dharamtar creek and covering 39 villages in 6 Gram Panchayats. The Foundation also focused on raising awareness, capacity building, and implementing sustainable livelihood activities in the area.

Mangrove forests in the State of Maharashtra in India have been protected by law since 2005. However, the existing mangrove forests situated close to JSW Steel's Dolvi Works have continued to decline due to natural erosion and anthropogenic activities. This decline has increased saline water ingress, reduced farmland productivity and threatening local livelihoods. Additionally, the loss of mangroves has harmed marine biodiversity, negatively impacting local fishermen's livelihoods.

In early 2016, the JSW Foundation, as a part of its CSR, commenced an ambitious restoration project in the eroded mangrove forest situated close to JSW Steel's Dolvi Works, on the Amba River creek. The area comprised of a rural population of approximately 30,000.

The initiative began with a series of field surveys along with water and soil sampling that was undertaken to identify the areas suitable for the plantation of mangrove saplings. Thereafter various sensitization workshops were organized for the community members to create awareness regarding the significance of mangroves and their restoration.

Emphasis was laid on the participation of women across a wide range of project elements through 200 Self-Help Groups (SHGs). 2100 women along with other community members were trained in the preparation of the mangrove nursery, soil selection, techniques of planting the seeds, water treatment, drainage, identification of mature seeds and propagules, and maintenance of seedlings. The survival rate of the seedlings has been 75-80 per cent, owing to the active involvement and care of the local community.

As part of this project, over 1.55 million mangrove saplings have been planted, comprising mangrove species such as *Avicennia marina, Avicennia officinalis, Sonneratia apetala etc.,* thus bringing 280 hectares of panchayat land under mangrove cover. Global Positioning Systems (GPS) have been deployed for marking the plantation areas and drone surveys have been carried out to study the progress of the project to determine the survival rate.

Each year, local communities celebrate World Mangrove Day (26th July) as part of the project. Various cultural activities, including drawing competitions, elocution contests, and exhibitions on mangroves, are held in nearby schools.

The initiative is expected to have a tremendous environmental impact, capturing approximately 185,000 metric tonnes of carbon dioxide over 25 years. The regenerated mangrove forest will act as a barrier against climate change and natural disasters, regulating

saline ingress and preventing further deterioration of local farmland productivity. Additionally, the mangrove forests will provide excellent habitats for a wide range of flora and fauna. A key social benefit has been the significant increase in awareness of the important role of mangrove forests, especially among school children in the villages.

Community members, especially women, have been trained in alternate livelihood activities. Improved aquaculture has created a potential new source of income for many families. A key economic benefit from this initiative is the development of a mangrove nursery, which has generated over INR 21.70 million as income for the local community by supplying mangrove saplings to the project. There are plans for the nursery to sell saplings to the Forest Department of the Government of Maharashtra for use in other restoration projects. Additionally, pisciculture activities, promoted as part of the project, have generated profits exceeding INR 1 million. The expansion of farming to include horticulture and fruit trees is underway, with the trees expected to bear fruit in 5 to 7 years.

The initiative has provided 150 women with training to produce value-added fish products, capitalizing on enhanced aquaculture opportunities from mangrove restoration. This project has regenerated 280 hectares of mangrove forest.

Looking ahead, the JSW Foundation, in collaboration with the Mangrove and Marine Biodiversity Conservation Foundation of Maharashtra (MMBCF), is committed to supporting the self-help groups (SHGs) to ensure the initiative becomes self-sustaining.

Along with BNHS, JSW Foundation has undertaken the conservation of 100 hectares of mudflats that have the presence of *Xylocarpus granatum*, the Critically Endangered and rare mangrove species and the Otters, *Lutrogalepers picillata*, a Vulnerable (and WLP Schedule II) species, highlighting the importance of the habitat. JSW Foundation has further undertaken a project to address the Elephant-Human conflicts in Odisha in a way to protect elephant population. Tree plantation drives of indigenous species have been conducted in Mumbai's Sanjay Gandhi National Park to restore degraded forest patches. Miyawaki forest plantations have been initiated for fast-growing, dense forests, enhancing local biodiversity. In Rajasthan, silvipasture development promotes local grass, shrub, and tree species to support biodiversity.







Conservation of the endangered Olive Ridley Sea turtles across the coastline of Andhra Pradesh

NTPC, India's largest energy conglomerate, is committed to sustainable management and has developed a biodiversity policy in 2018 to guide its conservation efforts. One notable initiative includes the conservation of endangered Olive Ridley Sea turtles along the coastline of eight forest divisions in Andhra Pradesh. This CSR project, carried out in partnership with the Andhra Pradesh Forest Department from 2015-16, has significantly increased the number of hatchlings in the region.

The Olive Ridley turtles, the smallest among sea turtles, inhabit warm waters of the Pacific, Atlantic, and Indian oceans, with wide-ranging migrations. Despite their extensive range, their population has shown a decline, leading to their inclusion in Schedule – 1 of the Indian Wildlife (Protection) Act. They are also listed as 'Vulnerable' on the IUCN Red List and protected under the Migratory Species Convention and CITES, to which India is a signatory.

The Olive Ridley Sea turtles encounter significant threats along their migratory route, habitat, and nesting sites. Predatory species and human activities like unsustainable fishing methods and development projects in nesting areas pose serious risks to their survival. Prior to the initiative in Andhra Pradesh, predators such as seabirds, dogs, raccoons, crabs, etc., preyed on the eggs and hatchlings of the breeding stock, leading to considerable losses during each breeding season (November to March).

In 2015-16, NTPC Simhadri, in collaboration with the Andhra Pradesh Forest Department, initiated a conservation effort aimed at mitigating threats to Olive Ridley Sea turtles along the state's coastline. This joint initiative, governed by a five-year agreement, underscores a shared commitment to ensuring the long-term survival of these turtles in their ecosystem. While the Forest Department brings technical expertise and infrastructure support, NTPC Simhadri serves as the financial partner, actively safeguarding both in-situ and ex-situ conservation sites with employee involvement.

The initiative covers the coastline of Andhra Pradesh across eight Forest Divisions namely Rajamundry, Eluru, Giddaluru, Nellore, Visakhapatnam, Vizianagaram, Srikakulam and Sullurpeta, spanning 732 km of the state's coastal line. Implemented on public beaches, the initiative is grounded in community ownership, ensuring active involvement and support from local residents.

The initiative adopts a participatory marine life management approach incorporating both in-situ and ex-situ conservation interventions. Community participation has played an active role in the conservation initiative by ensuring the success of both in-situ and ex-situ conservation measures.

- In-situ conservation activities include regular monitoring of nesting turtles along the coastline, safeguarding the turtles from poachers and human interferences, and sheltering the nesting females and their eggs from the predatory species.

- Ex-situ conservation efforts primarily include the set-up of artificial hatcheries designated for the protection of relocated nests.
- Fisher folk from the communities, at each hatchery location have been selected, trained and employed throughout the nesting season.

A Sea Turtle Protection Force (STPF) has been constituted where the trained STPF patrollers collect the eggs and safely relocate them into the hatcheries. Community members monitor nesting turtles by patrolling beaches during the nesting season. They monitor turtle tracks on the sand at night as thousands of females visit the beach periodically to lay eggs.

Public awareness on sustainable fishing practices has been fostered in fishing hamlets, emphasizing the importance of Olive Ridley Sea Turtle conservation through print and television media campaigns. NTPC employees and their families have actively participated in educational programs, organizing awareness drives on beaches alongside civil societies.

Since the implementation of the conservation initiative in FY2015-16, the average number of Olive Ridley Sea Turtle hatchlings released per year increased significantly, from 146,827 to 412,268. This represents a remarkable 181% increase in hatchling releases over a five-year period. Consequently, over 20.61 lakhs Olive Ridley Sea turtle hatchlings were successfully released from the coasts of Andhra Pradesh during this time.

The project has created additional livelihood opportunities for 96 members of the fishing community, who are involved in monitoring activities and compensated according to the Minimum Wages Act for unskilled labor. This high level of community engagement has led to enhanced sensitization among the fishing community, elevating their role to Guardians of Marine Fauna. This is demonstrated by incidents such as the successful rescue of a 22-feet Whale Shark entangled in fishing nets by local fishermen in Tantadi village, Visakhapatnam.









Regenerative Agriculture Programme in Potato Growing Regions of India

Under the "Positive Agriculture" pillar of pep+ (Pepsico Positive Strategy), implementation of sustainable farming practices is undertaken covering 27,000+ farmers in India. Collectively working to advance the adoption of regenerative agriculture practices, Pepsico is currently focusing on key Potato sourcing regions across Punjab, Uttar Pradesh, West Bengal, Rajasthan, Assam, Gujarat, Maharashtra, Bihar, and Madhya Pradesh, encompassing over 5000+ Acres in 2023. These practices aim to make soil healthier, capture carbon, improve watershed health, protect biodiversity, and strengthen farmer livelihoods, as regenerative agriculture will play a vital role in meeting food demand while safeguarding natural resources and building climate resilience in the farming supply chain.

The approach to regenerative agriculture aims to generate a positive impact across five key dimensions: improving soil health, increasing farm resilience, increasing climate resilience by sequestering carbon and reducing GHG emissions, enhancing watershed health by reducing nutrient runoff, protecting and enhancing biodiversity through initiatives like pollinator support, and soil microbiome improvement and livelihoods & women's empowerment.

Two key regenerative projects:

1. *Biochar to address Stubble Burning in India:* Biochar, a carbon-rich compound produced through pyrolysis, offers the benefits of more stable carbon sequestration, reduced GHG emissions compared to open field burning, improved soil health, cost-effective fertilizer alternative, and higher crop yield. Positive findings from the project have led to the expansion of the Biochar project into Sangrur & Patiala districts, with plans for further growth in Jalandhar. Six retort kilns are operational, and PepsiCo plans to add four more soon.

2. *Approach to Irrigation Efficiency:* Partnering with N-Drip to introduce high-efficiency irrigation technology, aiming to improve water usage in farming. This gravity-powered system combines the benefits of drip irrigation with lower energy and maintenance needs. The technology enhances water savings and fertilizer application efficiency by transitioning farmers from flood irrigation, which loses up to 70% of water. This transition may also reduce carbon and methane emissions, benefit farmer livelihoods, and promote the adoption of water-efficient equipment in states like Uttar Pradesh and Punjab.

The initiative aimed to address Soil degradation and loss from conventional farming. Increased vulnerability to extreme weather and impact on water quality and biodiversity.

The availability of regenerative technologies, including efficient irrigation systems, coupled with the willingness of farmers to adopt newer regenerative techniques served as crucial enabling factors.

Implementing regenerative agriculture programs faced challenges in establishing the right strategy and methodology for local contexts and supporting farmers in deploying best practices. These challenges were addressed by launching a Regenerative Agriculture Practice Bank, providing resources for understanding applicable practices and supporting farmers with deployment through field technicians and R&D support.

Implementing the program has improved soil health while reducing greenhouse gas emissions, enhancing water management, minimizing agricultural inputs, and promoting biodiversity and community well-being. This approach fosters financial profitability, community resilience, and ecological viability, ensuring sustainable farming practices for the future.

With a key vision to create a healthier planet characterized by productive soils, healthy watersheds, thriving farming communities, and dignity in farming as a profession, PepsiCo is committed to regenerative agriculture. In the long term, regenerative practices will strengthen farming communities and ecosystem services while also reducing greenhouse gas emissions in farming. This aligns with our science-based climate target and net-zero ambitions. Currently, Pepsico is collaborating with multiple private and public institutions and organizations to scale our impacts toward regenerative farming.









Conservation of Udaan Biodiversity Park in Vimannagar, Pune, Maharashtra

The Rama Prasad Goenka (RPG) Group, is an Indian industrial and services conglomerate with RPG Foundation as its non-profit Corporate Social Responsibility division. The RPG Foundation implements sustainable and holistic social and environmental interventions. It has specifically contributed to the conservation and management of the Udaan Biodiversity Park, which is spread across 0.008 sq.km. in the urban area of Vimannagar in Pune, Maharashtra. The Park was established in the year 2011, through a Public Private Partnership (PPP) between the Pune Municipal Corporation (PMC) and the Zensar Foundation, which was later absorbed into the RPG Foundation in the year 2016.

Pune, in Maharashtra, is one of India's most progressive cities, having evolved from an education hub to an auto industry hub, and now an IT hub. The rapid urbanisation of Pune has brought challenges like population increase and urban environmental pressure. Local communities and environmentalists have advocated for action, leading to initiatives like the Biodiversity Parks (BDP) project inclusion in Pune's draft Development Plan (DP) for 2007-2027. Consequently, reservation of the specific land for biodiversity parks was also approved by the state government. In line with this Pune Municipal Corporation (PMC) and Zensar Foundation selected a site in Vimannagar for the Udaan Biodiversity Park, formerly a garbage dump infested with invasive plant species.

The initiative of establishing the Udaan Biodiversity Park commenced in the year 2011. Presently, it is governed by the Pune Municipal Corporation and managed by the RPG Foundation. The project began with the removal of garbage and the clearing of invasive plant species, followed by levelling of the land. A landscape architect was engaged as a technical expert to help steer the project forward. The rocks on the land have been utilised to create a pond, a waterfall and seating spaces for visitors. The park has constantly evolved since its inauguration in September 2012.

81 varieties of native trees have been planted in Udaan, such as Custard Apple, Neem, Banyan, Mango, Sandalwood, Guava, etc. A farming club has been constituted in the Biodiversity Park which has an in-house nursery and uses micro-cultures and vermicomposting for improved soil health. The Park has created circular systems to recycle, and reuse treated Nala water for irrigation.

Aquaponics was introduced in the park in 2017-18. A space in the park has been dedicated to the memory of species that have gone extinct in India. A plant exchange corner has been created where citizens can donate any saplings/ plants that they may have in their houses and Udaan gives away extra saplings from its repository.

In addition to the above, a community library has also been established in the park. Recently in 2021-22, new signages have been incorporated in the park, which contain traditional

knowledge of the local ecology. It also has a sensory braille trail for the visually impaired.

The park supports a diversity of native butterflies, birds, and animals, including several rare medicinal and aromatic plants. To monitor the park's ecosystem, biodiversity surveys were introduced in the first year of Udaan's establishment and it undergoes a third-party survey twice every year ever since its inception. The park also serves as a platform for interactive nature awareness and education. There is provision for mapping the wildlife that the visitors spot during their visit to the park, by using sticker dots. Further, till date, several academic institutions, including 3 blind schools and more than 95 colleges, have been invited to conduct educational tours in the park. The park also recruits interns for activities such as landscaping. In September 2021, the 'Big Butterfly Month' was organised at the park as part of an annual nationwide citizen science event, organised by the Indian Foundation of Butterflies.

Starting from just about 75 floral species in 2013, the park now supports 296 species of flora, including a few rare, endemic, threatened species. The number of butterfly species has also increased significantly which could be attributed to the conscious planting of butterfly-friendly plants. The number of species of avifauna at the park was relatively low till 2017-18 which has increased significantly after planting a number of fruit trees and native nectar trees and establishing and maintenance of the aquatic habitat (pond). The presence of beehives and various wasp species in the park, which are also essential pollinators, depicts a healthy ecosystem.

Apart from ecological impact, Udaan has generated local employment for gardeners, security guards, electricians, landscape interns, etc. To cater to the high footfall of 300+ visitors a day, restaurants have also been set up all around the park, thus boosting the local economy.



Sustainable Aromatic Crop Cultivation in Annamalai Tiger Reserve, Tamil Nadu

Ultra International Ltd (UIL) actively participates in the 'Aroma Mission' program, promoting cultivating aromatic crops like Lemongrass, Palmarosa, Vetiver, Rose, Jasmine, etc., valued by the Fragrance and Flavour industry. In line with its commitment to sustainable agriculture, UIL has collaborated with the Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP) to advance this initiative successfully. As part of this mission, UIL has financed and facilitated the installation of six new stainless steel oil distillery units in Tamil Nadu (three), Chhattisgarh (one), and Uttar Pradesh (two), exclusively for the benefit of tribal farmers.

Before initiating this project in the tribal area, efforts were made to educate the tribal communities about the rich biodiversity and ways to reduce biodiversity loss. CSIR-CIMAP conducted three awareness programs and one field training program under the 'Aroma Mission' on lemongrass cultivation and processing at Attakatti and Vellimudi settlements in Annamalai Tiger Reserve, where 115 tribal farmers participated. For many years, tribal farmers relied on conventional food and vegetable crops, which barely provided sufficient livelihoods. However, these crops attracted wild animals, leading to human-wildlife conflicts and loss of lives. A few decades ago, an NGO introduced lemongrass in the region to address this issue. Lemongrass, known for its distinct fragrance, repelled wild animals, thus reducing crop damage and conflicts. However, the introduced variety had low essential oil content, rendering it economically unattractive.

During these programs, 250,000 lemongrass slips of the Krishna variety, known for its high oil content (0.8 – 1%), were distributed to the farmers. The traditional distillation method used by the farmers relied mainly on firewood, resulting in poor oil recovery. Special distillation process training sessions were organized at the tribal farmers' fields, demonstrating the use of de-oiled lemongrass herb as fuel, significantly reducing the cutting of forest trees. Additionally, two field distillation units with a 250 kg capacity each were provided to benefit tribal farmers in the Attakatti and Vellimudi settlements. These improved units, combined with high-yielding varieties, significantly increased oil yields. Subsequently, 5.25 lakh Krishna variety lemongrass slips were distributed to tribal farmers.

Since its installation in 2020, the tribes at Annamalai have distilled approximately 3000 kgs of Lemongrass oil, selling it at Rs. 1400/kg. This has enhanced their economic prospects and instilled a sense of empowerment and self-reliance within the communities. The sale of Lemongrass oil at competitive prices has led to a significant rise in household income, consequently improving their standard of living. The success witnessed in Annamalai has prompted the forest department to expand the cultivation program to more tribal settlements. Through sustainable aromatic crop cultivation, these communities are transitioning away from illegal logging and poaching activities. This shift towards legal livelihoods supports biodiversity conservation and fosters socioeconomic stability.

The program encouraged farmers to adopt sustainable agricultural practices, minimize chemical inputs, mitigate environmental impacts, and emphasize soil and water conservation. Additionally, it supported the preservation and transfer of traditional knowledge

regarding cultivating and utilizing aromatic plants within local communities. Extensive community outreach and education initiatives were crucial to dispel myths, build farmers' trust, and showcase aromatic crop cultivation's tangible benefits. Overcoming deep-rooted cultural and socioeconomic norms, which often favoured conventional crops or subsistence farming methods, proved challenging. Additionally, addressing concerns regarding the profitability, market demand, and technical know-how associated with new aromatic crops was a significant hurdle to overcome.

During the program's implementation, several key lessons emerged. First, empowering local communities and farmers through capacity building, training, and resource access enhances their participation, ownership, and benefits from agricultural development. Collaborating with public research institutions and private companies leverages complementary strengths, fostering innovation and initiative success. Engaging stakeholders at all levels, including communities, farmers, government agencies, and industry partners, is crucial for project success and sustainability. Aligning agricultural initiatives with market demand and preferences ensures value chains' economic viability and sustainability. Embracing advanced technologies and modern practices enhances agrarian productivity, quality, and efficiency. Lastly, promoting environmentally sustainable agricultural practices, such as organic farming, biodiversity conservation, and water resource management, was recognized as essential for long-term agricultural viability and resilience.

As part of the Aroma Mission, UIL plans to expand the cultivation of aromatic plants to new geographies. This expansion entails identifying suitable regions for cultivation, introducing new species/varieties, and increasing cultivation area in existing regions. The plan also includes empowering local communities and farmers through advanced training programs, capacity-building initiatives, and opportunities for value addition and entrepreneurship in the aromatic plants sector.





ABBREVIATIONS

ABS	Access and Benefit Sharing
ABT	Aichi Biodiversity Targets
ASU	Ayurveda, Siddha, and Unani
BDA	Biological Diversity Act
BES	Biodiversity and Ecosystem Services
BMCs	Biodiversity Management Committees
BROA	Biodiversity Risk and Opportunity Assessment
BSI	Botanical Survey of India
CAF	Compensatory Afforestation Fund
CAMPA	Compensatory Afforestation Fund Management and Planning Authorities
CBD	Convention on Biological Diversity
CBOs	Community-based Organizations
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Conservation of Migratory Species
COP	Conference of the Parties
CSD	Center for Sustainable Development
CSR	Corporate Social Responsibility
EDC	Eco-Development Committee
EIA	Environment Impact Assessment
EPA	Environment Protection Act
ESG	Environmental, Social, and Governance
FAO	Food and Agriculture Organization
FRA	Forest Rights Act
GAP	Good Agricultural Practices
GBF	Kunming-Montreal Global Biodiversity Framework
GEF	Global Environment Facility

GFCP	Good Field Collection Practices
GHGS	Green House Gases
GIM	National Mission for Green India
GPFLR	Global Partnership on Forest and Landscape Restoration
HBRTC	Honeybee Research and Training Centre
ICFRE	Indian Council of Forestry Research and Education
ICZMPs	Integrated Coastal Zone Management Plans
IPBES	Inter-governmental Platform on Biodiversity and Ecosystem Services
IPR	Intellectual Property Rights
ISM	Indian Systems of Medicine
ISSB	International Sustainability Standards Board
IUCN	International Union for Conservation of Nature
JFMCs	Joint Forest Management Committees
KFD	Kerala Forest Department
MA	Millennium Ecosystem Assessment
MCA	Ministry of Corporate Affairs
MDGs	Millennium Development Goals
MISHTI	Mangrove Initiative for Shoreline Habitats & Tangible Incomes
MoU	Memorandum of Understanding
MVCC	Medium-Voltage Conductor Covers
MVLC	Medium-voltage line Covers
NAP	National Afforestation Programme
NAPCD	National Action Programme to Combat Desertification
NBA	National Biodiversity Authority
NBA	National Biodiversity Authority
NBAP	National Biodiversity Action Plan
NBT	National Biodiversity Targets
NCMP	National Coastal Management Programme
NCSCM	National Centre for Sustainable Coastal Management
NCS-PED	National Conservation Strategy and Policy Statement on Environment and Development
NFP	National Forest Policy
NGO	Non-Governmental Organisations
NGT	National Green Tribunal
NMHS	National Mission on Himalayan Studies
NPCA	National Plan for Conservation of Aquatic Eco-systems
NPV	Net Present Value
NTCA	National Tiger Conservation Authority
NWAP	National Wildlife Action Plan
OECD	Organisation for Economic Co-operation and Development
OHL	Overhead Power Lines

OSR	Open Space Reservation
PESA	Panchayats (Extension to the Scheduled Areas)
PIL	Public Interest Litigation
PIL	Public Interest Litigation
PPVFRA	The Protection of Plant Varieties and Farmers' Rights Act
RBC	Responsible business conduct
RDF	Refuse Derived Fuel
RET	Rare, Endangered, and Threatened
SBB	State Biodiversity Board
SBI	Subsidiary Body on Implementation
SBSAPs	State Biodiversity Strategies and Action Plans
SDGs	Sustainable Development Goals
SIPCOT	State Industries Promotion Corporation of Tamil Nadu
SRPs	Species Recovery Programmes
TCFD	Task Force on Climate-Related Disclosures
TNFD	Taskforce on Nature-related Financial Disclosures
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UEBT	Union for Ethical BioTrade
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UTBCs	Union Territory Biodiversity Councils
VFCs	Village Forest Committees
WCCB	Wildlife Crime Control Bureau
WFC	World Forestry Congress
WII	Wildlife Institute of India
WTO	World Trade Organisation
ZSI	Zoological Survey of India



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ANNEXURES

Annexure I:
Different CBD COP and key decisions.

Meeting of COP CBD	YEAR	LOCATION	KEY DECISIONS
COP 1	1994	Nassau, Bahamas	• Recommended UNGC to consider an International Day for Biological Diversity
COP 2	1995	Jakarta, Indonesia	• Establishment of the clearing-house mechanism to promote and facilitate technical and scientific cooperation. • Establishment of the Intergovernmental Panel on Forests (IPF).
COP 3	1996	Buenos Aires, Argentina	• Endorsed memoranda of cooperation entered by the Executive Secretary with the secretariats of the Convention on Wetlands of International Importance, the Convention on International Trade in Endangered Species of Wild Fauna and Flora and the Convention on the Conservation of Migratory Species of Wild Animals. • Recognized the close relationship between agriculture and biological and cultural diversity and is covered by CBD.
COP 4	1998	Bratislava, Slovakia	• First National reports by Parties submitted on the progress of the implementation of the National Biodiversity Strategy and Action Plans, and on lessons learned. • Recognized that incentive measures for effective implementation of CBD should be designed using an ecosystem approach and with the targeted resource management audience in mind.
EXCOP 1 (First Extraordinary Meeting)	1999	Cartagena, Colombia	• Adoption of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity.
COP 5	2000	Nairobi, Kenya	• Established a Global Taxonomy Initiative coordination mechanism to assist the Executive Secretary to facilitate international cooperation and coordinate activities under the Initiative. • Encouraged Parties and Governments to promote regional cooperation. • Endorsed the description of the ecosystem approach.
COP 6	2002	The Hague, Netherlands	• Recognized that sustainable use is a cross-cutting issue relevant to different ecosystems, sectors and thematic areas. • Adopted the Global Strategy for Plant Conservation, including outcome-oriented global targets for 2010.
COP 7	2004	Kuala Lumpur, Malaysia	• Noted the linkage between biodiversity, food and nutrition and the need to enhance sustainable use of biodiversity to combat hunger and malnutrition, and thereby contribute to target 2 of goal 1 of the Millennium Development Goals (MDGs).

			• Decided to develop a framework to improve the assessment of achievements and advancements in implementing the Strategic Plan and, specifically, its goal to achieve a significant reduction in the current rate of biodiversity loss at national, regional, and global levels. • Adopted the programme of work on technology transfer and cooperation
COP 8	2006	Curitiba, Brazil	• Invited the General Assembly to consider adopting the draft resolution on the proclamation of 2010 as the International Year of Biodiversity. (Declared) • Formulated a short list of priorities activities to serve as a coherent framework for guiding the near-term implementation of the CEPA (Communication, Education & Public Awareness) work program. • Proposed voluntary guidelines to parties for review of national biodiversity strategies and action plans. • Recognised the role of Business and industry/ private sector engagement in the implementation of the convention and its 2010 target. • Adopted the guidance for Biodiversity and Climate change, to promote synergy among activities for biodiversity conservation, mitigating or adapting to climate change and combating land degradation
COP 9	2008	Bonn, Germany	• Promoted engagement of cities and local authorities to implement the Convention and integrate biodiversity concerns into their plans, programmes, and policies. • Adopted Framework of priority actions on business for the period of 2008-2010 which included Build and promote the business case for biodiversity. • Emphasized that South-South cooperation is important for development in the context of the Millennium Development Goals, the World Summit on Sustainable Development and Biodiversity. • Endorsed wider adoption of tailored ecosystem approach for achieving the Millennial Development Goals.
COP 10	2010	Nagoya, Japan	• Adopted the ***Nagoya Protocol*** on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity. • Adopts the Strategic Plan for Biodiversity 2011-2020, with its Aichi Targets.
COP 11	2012	Hyderabad, India	• Encouraged businesses and their supply chain to continue taking actions instrumental to implementing the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. • Decided to include consideration of the impacts of tropospheric ozone in the programme of work on the links between biodiversity and climate change.

			• Advised on the role of conservation, sustainable forest management, and enhancement of forest carbon stocks in developing countries; and the application of pertinent safeguards for biodiversity within terms of policy approaches and positive incentives on issues relating to emission reduction from deforestation and degradation of forests in these nations.
COP 12	2014	Pyeongchang, Republic of Korea	• Recognized the significance of non-market-based approaches and collective action, including that of indigenous and local communities, in achieving the goals of the Convention. These approaches include community-based natural resource management, shared governance or joint management of protected areas, or the use of indigenous and community-conserved territories and areas. The Financial reporting framework acknowledges these approaches and resolves to incorporate into reporting the activities that promote and support the convention. • Emphasized the need of addressing the underlying causes of biodiversity loss and supporting biodiversity conservation and its sustainable use for the post-2015 United Nations development agenda and sustainable development goals. • Stressed on the relevance of the linkages between biodiversity and human health for the post-2015 United Nations development agenda and the SDGs.
COP 13	2016	Cancun, Mexico	• Acknowledged that achieving Aichi Biodiversity Target 11 will help achieve other Aichi Biodiversity Targets, the Sendai Framework for Disaster Risk Reduction 2015–2030, relevant SDG targets, Articles 5, 7, and 8 of the Paris Agreement, as well as strategies for climate change adaptation and mitigation. • Emphasized the need for enhanced transdisciplinary research and knowledge sharing among relevant institutions to acquire a better understanding of how climate-related geoengineering affects biodiversity, ecosystem services, socioeconomic, cultural, and ethical issues, in addition to regulatory options.
COP 14	2018	Sharm El-Sheikh, Egypt	• Welcomed the Scenarios for the 2050 Vision for Biodiversity, approaches to living in harmony with nature and the process of developing a post-2020 global biodiversity framework. • Any follow-up to the Strategic Plan for Biodiversity 2011-2020 should take the 2050 Vision of the Strategic Plan into account. A long-term goal for biodiversity could be derived from the 2050 Vision ("Living in harmony with nature"), which states that "by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people." It additionally offers context for discussions on possible biodiversity targets for 2030 as part of the post-2020 global biodiversity framework.

			• Emphasized that ceasing the loss of biodiversity and achieving the goals and objectives of various multilateral agreements and international processes, such as the 2030 Agenda for Sustainable Development, the Sustainable Development Goals, and the Paris Agreement, will require mainstreaming biodiversity in the sectors of energy and mining, infrastructure, manufacturing, and processing.
EXCOP 2 (Second Extraordinary Meeting)	2020	Montreal (Online)	• Considering the constraints arising due to the COVID-10 pandemic, proceeded with crucial budgeting aspects.
COP 15	2021/2 -2023	Kunming, China & Montreal, Canada	• Adopted the Kunming-Montreal Global Biodiversity Framework.
COP 16	2024	Cali, Colombia	To be held

Annexure II:

List of NBTs, ABTs, and SDGs as incepted in each NBT

(Source: *India National Biodiversity Action Plan 2019, National Biodiversity Authority*)

NBT	ABT	SDG
NBT 1 By 2020, a significant proportion of the country's population, especially the youth, is aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	**ABT 1** By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	**SDG 1** No Poverty - End extreme poverty in all forms by 2030. **SDG 12** Responsible consumption and production - Ensure sustainable consumption and production patterns.
NBT 2 By 2020, values of biodiversity are integrated in national and state planning processes, development programmes and poverty alleviation strategies.	**ABT 2** By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	**SDG 1** No Poverty - End extreme poverty in all forms by 2030. **SDG 8** Decent work and economic growth -promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. **SDG 9** Industry innovation and infrastructure -build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. **SDG 11** Sustainable cities and communities -make cities and human settlements inclusive, safe, resilient and sustainable. **SDG 13** Climate action - take urgent action to combat climate change and its impacts. **SDG 14** Life below water - conserve and sustainably use the oceans, seas and marine resources for sustainable development. **SDG 15** Life on land - protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

		SDG 17 Partnership for the goals - strengthen the means of implementation and revitalize the global partnership for sustainable development.
NBT 3 Strategies for reducing rate of degradation, fragmentation and loss of all natural habitats are finalized and actions put in place by 2020 for environmental amelioration and human well-being.	**ABT 5** By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced. **ABT 15** By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15% of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification. By 2020, at least 17% of terrestrial and inland water, and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	**SDG 6** Clean water and sanitation - ensure availability and sustainable management of water and sanitation for all. **SDG 7** Affordable and clean energy - ensure access to affordable, reliable, sustainable and modern energy for all. **SDG 11** Sustainable cities and communities - make cities and human settlements inclusive, safe, resilient and sustainable. **SDG 13** Climate action - take urgent action to combat climate change and its impacts. **SDG 14** Life below water - conserve and sustainably use the oceans, seas and marine resources for sustainable development. **SDG 15** Life on land - protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
NBT 4 By 2020, invasive alien species and pathways are identified and strategies to manage them developed so that populations of prioritized invasive alien species are managed.	**ABT 9** By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	**SDG 15** Life on land - protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

NBT 5 By 2020, Measures are adopted for Sustainable Management of Agriculture, Forestry and Fisheries.	**ABT 6** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits. **ABT 7** By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity. **ABT 8** By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
NBT 6 Ecologically representative areas on land and in inland waters, as well as coastal and marine zones, especially those of particular importance for species, biodiversity and ecosystem services, are conserved effectively and equitably, on the basis of protected area designation and management and other area-based conservation measures and are integrated into the wider landscapes and seascapes, covering over 20 % of the geographic area of the country, by 2020.	**ABT 11** By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	**SDG 6** Clean water and sanitation - ensure availability and sustainable management of water and sanitation for all. SDG 11 Sustainable cities and communities - make cities and human settlements inclusive, safe, resilient and sustainable. **SDG 14** Life below water - conserve and sustainably use the oceans, seas and marine resources for sustainable development. **SDG 15** Life on land - protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

NBT 7 By 2020, genetic diversity of cultivated plants, farm livestock, and their wild relatives including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	**ABT 13** By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio- economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	**SDG 2** Zero hunger - end hunger, achieve food security and improved nutrition and promote sustainable agriculture. **SDG 3** Good health and well being - ensure healthy lives and promote well-being for all at all ages.
NBT 8 By 2020, ecosystem services especially those relating to water, human health, livelihoods and well-being, are enumerated and measures to safeguard them are identified taking into account the needs of women and local communities particularly the poor and vulnerable section.	**ABT 14** By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	**SDG 3** Good health and well being - ensure healthy lives and promote well-being for all at all ages. **SDG 4** Quality education - ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. **SDG 5** Gender equality - achieve gender equality and empower all women and girls. **SDG 6** Clean water and sanitation - ensure availability and sustainable management of water and sanitation for all. **SDG 7** Affordable and clean energy - ensure access to affordable, reliable, sustainable and modern energy for all. **SDG 10** Reduce inequalities - reduce inequality within and among countries. **SDG 11** Sustainable cities and communities - make cities and human settlements inclusive, safe, resilient and sustainable. **SDG 12** Responsible consumption and production - ensure sustainable consumption and production patterns.

		SDG 14 Life below water - conserve and sustainably use the oceans, seas and marine resources for sustainable development.
NBT 9 By 2015, Access to Genetic Resources (GRs) and the Fair and Equitable Sharing of Benefits Arising from their Utilization as per the Nagoya Protocol are operational, consistent with national legislation.	**ABT 16** By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
NBT 10 By 2020, an effective participatory and updated national biodiversity plan is made operational at different levels of governance.	**ABT 3** By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions. **ABT 4** By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits. **ABT 17** By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	

NBT 11 By 2020, national initiatives using communities' traditional knowledge relating to biodiversity are strengthened, with the view to protecting this knowledge in accordance with national legislations and international obligations.	**ABT 8** By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	**SDG 6** Clean water and sanitation - ensure availability and sustainable management of water and sanitation for all. **SDG 9** Industry innovation and infrastructure - build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. **SDG 11** Sustainable cities and communities - make cities and human settlements inclusive, safe, resilient and sustainable. **SDG 12** Responsible consumption and production - ensure sustainable consumption and production patterns. **SDG 14** Life below water - conserve and sustainably use the oceans, seas and marine resources for sustainable development.
NBT 12 By 2020, opportunities to increase the availability of financial human and technical resources to facilitate effective implementation of the Strategic Plan for Biodiversity 2011-2020 and the national targets are identified and the Strategy for Resource Mobilization is adopted.	**ABT 20** By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011- 2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annexure III:
CSR spending in Indian States (source: MCA.gov)

S. No	State	FY 2016-17 (INR Cr.)	FY 2017-18 (INR Cr.)	FY 2018-19 (INR Cr.)	FY 2019-20 (INR Cr.)	FY 2020-21 (INR Cr.)
1	Andaman And Nicobar	0.06	0	0.14	0.21	0.06
2	Andhra Pradesh	82.4	92.06	101.07	106.25	111.16
3	Arunachal Pradesh	0.8	0.59	0.86	1.78	0.27
4	Assam	34.68	17.4	12.5	7.61	4.11
5	Bihar	39.5	57.25	57.62	46.58	16.48
6	Chandigarh	0	0.2	0.17	0.12	1.05
7	Chhattisgarh	1.68	54.41	15.15	16.75	21.54
8	Dadra And Nagar Haveli	0.34	0.14	0.29	9.88	9.18
9	Daman And Diu	0	0	0.43	0.01	0.11
10	Delhi	16.05	63.56	134.27	123.82	38.58
11	Goa	5.48	0.96	0.86	1.01	0.61
12	Gujarat	22.24	58.18	60.38	60.93	110.49
13	Haryana	29.56	23.54	31.2	35.31	35.97
14	Himachal Pradesh	4.01	14.07	10.27	2.61	6.95
15	Jammu And Kashmir	17.22	3.84	10.79	3.53	1.64
16	Jharkhand	5.54	4.17	3.88	3.81	7.08
17	Karnataka	118.23	283.11	180.25	195.94	151.78
18	Kerala	9.95	17.73	29.47	42.13	13.32
19	Lakshadweep	0	0.43	0	0	0
20	Madhya Pradesh	8.65	11.76	11.67	8.64	32.89
21	Maharashtra	204.45	145.9	171.73	208.52	178.84
22	Manipur	0.04	0	0.07	0.02	1.28
23	Meghalaya	0.97	0.42	0.34	0.29	1.38
24	Mizoram	0	0.02	0	0	0
25	Nagaland	0	0.02	0	0.04	1.52
26	Odisha	9.22	6.87	20.02	78.19	17.29
27	Punjab	5.58	9.34	51.33	16.48	17.47
28	Rajasthan	34.4	41.42	42.83	37.49	78.81
29	Sikkim	0	0.04	1.03	0.01	0
30	Tamil Nadu	29.74	34.28	56.86	94.92	115.86
31	Telangana	7.84	21.46	12.27	15.13	22.71
32	Tripura	0.25	0.12	0.32	0	0.07
33	Uttar Pradesh	31.55	38.04	40.9	34.7	55.65
34	Uttarakhand	3.77	3.52	7.06	4.28	5.69
35	West Bengal	8.31	6.58	13.22	18.42	23.67

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Established in 1927, Federation of Indian Chambers of Commerce and Industry (FICCI) is the largest and oldest apex business organisation in India. Mahatma Gandhi addressed FICCI's 4th AGM in 1931. Our 96th AGM was held in December 2023. With our rich legacy, FICCI would play an even greater role as India emerges as the 3rd largest economy.

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CONTACT US

Federation of Indian Chambers of Commerce and Industry (FICCI)
Federation House, 1, Tansen Marg
New Delhi-110001
E: environment@ficci.com
W: www.ficci.in

