Network India

BRIEFING PAPER

Integrating Climate Action and Biodiversity Conservation: Pathways for Private Sector Engagement in India's Sustainability Agenda

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List of Acronyms

- BIP - Biodiversity Indicators Partnership
- BRSR - Business Responsibility and Sustainability Reporting
- CAMPA - Compensatory Afforestation Fund Management and Planning Authority
- CBD - Convention on Biological Diversity
- CII - Confederation of Indian Industry
- COP - Conference of the Parties
- CSR - Corporate Social Responsibility
- ESG - Environmental, Social, and Governance
- FAO - Food and Agriculture Organization
- GIM - Green India Mission
- GRI - Global Reporting Initiative
- IUCN - International Union for Conservation of Nature
- IFC - International Finance Corporation
- IIIC - Indian Impact Investors Council
- IPBES - Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
- IPCC - Intergovernmental Panel on Climate Change
- MoEFCC - Ministry of Environment, Forest and Climate Change
- NAPCC - National Action Plan on Climate Change
- NBAP - National Biodiversity Action Plan
- NDC - Nationally Determined Contribution
- NbS - Nature-Based Solutions
- SDG - Sustainable Development Goals
- SBTN - Science-Based Targets for Nature
- TNFD - Task Force on Nature-related Financial Disclosures
- UNFCCC - United Nations Framework Convention on Climate Change
- UNGCNI - United Nations Global Compact Network India
- WEF - World Economic Forum
- WRI - World Resources Institute

Executive Summary

The interconnected crises of climate change and biodiversity loss present profound challenges and opportunities for global sustainability. India, with its rich biodiversity and diverse ecosystems, plays a pivotal role in addressing these challenges. Integrating climate resilience and biodiversity conservation is not only essential for environmental health but also critical for supporting India's economy and livelihoods, especially for communities that rely directly on natural resources. This briefing paper developed by United Nations Global Compact Network India underscores the importance of cohesive climate and biodiversity action, providing recommendations that leverage the strengths of governments, the private sector, and NGOs to meet these goals.

The Case for Integrated Action

India is home to approximately 8% of global biodiversity, spread across ecosystems as varied as the Himalayan forests, coastal mangroves, grasslands, and wetlands. However, these ecosystems are increasingly threatened by climate change, deforestation, pollution, and unsustainable land use. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), approximately 1 million species face extinction globally within the coming decades if current trends continue. For India, the loss of biodiversity threatens food security, water availability, and economic stability, as over half of its population relies on climate-sensitive sectors such as agriculture, fisheries, and forestry (IPBES, 2019).

India's commitment to climate and biodiversity is reflected in its international obligations under frameworks such as the UN Framework Convention on Climate Change (UNFCCC), the UN Convention on Biological Diversity (UNCBD), and the UN Convention to Combat Desertification (UNCCD). Nationally, India's National Action Plan on Climate Change (NAPCC) and National Biodiversity Action Plan (NBAP) provide strategic guidance, but enhanced alignment and multi-stakeholder action are needed to effectively address the intersection of climate resilience and biodiversity conservation.

The Role of the Private Sector

The private sector is essential to India's climate and biodiversity strategy. Indian companies, particularly through Corporate Social Responsibility (CSR) and Environmental, Social, and Governance (ESG) frameworks, are increasingly prioritizing sustainability. In FY 2022-2023, CSR spending reached approximately ₹30,000 crore (USD 3.75 billion), with less than 10% dedicated to environmental projects. Companies like Tata Power, Hindustan Unilever, and Infosys have pioneered initiatives that integrate biodiversity conservation and climate action, setting examples through afforestation, water management, and renewable energy investments.

However, scaling private sector impact requires clear guidance and supportive frameworks. This paper recommends strengthening CSR and ESG mandates to include biodiversity-specific criteria, developing global biodiversity reporting standards, and expanding financial mechanisms like carbon markets, green bonds and biodiversity credits. These recommendations can direct more corporate resources toward biodiversity-positive climate projects, creating a pathway for long-term sustainability.

Key Recommendations for Multi-Stakeholder Action

To achieve transformative impact, the recommendations in this briefing paper emphasize collaboration among governments, the private sector, and NGOs. Key action points include:

- **Fostering Public-Private Partnerships (PPPs)**: PPPs can scale up initiatives in sectors such as agriculture, urban planning, and infrastructure through projects like reforestation, sustainable water management, and Nature-Based Solutions (NbS). Successful models, such as the Namami Gange river-cleaning initiative, demonstrate the impact of combining corporate investment with public sector support and local expertise.
- **Expanding Green Finance Mechanisms**: Green finance instruments—including green bonds, biodiversity credits, and impact investments—offer robust pathways for funding biodiversity and climate initiatives. India's green bond market, valued at over USD 20 billion, highlights the potential of green finance. Expanding eligibility criteria to include biodiversity projects can attract more private investment for ecosystem restoration and conservation.
- **Standardizing Reporting and Accountability**: Harmonized standards for climate and biodiversity reporting, such as those being developed by the Task Force on Nature-related Financial Disclosures (TNFD), are essential for transparency and accountability. Unified metrics enable companies to track their biodiversity and climate impacts consistently, improving corporate responsibility and attracting investors committed to sustainability.

- **Promoting Corporate Biodiversity Pledges:** Voluntary biodiversity pledges, similar to carbon neutrality commitments, encourage companies to set ambitious biodiversity goals, such as habitat conservation, pollution reduction, and support for NbS. Public recognition and incentives for biodiversity-friendly practices can motivate companies to adopt sustainable practices, enhancing corporate accountability and environmental impact.
- **Leveraging Technology and Data for Environmental Monitoring:** Advanced technologies like artificial intelligence (AI), remote sensing, and data-sharing platforms facilitate real-time tracking of biodiversity and climate impacts, enabling better decision-making. Public and private stakeholders can collaborate to build data-sharing systems that integrate ecological and climate data, providing a comprehensive resource for policy formulation, monitoring, and adaptive management.

Summary: A Call for Collaborative Action

As India confronts the twin crises of climate change and biodiversity loss, coordinated efforts across sectors are essential to secure a sustainable future. A unified approach, backed by robust policy support, innovative financing, and public-private partnerships, offers an effective pathway to build climate resilience, protect ecosystems, and support sustainable livelihoods. By aligning climate and biodiversity actions, India can not only meet its national and global commitments but also set an example of sustainable development for the world.

The recommendations outlined in this briefing paper serve as a roadmap for integrating biodiversity and climate efforts, inviting governments, NGOs, and especially businesses, to contribute to a cohesive sustainability agenda. Embracing these strategies will enable India to protect its natural heritage while fostering a resilient, green economy that benefits both people and the planet.

The United Nations Global Compact Network India (UNGCNI) in collaboration with key government and private sector partners, is committed to supporting corporate sector organizations to act more proactively for climate change and biodiversity conservation in India.

1. Introduction

1.1 Contextual Overview

The dual crises of climate change and biodiversity loss are among the most pressing challenges of our time. Both are interconnected, mutually reinforcing, and globally pervasive. Biodiversity, the variety of life on Earth, provides ecosystem services essential for human well-being—such as food production, water regulation, soil fertility, and resilience to natural disasters. As climate change progresses, it disrupts these systems, reducing their ability to support both human communities and natural ecosystems.

Research from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reveals that approximately 1 million species face extinction due to human activities, including habitat loss, pollution, and climate change. The Global Assessment Report on Biodiversity and Ecosystem Services (2019) emphasizes that climate change is a significant driver of biodiversity loss, while degraded ecosystems amplify climate impacts due to reduced carbon sequestration potential. For instance, deforestation alone contributes around 10-15% of annual global greenhouse gas emissions (World Resources Institute, 2023), illustrating how critical conservation is to climate mitigation.

In this context, leveraging the synergies between climate action and biodiversity conservation is not just strategic but essential. Nature-based solutions, such as restoring mangroves or rewilding degraded lands, present cost-effective methods for achieving both biodiversity conservation and climate resilience. The World Economic Forum (WEF) has estimated that these approaches could unlock $10 trillion in business opportunities and create 395 million jobs by 2030, especially in sectors like agriculture, forestry, and fisheries where biodiversity and climate benefits align directly.

1.2 Focus on India

India, a megadiverse country hosting around 8% of global biodiversity across varied ecosystems—forests, wetlands, coastal regions, and the Himalayan landscape—is particularly vulnerable to climate change. Over the past 50 years, the nation has experienced a 1.2°C rise in average temperature, increasing risks from extreme weather events such as floods, droughts, and heatwaves (India Meteorological Department, 2022). These climatic shifts jeopardize India's biodiversity, which is essential for the livelihoods of millions, particularly in rural and indigenous communities.

The loss of biodiversity not only threatens food security and water resources but also compromises India's ability to meet its climate commitments under the Paris Agreement. In 2022, India reiterated its commitment to reduce its carbon emissions by 45% from 2005 levels by 2030 and achieve carbon neutrality by 2070. Meeting these targets requires multifaceted efforts, including large-scale biodiversity conservation, as ecosystems like forests and grasslands play a vital role in sequestering carbon. For instance, the Himalayas, often referred to as the "water tower of Asia," provide water to over 1.9 billion people. Climate-driven glacial melt and ecosystem degradation directly endanger these critical water resources, highlighting the urgency of joint climate and biodiversity efforts in India.

Given its position as one of the world's fastest-growing economies, India's private sector has a unique opportunity —and responsibility—to champion integrated climate and biodiversity actions. The private sector's influence extends across manufacturing, agriculture, energy, finance, and more, sectors that directly impact biodiversity and climate resilience. Indian companies are increasingly recognizing the interdependencies between business stability and environmental health. Reports from the Confederation of Indian Industry (CII) show that approximately 43% of businesses see biodiversity as a material issue, acknowledging the risk that ecosystem degradation poses to long-term profitability.

Further, India's CSR mandate, outlined in Section 135 of the Companies Act, requires businesses with certain financial thresholds to allocate 2% of their average net profits toward social causes, with environmental sustainability among them. According to the Ministry of Corporate Affairs (MCA), Indian businesses contributed roughly ₹30,000 crore (USD 3.75 billion) to CSR activities in FY 2022-2023, with a significant portion directed toward environmental sustainability initiatives. This CSR framework creates a structured avenue for private sector contributions to biodiversity and climate action, allowing companies to fund projects that support ecosystem restoration, conservation education, and sustainable livelihood generation.

1.3 Key Opportunities for Private Sector Action

The private sector's potential to drive positive impact on climate and biodiversity stems from:

- Operational Adjustments: Integrating biodiversity and climate considerations into business models and practices, such as shifting to renewable energy, reducing waste, and implementing sustainable sourcing policies.
- Investing in Nature-Based Solutions (NbS): Companies can invest in restoration projects, such as reforestation, agroforestry, and wetland conservation, which offer climate resilience and biodiversity benefits.
- CSR and ESG Contributions: Leveraging CSR funds and enhancing ESG frameworks to systematically include biodiversity indicators.
- Innovative Financing: Green bonds, carbon credits, and impact investment channels provide mechanisms to support large-scale conservation efforts while driving financial returns.

Private sector engagement aligns with global initiatives, such as the United Nations' Sustainable Development Goals (SDGs), where SDG 13 (Climate Action) and SDG 15 (Life on Land) directly relate to climate-biodiversity synergies. As India aims to enhance its Nationally Determined Contributions (NDCs) under the Paris Agreement, aligning business practices with these national goals can unlock valuable resources and innovative solutions for biodiversity-friendly climate action.

In this context, the commitment of the United Nations Global Compact Network India (UNGCNI) to promote low carbon, climate resilient and inclusive economic development through private sector action, becomes quite significant. UNGCNI supports the Government of India and corporate partners in meeting national development objectives along with commitments under key multilateral agreements by providing leadership support, fostering South-South cooperation, and enabling innovative partnerships between the public and private sectors for promoting sustainable business practices, including biodiversity conservation. Considering the relatively limited levels of awareness within the private sector on biodiversity issues, the Network aims to raise awareness about the importance of biodiversity and encourage corporate actions that contribute to conservation efforts through CSR and ESG efforts. In continuation of these efforts, this briefing paper aims to highlight recent developments, opportunities and some of challenges currently faced by business organizations in engaging with the subject of biodiversity conservation. Through it's Centre for Business Leadership on Nature Restoration, UNGCNI aims to work more closely with corporates in India to support adoption of action contributing to biodiversity conservation. UNGCNI will draw on global engagements of the UN Global Compact, to bring learning from global best practices to corporates in India.

2. Climate and Biodiversity Linkages

The interdependence of climate stability and biodiversity is well-documented, with biodiversity contributing significantly to climate resilience, carbon sequestration, and disaster mitigation. Yet, the ongoing degradation of biodiversity and ecosystem health weakens these functions, undermining global climate goals. Integrating biodiversity conservation with climate action can foster more resilient natural systems and provide enhanced ecosystem services, highlighting the urgent need for policies and investments that align these goals. This section explores three primary linkages between climate and biodiversity: ecosystem services, nature-based solutions, and the impact of biodiversity loss on climate goals.

2.1 Ecosystem Services

Ecosystem services—such as carbon sequestration, water purification, and pollination—are foundational for human societies and economies. These services are directly tied to biodiversity: the variety of species, habitats, and genetic diversity within an ecosystem. Forests, wetlands, grasslands, and oceans serve as carbon sinks that absorb nearly half of the world's annual carbon dioxide emissions, significantly mitigating climate change (IPCC, 2021).

For example, forests alone store approximately 80% of terrestrial carbon, making them critical for carbon sequestration. The Global Forest Resources Assessment (2020) by the Food and Agriculture Organization (FAO) estimates that globally, forests sequester approximately 7.6 billion metric tons of CO_2 annually. Mangroves, which cover only 0.1% of the global land surface, sequester up to 10 times more carbon per hectare than tropical forests due to their unique ability to store carbon in sediment layers. In India, mangrove forests in states like West Bengal, Andhra Pradesh, and Odisha protect coastlines from storm surges while sequestering substantial amounts of carbon, critical for both biodiversity conservation and climate resilience.

2.2 Nature-Based Solutions (NbS)

Nature-Based Solutions (NbS) leverage natural processes to address climate and biodiversity challenges, often in cost-effective ways. NbS include initiatives like forest restoration, wetland conservation, and sustainable agricultural practices that provide dual benefits of climate mitigation and biodiversity conservation. According to the International Union for Conservation of Nature (IUCN), if implemented effectively, NbS could provide around 30% of the mitigation needed to limit global warming to 1.5°C by 2030.

In India, the potential for NbS is considerable, particularly in reforestation and agroforestry. The country's Green India Mission (GIM), a part of its National Action Plan on Climate Change (NAPCC), aims to increase forest cover and improve ecosystem services. For example, agroforestry practices in states like Karnataka and Punjab enhance soil health, biodiversity, and crop resilience to climate impacts. Additionally, the MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) program supports rural employment through watershed management and tree planting, demonstrating how NbS can drive social and ecological benefits.

2.3 Impacts of Biodiversity Loss on Climate Goals

Biodiversity loss accelerates climate impacts by destabilizing ecosystems, reducing carbon sequestration, and increasing vulnerability to extreme weather events. Degraded ecosystems lose their capacity to regulate climate effectively, leading to a loss of natural carbon sinks and contributing to rising greenhouse gas levels. For instance, deforestation accounts for approximately 10% of global greenhouse gas emissions annually (UNEP, 2022). When forests are degraded, they shift from being carbon sinks to carbon sources, releasing stored carbon into the atmosphere.

In the Indian context, the Western Ghats, a UNESCO World Heritage site, exemplifies this dynamic. As a biodiversity hotspot, the Western Ghats sequester vast amounts of carbon while also supporting India's monsoon system. However, deforestation and land-use change in this region have led to reduced rainfall and increased vulnerability to landslides and floods, impacting local communities and contributing to climate instability.

1Furthermore, India's agricultural sector, which employs more than half of its population, is highly vulnerable to biodiversity loss. Biodiversity supports soil health, pest control, and pollination—critical for crop yields. The IPBES estimates that 5-8% of global agricultural production is at risk due to pollinator loss, equating to a loss of $235-577 billion annually. In India, where agriculture contributes around 15% to the national GDP, the loss of biodiversity could significantly affect food security and economic stability.

The degradation of water resources due to climate change and biodiversity loss also illustrates the link between these two issues. Ecosystems such as wetlands and forests play crucial roles in water regulation, filtering pollutants, and maintaining the water cycle. In states like Rajasthan, where water scarcity is a critical issue, preserving watershed biodiversity is essential to ensure water availability for both rural and urban communities. Degraded watersheds lead to reduced water infiltration, increased runoff, and higher incidences of drought, making integrated climate-biodiversity action imperative.

2.4 Key Linkages: Climate Goals and Biodiversity Conservation in India

- Carbon Sequestration: Biodiversity-rich ecosystems, especially forests and mangroves, sequester carbon, reducing atmospheric CO_2 levels. India's afforestation programs under the Green India Mission have committed to increasing forest cover and improving carbon stocks. The mission aims to cover 5 million hectares of land, which could sequester approximately 100-150 million tons of CO_2 annually.
- Adaptation and Resilience: Healthy ecosystems provide climate resilience by stabilizing local climates and reducing vulnerability to natural disasters. For instance, mangrove forests in the Sundarbans provide natural barriers against cyclones, protecting both biodiversity and human settlements.
- Economic Stability: Biodiversity supports key economic sectors, including agriculture, fisheries, and tourism. Biodiversity conservation strengthens climate resilience in these sectors, reducing risk for private sector stakeholders. For example, Indian coffee plantations in biodiversity-rich Western Ghats benefit from pollinators and natural pest control, both essential for productivity and profitability.
- Enhanced Livelihoods and Rural Resilience: Biodiversity conservation offers livelihood opportunities, particularly in rural India, through eco-tourism, sustainable agriculture, and forestry. These activities contribute to both climate goals and poverty alleviation, as seen in projects like the Integrated Coastal Zone Management (ICZM) project, which supports mangrove restoration while creating jobs in coastal communities.

3. Role of the Private Sector in India

As India strives to achieve its climate and biodiversity goals, the private sector emerges as a pivotal force capable of transforming environmental commitments into action. India's private sector spans diverse industries—from agriculture, energy, and manufacturing to pharmaceuticals and technology—each of which impacts and depends on ecosystems in unique ways. By integrating climate and biodiversity considerations into business practices, Corporate Social Responsibility (CSR), Environmental, Social, and Governance (ESG) frameworks, and philanthropic initiatives, companies can drive meaningful contributions towards national and global environmental targets.

3.1 Operational Changes

Operational changes within companies can significantly reduce ecological footprints, drive sustainable resource use, and foster biodiversity protection. Indian companies are increasingly recognizing that environmental sustainability is not just a corporate responsibility but also a driver of long-term value. According to a 2021 survey by the Confederation of Indian Industry (CII), approximately 43% of surveyed companies identified biodiversity as a material issue in their operations, and many expressed interest in adopting practices that contribute to ecosystem conservation.

- Supply Chain Sustainability: By prioritizing sustainably sourced raw materials, companies mitigate negative impacts on biodiversity. For example, the apparel sector is shifting towards organic and sustainably harvested cotton, which reduces pesticide use and preserves soil health. Reliance Industries has adopted sustainable sourcing practices by investing in biodegradable and recycled materials, reducing the ecological impact of raw material extraction.
- Energy and Emission Reductions: As part of the renewable energy transition, Indian companies are increasingly investing in solar, wind, and other renewable sources. Tata Power, for example, has set a target to become net-zero by 2045 through initiatives like renewable energy expansion and forestation projects. The company's Project Aranya has planted millions of trees in Maharashtra and Jharkhand, enhancing carbon sequestration and supporting local biodiversity.
- Waste and Water Management: Indian businesses are adopting circular economy models to minimize waste. Hindustan Unilever, through its 'Sustainable Living Plan,' has committed to reducing plastic waste and has collaborated with NGOs and local communities to improve plastic collection and recycling. Additionally, water stewardship initiatives by companies like ITC Limited aim to create water-positive sites in drought-prone regions, benefiting both biodiversity and local communities.

3.2 Corporate Social Responsibility (CSR)

Under the Companies Act of 2013, India is among the very few countries with mandatory CSR for businesses meeting certain financial thresholds, requiring them to allocate 2% of their average net profits over the past three years to social initiatives. Environmental sustainability, one of the eligible CSR categories, provides a structured avenue for companies to invest in biodiversity and climate action. In FY 2022-2023, CSR contributions in India reached approximately ₹30,000 crore (USD 3.75 billion), with a significant portion directed toward environmental projects (Ministry of Corporate Affairs, 2024).

- Ecological Restoration Projects: Indian Oil Corporation's (IOC) CSR initiatives focus on ecological restoration through projects like reforestation, water conservation, and mangrove restoration. By 2022, IOC had restored over 2,000 hectares of degraded land, which helps enhance carbon capture and protect biodiversity.
- Sustainable Livelihood Programs: Companies are also investing in sustainable livelihood programs to support communities that depend on natural resources. The Mahindra Group's *Project Hariyali* has planted millions of trees and promoted agroforestry, which not only sequesters carbon but also provides livelihoods to rural communities, reducing deforestation pressures.
- Protected Area Support: Some corporations fund conservation efforts in protected areas through CSR. For example, the JSW Group has invested in the conservation of tigers and biodiversity in Karnataka's Bhadra Tiger Reserve, reinforcing the protection of critical habitats and endangered species.

3.3 Environmental, Social, and Governance (ESG) Practices

As global investors demand higher sustainability standards, ESG has become a major focus for Indian companies aiming to attract capital and manage risk. ESG frameworks encourage companies to include environmental metrics in their reporting, fostering accountability in biodiversity and climate commitments. According to a 2022 study by MSCI, the total assets under management incorporating ESG factors in India are expected to grow by 20% annually through 2025, driven by demand from both domestic and international investors.

- Biodiversity Metrics: Integrating biodiversity indicators into ESG reporting is a growing trend. Companies such as Infosys have started including biodiversity risks in their ESG disclosures, addressing impacts on natural habitats and species and setting measurable biodiversity goals.
- Sustainable Finance and Investment: The financial sector plays a critical role in driving biodiversity-positive investments. In 2021, HDFC Bank launched India's first green deposit program, encouraging investment in projects that support environmental goals, including biodiversity conservation. Similarly, SBI Green Bonds channel funds into sustainable projects, including those that restore ecosystems or support green infrastructure.
- Sustainable Supply Chains and Certifications: Companies like ITC Limited and Tata Steel have adopted the Science Based Targets initiative (SBTi) to reduce greenhouse gas emissions in line with climate science, with additional measures for sustainable sourcing and biodiversity-friendly practices. Certifications, such as the Forest Stewardship Council (FSC) and Rainforest Alliance, are becoming more prevalent as companies aim to demonstrate sustainability in their supply chains.

3.4 Philanthropic Initiatives

Beyond CSR and ESG, corporate philanthropy provides Indian companies with a flexible avenue to fund conservation, restoration, and community-focused projects. Philanthropic initiatives can support innovative models of conservation financing, bridge funding gaps in critical projects, and provide direct financial support to biodiversity and climate causes.

- Private Foundations: Large Indian corporations often have foundations that support biodiversity-related work. The Tata Trusts, one of the oldest philanthropic institutions in India, has invested in wildlife conservation, marine ecosystem research, and community-based environmental programs.
- Funding for Research and Innovation: Corporate philanthropy also supports research and capacity-building efforts. For example, the Wipro Foundation funds initiatives in sustainable agriculture and biodiversity education, fostering awareness and equipping local communities with the skills needed for conservation.
- Community Conservation Projects: Philanthropic contributions frequently go toward community-based conservation projects, which combine environmental and social benefits. The Aditya Birla Group supports local NGOs in creating community forests, which help mitigate deforestation and promote biodiversity-friendly practices among local communities.

4. Case Studies of Successful Private Sector Initiatives

Indian companies across various sectors have launched impactful initiatives that align with both climate and biodiversity objectives. These case studies showcase innovative approaches to ecosystem restoration, sustainable livelihoods, water and waste management, and nature-based solutions, illustrating the private sector's potential to drive environmental change.

4.1 Adani Ports and Special Economic Zone (APSEZ) – Coastal Ecosystem Restoration

Adani Ports and Special Economic Zone (APSEZ) is globally recognized for its commitment to environmental sustainability, positioning itself as one of the greenest port operators. For over two decades, APSEZ has been actively engaged in mangrove conservation and restoration projects along India's western coast, significantly contributing to climate change mitigation and biodiversity conservation. Mangrove ecosystems are vital for climate resilience, acting as natural barriers against storm surges, sea-level rise, and coastal erosion. They are among the most carbon-rich ecosystems, sequestering up to four times more carbon than terrestrial forests. These ecosystems also provide critical habitats for a diverse array of species, enhancing the resilience of coastal communities and infrastructure. APSEZ's initiatives are strategically spread across various coastal regions, including Gujarat (Mundra), Odisha (Dhamra), and other key locations along India's east and west coasts.

The company's environmental, social, and governance (ESG) initiatives focus on several key objectives: protecting and conserving mangrove cover, strengthening natural windbreaks in coastal areas, and developing multispecies mangrove parks to boost coastal biodiversity. Notably, APSEZ's efforts also aim to protect endangered species like the Olive Ridley turtles, listed under Schedule I of the Indian Wildlife (Protection) Amendment Act, 2022. APSEZ's mangrove restoration projects have enhanced coastal protection by reducing erosion and buffering against storm surges. These efforts align with the Sustainable Development Goals (SDGs), showcasing APSEZ's dedication to achieving a net positive impact on biodiversity across all operational sites. In the Luni area of Mundra, planted mangroves have demonstrated a carbon sequestration rate of 46.8 mg per hectare per year.

One standout initiative is the protection of the endangered Olive Ridley turtles along the coast of Odisha. Recognized as vulnerable by the IUCN Red Data Book, these turtles benefit from APSEZ's strategic initiatives at Dhamra Port. The breeding season, extending from November to May, sees increased numbers of Olive Ridley turtles due to these conservation efforts. By protecting these species, APSEZ ensures the preservation of critical habitats essential for the survival of numerous other species.

APSEZ's comprehensive mangrove conservation and restoration initiatives underscore its unwavering commitment to environmental stewardship, climate resilience, and biodiversity conservation. These efforts not only mitigate climate change impacts but also set a benchmark for sustainable port operations globally, reflecting the company's leadership in environmental sustainability. Partnerships with local communities, NGOs, and government agencies are crucial to the success of these projects. The company has also organized numerous workshops, training programs, and awareness campaigns, reaching thousands of community members and stakeholders.

Looking ahead, APSEZ aims for a net positive biodiversity impact and no net deforestation by 2050. Significant investments in research enhance mangrove restoration and ecosystem health monitoring. APSEZ's initiatives in conservation, community involvement, and biodiversity enhancement mitigate climate change impacts and protect biodiversity. Through strategic partnerships, community engagement, and innovation, APSEZ sets a global benchmark for sustainable port operations.

4.2 ITC's Sustainable Agriculture Program

Climate change poses significant challenges to global food systems, with rising temperatures, changing rainfall patterns, and more frequent extreme weather events threatening agricultural productivity and food security. In India, where agriculture engages more than half of the workforce, these impacts are particularly critical. The Intergovernmental Panel on Climate Change (IPCC) warns that a temperature increase of 1-4 degrees Celsius could reduce rice production by 10-30% and maize by 25-70%.

In response, ITC has implemented a robust Climate Smart Agriculture (CSA) program to enhance farm productivity, improve farmer incomes, and promote sustainable practices. This program is a cornerstone of ITC's agricultural CSR initiatives, contributing to several Sustainable Development Goals (SDGs). The CSA program helps farmers manage climate risks through practices such as introducing heat-tolerant crop varieties, adopting customized crop cycles, timely and in-situ planting, using broadbed and furrow systems, mulching, critical irrigation, and applying heat-ameliorating sprays. Additionally, ITC is building new and diverse farm value chains for crops like millets to improve climate adaptability and ensure food security.

ITC's initiatives are grounded in regenerative agriculture principles, focusing on developing healthy soil capable of producing high-quality, nutrient-dense food while improving the land. This approach leads to productive farms, healthy communities, and robust economies. ITC also provides technical assistance and market linkages to create an enabling environment for farmers. The CSA initiative aligns closely with the Indian Government's PM KUSUM, Sustainable Agriculture, Natural Farming, and Mission Millets programs. Since its inception in 2000, ITC's Climate Smart Agriculture (CSA) program has expanded from 15,000 farmers in 600 villages to over 1.05 million farmers across nearly 28 lakh acres in 19 states by 2023-24. The program, through 8,200 Farmer Field Schools, has trained 278,000 student farmers. Currently, it covers 4,800 villages and 10 lakh acres, reducing greenhouse gas emissions of select crops by 13% to 66% (2021 assessment). Farmers' net returns increased by up to 90% from 2016 to 2021. Overall, more than 2.7 million farmers have benefited, enhancing agricultural productivity and food security.

ITC's Sustainability 2.0 agenda promotes the Climate Smart Village (CSV) approach, aiming to cover 30 lakh acres and 10,000 villages by 2030, improving rural incomes and resilience. The company targets annual water savings of 2,000 million kiloliters by 2030. ITC's CSA initiatives address climate change impacts, promoting sustainable, regenerative, and climate-resilient farming practices. ITC's CSR initiatives tackle water scarcity, soil degradation, and climate change, empowering farmers with knowledge, technology, and sustainable practices. The company aims for a net positive biodiversity impact and no net deforestation by 2050, investing in research for better mangrove restoration techniques. ITC sets a benchmark for corporate responsibility in agriculture, ensuring a resilient and secure food system.

4.3 Mahindra & Mahindra – Afforestation through Project Hariyali

Mahindra & Mahindra's Project Hariyali, initiated in 2007, combats climate change and enhances biodiversity through large-scale tree plantation and sustainable agricultural practices. The project focuses on planting native tree species, restoring degraded lands, and creating green belts around industrial sites. Implemented across Maharashtra, Karnataka, Tamil Nadu, and Northern India, these efforts have significantly increased green cover, contributing to carbon sequestration and climate change mitigation.

Deforestation exacerbates climate change and jeopardizes farmers' livelihoods by degrading land and reducing agricultural productivity. Project Hariyali addresses these issues by engaging local communities in sustainable land management practices. To date, over 24 million trees have been planted. The project began with an annual target of planting one million trees across Mahindra locations and expanded to Araku Valley, Andhra Pradesh, in 2010 to create a functional forest for the tribal community. It has since extended to Himachal Pradesh, Punjab, and Uttar Pradesh, focusing on organic regenerative agriculture with zero chemical use. Project Hariyali has planted 24.86 million trees, with 14.90 million in the Araku region, boasting a survival rate of over 85%. This effort supports over 26,000 tribal farmer families, enhances biodiversity, and provides year-round livelihood opportunities through the cultivation of 19 native species.

In Phase I (October 2021 - March 2022), 70,000 trees were planted in Solan, and over 200,000 trees of 25 plant varieties were planted in Shravasti, Moga, and Tarn Taran. Phase II added another 370,000+ saplings between June and September 2022. In the 2022-2023 fiscal year, Mahindra Group planted 2.21 million trees, with Mahindra & Mahindra contributing 1.59 million. A significant portion (1.31 million trees) was planted in the Araku Valley, providing livelihood support to 3,275 tribal farmer families. These initiatives have sequestered over 153 kilotons of CO_2, significantly reducing the carbon footprint. Project Hariyali also emphasizes skill development, having trained 1,288 master trainers and 9,000 farmers in maintaining micro nurseries. There are 115 centers that provide skills for creating bioinoculants, leading to diverse employment opportunities.

Mahindra & Mahindra's Project Hariyali addresses deforestation, climate change, and biodiversity loss by empowering farmers with knowledge, technology, and sustainable practices. The project fosters a resilient agricultural sector contributing to national and global sustainability goals. Project Hariyali's impact on climate change mitigation is profound. Trees absorb CO_2 from the atmosphere, and the project's large-scale afforestation efforts significantly reduce greenhouse gas emissions. According to the FAO, forests absorb about 2.6 billion tonnes of CO_2 annually, about one-third of the CO_2 released from burning fossil fuels. By planting millions of trees, Project Hariyali helps offset these emissions, contributing to global climate change efforts. Biodiverse ecosystems are more resilient to climate change and provide essential services like pollination, water purification, and soil fertility. By restoring native tree species and creating green belts, Project Hariyali enhances local ecosystem resilience and supports diverse plant and animal species.

In conclusion, Mahindra & Mahindra's Project Hariyali is a comprehensive initiative addressing climate change and biodiversity conservation through large-scale tree plantation and sustainable agricultural practices. By integrating environmental and socio-economic benefits, the project sets a benchmark for corporate responsibility in environmental conservation, ensuring a greener and more sustainable future.

4.4 Tata Power – Restoring Aquatic Habitats and Species

For over five decades, Tata Power has pioneered biodiversity conservation, focusing on the Mahseer, a revered freshwater fish species known as the "Tiger of the Freshwater." Initiated in 1970, Tata Power's Mahseer conservation program aimed to rehabilitate the Deccan Mahseer, which had been decimated in its natural habitat. Through sustained efforts, the Deccan Mahseer has been successfully reclassified from the IUCN Red List of endangered species to the Least Concern status. This achievement underscores the effectiveness of Tata Power's conservation strategies, which include captive breeding, habitat restoration, and community engagement. Approximately 500,000 eggs are collected and fertilized annually, with over 8.1 million fry/fingerlings produced in the last 30 years. The captive breeding program at Tata Power's Walwhan facility in Lonavala is central to this initiative. This state-of-the-art breeding center has become a hub for scientific research and training, attracting scientists and students globally. The facility has successfully bred and reintroduced over 300,000 Mahseer fingerlings into their natural habitats, significantly boosting their populations and enhancing genetic diversity.

The company collaborates with government agencies and local communities to restore and protect Mahseer habitats, including improving water quality, preventing pollution, and promoting sustainable fishing practices. Since 1972, Tata Power has conducted mega afforestation drives in the northern Western Ghats, planting over 1.5 million native species to enhance biodiversity and increase plantation survival rates. These efforts contribute to carbon sequestration, with an estimated 150,000 metric tons of CO_2 absorbed annually, helping mitigate climate change. Recognizing the importance of community involvement, Tata Power has implemented extensive awareness and sensitization programs. These initiatives educate local communities and children about sustainable practices and the importance of biodiversity. Collaborations with institutions like Bharati Vidyapeeth have facilitated educational programs that reach a broad audience. Tata Power has trained 325 fisheries scientists and organized five national workshops, fostering knowledge exchange with international experts.

The impact of Tata Power's Mahseer conservation program is significant. The reintroduction of Mahseer fingerlings has revitalized river ecosystems, supporting biodiversity and local livelihoods. The afforestation efforts have resulted in substantial carbon sequestration, contributing to climate change mitigation. The GIS-based survey and mapping of green cover across five hydro locations and power station areas have provided valuable data for greenbelt improvement and carbon footprint estimation. This initiative exemplifies Tata Power's commitment to ecological stewardship and sustainable development, aligning with global efforts to combat climate change and preserve biodiversity.

Tata Power's Mahseer conservation initiative has successfully reclassified the Deccan Mahseer from 'Endangered' to 'Least Concern' on the IUCN Red List, demonstrating effective conservation efforts. Enhanced habitat conditions have increased Mahseer survival rates, contributing to healthier freshwater ecosystems. Community awareness initiatives have boosted participation in conservation, leading to better habitat protection and biodiversity awareness. The initiative focuses on captive breeding, habitat restoration, community engagement, and sustainable practices, enhancing the resilience of freshwater ecosystems to climate change. Improved water quality and pollution prevention support diverse aquatic life and ecological balance. This initiative exemplifies Tata Power's commitment to ecological stewardship and sustainable development, aligning with global efforts to combat climate change and preserve biodiversity.

4.5 Vedanta – Community Engagement in Restoration of Terrestrial Landscapes

Vedanta Resources has been a pioneer in biodiversity conservation, particularly in their mining areas, demonstrating a deep commitment to restoring natural habitats and protecting species. They have acknowledged the significant impact of mining operations on local communities, ecosystems, and the environment. To address this, they have implemented a comprehensive sustainability framework that balances environmental and humanitarian concerns with business needs, harmonizing economic progress with environmental, social, and governance (ESG) considerations.

Since 2014, Vedanta has undertaken extensive efforts in Rajasthan, Odisha, and Chhattisgarh, focusing on habitat restoration, wildlife protection, and biodiversity offsets. These initiatives have supported a wide range of plant and animal species and significantly improved ecosystem services such as water purification and soil stabilization. In Odisha, Vedanta's biodiversity conservation and habitat restoration program, initiated in 2010, has focused on critical habitats for wildlife, including grasslands and wetlands. This program has been instrumental in conserving endangered species such as the Olive Ridley turtles. The reforestation efforts have resulted in planting over 1 million native trees, enhancing carbon sequestration and contributing to climate change mitigation.

The "Back to Farming" program in Goa, launched in 2015, exemplifies Vedanta's commitment to sustainable development. By providing financial assistance for agricultural equipment, seeds, fertilizers, and irrigation facilities, the program has benefited over 5,000 farmers. This initiative has led to a 25% increase in agricultural productivity and a 20% improvement in soil health. The program has also helped restore over 500 hectares of degraded land, promoting sustainable land use practices and enhancing biodiversity. Vedanta's water conservation and sustainable farming initiatives in Rajasthan, started in 2012, have implemented advanced irrigation techniques to optimize water use. These efforts have saved over 7.5 million cubic meters of water in the past three years. The introduction of drip irrigation and rainwater harvesting systems has improved water availability for farming, reduced water stress on crops, and supported the growth of native plant species. This initiative has also led to a 15% increase in crop yields, demonstrating the effectiveness of sustainable agricultural practices.

Since 2018, Vedanta has engaged local communities in Chhattisgarh in conservation activities. By providing education on sustainable practices and conducting awareness programs, Vedanta has increased community participation in conservation efforts. This initiative has led to the protection of over 1,000 hectares of forest land and the restoration of several degraded areas. The community-driven approach has also resulted in a 40% increase in local biodiversity, with notable improvements in the populations of various plant and animal species. Their biodiversity conservation efforts align with several UN SDGs, including SDG 13 (Climate Action), SDG 15 (Life on Land), and SDG 6 (Clean Water and Sanitation). The company's initiatives have also contributed to climate change mitigation through increased carbon sequestration and improved ecosystem services. For instance, the reforestation efforts in Odisha alone are estimated to sequester approximately 50,000 tons of CO_2 annually

Vedanta's CSR and ESG initiatives have significantly impacted habitat restoration, biodiversity conservation, and community engagement. Over 500 hectares of mined-out areas have been restored, enhancing biodiversity through the reintroduction of native plant species and creating habitats for various fauna. In conclusion, Vedanta's initiatives demonstrate a strong commitment to sustainable development and climate change mitigation.

4.6 HCL – Restoring the Health of Marine and Coastal Ecosystems

Launched in 2021, Harit, The Green Initiative of the HCL Foundation, has emerged as a flagship program under the Environment Action umbrella. Harit's vision is to conserve, restore, and enhance indigenous environmental systems while responding to climate change through sustainable community engagement. Operational across nine states in India, Harit addresses climate change, environmental degradation, and biodiversity loss. The initiative focuses on building scalable and replicable models that are economically viable, socially acceptable, and environmentally sustainable, emphasizing full community participation and stewardship.

One of Harit's primary objectives is afforestation and habitat restoration. The initiative has successfully carried out afforestation projects in Uttar Pradesh, Tamil Nadu, and Karnataka, planting native tree species to restore degraded lands and increase green cover. These efforts have resulted in the plantation of 50,000 saplings in Uttar Pradesh and 75,000 saplings in Tamil Nadu. Habitat restoration activities in Tamil Nadu and Uttar Pradesh have focused on removing invasive species, planting native flora, and creating wildlife corridors, enhancing habitats and supporting a greater variety of plant and animal species.

The impact of Harit's initiatives is significant. Over 232.9 acres of land have been brought under plantation, with more than 250,000 saplings planted. These efforts contribute to increased carbon sequestration, aiding in climate change mitigation. The restoration of native habitats enhances biodiversity and improves ecosystem services such as water filtration, soil fertility, and pollination. By involving local communities, Harit has increased community resilience, improved livelihoods, and fostered greater environmental stewardship. Harit's initiatives align with several Sustainable Development Goals (SDGs), particularly SDG 13 (Climate Action) and SDG 15 (Life on Land). The program's focus on afforestation and habitat restoration directly contributes to climate change mitigation by increasing green cover and enhancing carbon sequestration. Additionally, the conservation and restoration of indigenous environmental systems support biodiversity conservation, aligning with global sustainability goals.
HCL's Harit initiative has also made strides in marine and coastal conservation, focusing on the coastal regions of Tamil Nadu, including Ramanathapuram and Thoothukudi districts. This initiative is dedicated to protecting and restoring coastal ecosystems, vital for biodiversity, climate resilience, and the livelihoods of coastal communities. One key activity is the retrieval of ghost nets, abandoned fishing nets that pose a significant threat to marine life. To date, over 57,000 kilograms of ghost nets have been removed from coastal waters, reducing marine pollution and preventing harm to marine life, including fish, turtles, and other aquatic organisms.

In addition to ghost net retrieval, Harit has focused on planting over 270,000 mangrove and shelter belt saplings to enhance coastal resilience, acting as natural barriers against storm surges and coastal erosion. These saplings are expected to sequester approximately 1,350 metric tons of CO2 annually, mitigating climate change and providing habitats for diverse marine species. Community engagement and education are integral to Harit's approach. Awareness programs and training sessions on sustainable fishing and coastal conservation have reached thousands, fostering community participation and sustainable resource use.

In conclusion, HCL's Harit initiative addresses climate change, environmental degradation, and biodiversity loss through afforestation, habitat restoration, and community education. By aligning with global climate action goals, Harit ensures a positive impact on the environment and local communities, highlighting the critical role of corporate responsibility in achieving sustainable development.

4.7 Key Learning emerging from the Case Studies

- **Leadership in Ecosystem Restoration for Climate Resilience:** The private sector can lead in ecosystem restoration, utilizing resources and expertise to scale projects that enhance climate resilience and biodiversity. Initiatives such as afforestation, mangrove restoration, and habitat conservation showcase how companies can contribute significantly to carbon sequestration and provide natural defenses against climate impacts like storms, floods, and erosion, setting benchmarks for corporate responsibility in climate adaptation.
- **Catalyzing Community Engagement and Sustainable Livelihoods:** Private sector projects that actively involve local communities in conservation create a foundation of shared responsibility and lasting impact. By integrating community engagement and capacity-building into environmental programs, companies can foster local ownership, enhance environmental stewardship, and support sustainable livelihoods, reinforcing the socio-economic benefits of conservation efforts.
- **Integrating Climate and Biodiversity Goals for Maximum Impact:** Corporations have the unique ability to align their climate and biodiversity initiatives, optimizing outcomes for both. By setting targets that encompass both carbon reduction and biodiversity protection, companies can create synergistic programs that contribute to ecosystem resilience, support diverse habitats, and build a cohesive response to environmental challenges.
- **Supporting Sustainable Development through Livelihood Creation:** The private sector is well-positioned to promote economic resilience by incorporating livelihood opportunities into environmental projects. Programs that generate income for local populations—such as agroforestry, sustainable farming, and eco-tourism—can reduce environmental pressure and enable communities to adapt to climate change, demonstrating the power of environmental initiatives in addressing socio-economic needs.
- **Scaling and Replicating Impactful Conservation Models:** With access to capital and resources, the private sector can scale and replicate successful conservation models across regions, supporting national and global biodiversity and climate targets. By leading in the adoption of scalable solutions like climate-smart agriculture and afforestation programs, companies set examples of impactful environmental action that can inspire and influence broader change.
- **Championing Education and Awareness as Conservation Enablers:** The private sector's role in promoting environmental awareness and education is essential for building a culture of conservation. Corporate-driven educational initiatives can elevate community knowledge on sustainable practices, ensuring long-term benefits and empowering communities to sustain conservation gains, thereby reinforcing the corporate commitment to sustainable development.

5. Policy and Regulatory Landscape in India

India's policy and regulatory landscape for climate action and biodiversity conservation is shaped by both its global commitments and national priorities. As a signatory to major international agreements—such as the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention on Biological Diversity (UNCBD), and United Nations Convention to Combat Desertification (UNCCD)—India has adopted policies that support an integrated approach to environmental protection, with the private sector increasingly seen as a key partner in achieving these goals. This section outlines India's international commitments and the domestic policies developed to meet these obligations.

5.1 Global Commitments and Frameworks

1. UN Framework Convention on Climate Change (UNFCCC):

- India is a signatory to the UNFCCC and its subsequent agreements, including the Kyoto Protocol (1997) and the Paris Agreement (2015). As part of its Nationally Determined Contributions (NDCs) under the Paris Agreement, India has committed to:
- Reducing the emissions intensity of its GDP by 45% from 2005 levels by 2030.
- Achieving approximately 50% of its cumulative electric power capacity from non-fossil-fuel sources by 2030.
- Creating an additional carbon sink of 2.5 to 3 billion tons of CO_2 equivalent through forest and tree cover by 2030.
- The government launched the National Action Plan on Climate Change (NAPCC) in 2008 to provide a roadmap for addressing climate challenges, with eight national missions aimed at promoting sustainable development, including the Green India Mission (GIM) and the National Solar Mission.

2. UN Convention on Biological Diversity (UNCBD):

- India ratified the UNCBD in 1994 and is committed to the conservation and sustainable use of biodiversity, as well as equitable benefit-sharing. As a part of the Post-2020 Global Biodiversity Framework, India aims to contribute to the global target of conserving 30% of land and water by 2030.
- Domestically, India developed the National Biodiversity Action Plan (NBAP) in 2008, updated in 2014, to integrate biodiversity goals into national development. This plan aligns with the 12 National Biodiversity Targets, addressing issues such as ecosystem services, genetic resources, and conservation awareness.

3. UN Convention to Combat Desertification (UNCCD):

- India ratified the UNCCD in 1996 to address land degradation, desertification, and drought, particularly in arid, semi-arid, and dry sub-humid regions. As part of its commitment to land restoration under the Bonn Challenge, India pledged to restore 26 million hectares of degraded land by 2030.
- To meet this goal, the government has introduced initiatives such as the Desertification and Land Degradation Atlas and state-specific programs on watershed management and land restoration.

These international commitments shape India's policy direction, providing a framework for national actions, many of which call for private sector involvement in implementation and financing.

5.2 National Policies and Programs

India has developed a comprehensive suite of policies to address climate and biodiversity issues, aiming to harmonize economic development with environmental sustainability. Key policies include the following:

1. **National Action Plan on Climate Change (NAPCC):**

- The NAPCC, launched in 2008, encompasses eight national missions addressing climate change through sustainable development. Each mission provides a strategic framework for specific areas:
- The Green India Mission (GIM) focuses on expanding forest and tree cover to sequester carbon and improve biodiversity. It aims to restore 5 million hectares of degraded forest land and enhance ecosystem services by promoting community-based forest management.
- The National Mission for Sustainable Agriculture (NMSA) promotes climate-resilient farming practices, including organic farming, water conservation, and crop diversification, benefiting biodiversity and improving soil health.
- The NAPCC's integrated approach to water, agriculture, forestry, and energy recognizes the interdependencies between climate action and biodiversity conservation.

2. **National Biodiversity Action Plan (NBAP):**

- The NBAP outlines India's strategy for biodiversity conservation, including targets to reduce biodiversity loss, sustainably manage resources, and ensure equitable benefit-sharing. The updated NBAP of 2014 aligns with the Aichi Biodiversity Targets, supporting the conservation of critical habitats and the sustainable management of natural resources.
- Key actions under the NBAP include:
- Protected Areas Expansion: India aims to expand its network of protected areas to conserve biodiversity hotspots and endangered species. Currently, India has over 900 protected areas covering approximately 5% of its land area.
- Biodiversity Management Committees (BMCs): Established at the local level, BMCs involve communities in biodiversity management and documentation of biological resources through People's Biodiversity Registers (PBRs).

3. **National Forest Policy and Compensatory Afforestation Fund Act (CAMPA):**

- The National Forest Policy prioritizes forest conservation, recognizing forests as critical carbon sinks and biodiversity reservoirs. The Compensatory Afforestation Fund Act (2016) mandates industries to compensate for forest land diverted for development projects, directing funds towards afforestation and biodiversity enhancement in affected areas.
- CAMPA has mobilized over ₹50,000 crore (USD 6.1 billion) for afforestation and forest restoration, providing a robust funding source for biodiversity-related projects.

4. **National Green Tribunal (NGT) and Environmental Regulations:**

- The NGT, established in 2010, strengthens enforcement of environmental laws, including the Environment Protection Act, Forest Conservation Act, and Wildlife Protection Act. By holding corporations accountable for environmental impacts, the NGT enforces biodiversity conservation and climate mitigation, promoting compliance within the private sector.

5. **State-Specific Action Plans and Initiatives:**

- In addition to national policies, Indian states have developed State Action Plans on Climate Change (SAPCCs) to address regional environmental challenges. States such as Maharashtra, Tamil Nadu, and Uttarakhand have prioritized ecosystem restoration, sustainable agriculture, and biodiversity conservation in their SAPCCs.
- The Maharashtra government, for example, launched a state-level climate adaptation plan that emphasizes mangrove conservation, sustainable fisheries, and community-based conservation initiatives.

5.3 Incentives for Private Sector Participation

The Indian government has introduced incentives to encourage private sector engagement in environmental initiatives, enabling businesses to integrate biodiversity and climate action into their strategies:

1. Corporate Social Responsibility (CSR) Mandate:

- Under the Companies Act of 2013, businesses meeting specific financial criteria must allocate 2% of their net profits toward CSR activities, with environmental sustainability among the permissible categories. This policy enables companies to support climate and biodiversity projects, from forest restoration to water conservation.

2. **Green Bonds and Financing Mechanisms:**
   - To mobilize funds for sustainable projects, India launched its first green bond framework in 2017, facilitating financing for projects with positive environmental impacts. By 2024, India had raised over USD 20 billion in green bonds, supporting projects in renewable energy, water conservation, and biodiversity. This includes sovereign green bonds worth USD 4.5 billion raised by the Government of India over the past two years.
   - In 2023, the government also introduced guidelines for biodiversity credits, creating opportunities for private sector investments in ecosystem services and biodiversity conservation.
3. **Public-Private Partnerships (PPPs) and Incentive Programs:**
   - Public-private partnerships are increasingly utilized for infrastructure projects with biodiversity implications, such as eco-tourism, sustainable forestry, and waste management. For instance, the Rajasthan Forest Department collaborates with private entities to restore degraded landscapes, supporting both biodiversity and local economies.
   - Government incentive programs, such as the FAME India scheme for electric vehicles and subsidies for renewable energy adoption, encourage companies to reduce emissions and support biodiversity-friendly energy sources.

5.4 Opportunities and Challenges

While India's policy framework supports biodiversity and climate integration, several challenges remain, including complex regulatory procedures and limited enforcement capacity. The private sector's role is pivotal in bridging gaps in financing, technology, and innovation. Partnerships between government, businesses, and communities will be crucial for achieving India's climate and biodiversity targets, with emerging finance mechanisms like green bonds, biodiversity credits, and CSR driving momentum.

6. Opportunities for Strengthening Private Sector Engagement

To meet India's ambitious climate and biodiversity goals, strengthening private sector engagement is essential. The private sector holds immense potential to drive sustainable practices, mobilize funds, and leverage innovation for environmental benefits. While businesses have increasingly recognized the importance of sustainability, further opportunities exist to deepen private sector involvement through financial innovations, collaborative platforms, capacity-building, and supportive policies.

6.1 New Financing Mechanisms and Green Finance

Financing mechanisms, such as green bonds, biodiversity credits, and impact investments, offer promising avenues for private sector contributions to biodiversity and climate goals. These instruments allow companies to access funding while supporting projects that deliver positive environmental outcomes, aligning business goals with sustainability priorities.

- Green Bonds: Green bonds provide a low-cost financing option for companies aiming to invest in sustainability. India's green bond market, valued at over USD 20 billion as of 2024, has primarily funded renewable energy projects but is expanding to include biodiversity and ecosystem restoration. For example, HDFC Bank's green bond in 2021 financed renewable energy projects with biodiversity-positive outcomes, such as solar farms in degraded lands that facilitate ecosystem recovery (Climate Bonds Initiative, 2022).
- Biodiversity Credits: Biodiversity credits are emerging as a novel financing mechanism, allowing companies to invest in biodiversity conservation and receive credits proportional to their environmental impact. In 2023, India introduced guidelines for biodiversity credits to incentivize private investments in forest conservation, wetland restoration, and sustainable land management. These credits, similar to carbon credits, can be traded or used to offset corporate biodiversity impacts, providing companies with both economic and reputational benefits.
- Impact Investments: Impact investing, focusing on generating measurable social and environmental returns alongside financial ones, is growing in India. According to a 2022 report by the Indian Impact Investors Council (IIIC), impact investment assets in India surpassed USD 10 billion, with biodiversity-focused sectors such as sustainable agriculture and eco-tourism gaining traction. This growth indicates a strong demand for financial products that serve dual purposes of profitability and environmental conservation.
- Carbon Credit Trading Scheme (CCTS): India's Carbon Credit Trading Scheme (CCTS) is a regulatory mechanism designed to promote carbon market development and support the country's climate goals under the Paris Agreement. Launched in 2022, the CCTS provides a framework for trading carbon credits that represent verified reductions in greenhouse gas emissions. By setting up a formal carbon trading platform, the CCTS enables industries to buy and sell carbon credits, incentivizing emission reductions and fostering investment in low-carbon technologies.

6.2 Collaborative Platforms for Multi-Stakeholder Partnerships

Effective climate and biodiversity action require collaboration between businesses, government agencies, NGOs, and communities. Multi-stakeholder platforms provide a structured avenue for such partnerships, combining resources, expertise, and networks for greater impact.

- Public-Private Partnerships (PPPs): PPPs enable the private sector to contribute expertise and financial resources to public projects with biodiversity or climate objectives. For example, the Namami Gange program, India's national river-cleaning initiative, has engaged private companies in wastewater management and riverbank restoration. Companies like PepsiCo and Coca-Cola have partnered with local governments to support wastewater treatment facilities and tree plantations along riverbanks, supporting biodiversity while improving water quality.
- Industry Alliances: Industry bodies such as the Confederation of Indian Industry (CII) have established platforms like the CII-ITC Centre of Excellence for Sustainable Development, which provides a forum for companies to collaborate on environmental issues. The centre promotes knowledge-sharing, offers sustainability certifications, and supports corporate biodiversity initiatives through technical guidance and case studies.

- UN Global Compact Network India (UNGCNI): The UNGCNI provides a platform for businesses committed to aligning with the Sustainable Development Goals (SDGs) to collaborate on projects that address climate and biodiversity challenges. For instance, the UNGCNI has engaged corporate members in developing water conservation projects in Maharashtra, integrating SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land) goals to promote sustainable water use and habitat restoration.

6.3 Capacity Building and Training for Corporate Leaders

Building capacity within the private sector for climate and biodiversity action is essential for translating corporate commitments into effective action. Training programs and knowledge-sharing initiatives can empower corporate leaders to adopt best practices, integrate sustainability into decision-making, and develop in-house expertise on biodiversity conservation.

- Sector-Specific Training Programs: Industry-specific training programs can be particularly impactful, offering companies tailored guidance on sustainable practices for their sectors. For example, the Business and Biodiversity Pledge initiative by the Ministry of Environment, Forest and Climate Change (MoEFCC) offers biodiversity management training to companies in sectors like mining, pharmaceuticals, and infrastructure, where biodiversity impacts are direct and measurable.
- Corporate Sustainability Certifications: Certifications such as LEED (Leadership in Energy and Environmental Design) and EDGE (Excellence in Design for Greater Efficiencies) encourage sustainable building and operations practices. These certifications often include biodiversity elements, such as the protection of natural habitats near business operations, encouraging companies to embed biodiversity-conscious practices into their development plans.
- Integration of Biodiversity and Climate Metrics in ESG Training: Given the rising importance of Environmental, Social, and Governance (ESG) factors in investment decisions, ESG training that includes biodiversity metrics can prepare companies to meet investor expectations and regulatory requirements. The International Finance Corporation's (IFC) 'Performance Standards on Environmental and Social Sustainability' have guided Indian companies in integrating biodiversity into their ESG metrics, particularly in high-impact sectors like mining and forestry.

6.4 Policy Reforms and Incentives

Supportive policy reforms and incentives can encourage greater private sector involvement in biodiversity and climate projects. By simplifying regulations and providing financial incentives, the government can create an enabling environment for businesses to invest in environmental initiatives.

- Expanding CSR Mandates for Biodiversity: India's CSR mandate under the Companies Act of 2013 provides a structured framework for companies to invest in social and environmental causes. Currently, it is estimated that less than 3% of CSR funds are allocated to biodiversity. Expanding CSR guidelines to emphasize biodiversity-specific projects, or offering tax incentives for biodiversity investments, could significantly increase corporate funding for conservation efforts. In FY 2022-2023, India's CSR spending on environmental sustainability totalled approximately ₹2,380 crore (USD 300 million), with potential to grow if more specific biodiversity requirements were introduced (Ministry of Corporate Affairs, 2024).
- Green Tax Benefits and Subsidies: Green tax benefits and subsidies can incentivize sustainable practices. For example, tax deductions for renewable energy investments and subsidies for sustainable agricultural practices motivate companies to adopt eco-friendly operations that also benefit biodiversity. Extending similar benefits to projects like wetland restoration and mangrove conservation would encourage biodiversity-positive investments by reducing operational costs.
- Streamlining Regulatory Processes: Complex regulatory procedures can deter private sector participation in environmental projects. Streamlining processes for biodiversity projects, such as simplifying the approval procedures for ecosystem restoration or sustainable development permits, can encourage private companies to engage more actively. The Ministry of Environment, Forest and Climate Change (MoEFCC) has initiated efforts to digitize and expedite environmental approvals, which could help businesses integrate biodiversity conservation into their operations more efficiently.

6.5 Promotion of Innovation and Technology for Conservation

Innovation and technology present valuable tools for addressing complex biodiversity and climate challenges. By fostering a culture of innovation, the private sector can leverage advancements in digital technology, data analytics, and green infrastructure to enhance biodiversity conservation.

- Satellite Monitoring and GIS: Companies can use satellite imagery and geographic information systems (GIS) for real-time monitoring of biodiversity and ecosystem health. In sectors like forestry and agriculture, companies like ITC Limited are using GIS for precision agriculture and forest monitoring, optimizing resources and minimizing environmental impact.
- Green Infrastructure and Eco-Engineering: Green infrastructure, such as green roofs, permeable pavements, and constructed wetlands, offers ecosystem services like water management, air quality improvement, and biodiversity support. Tata Steel has integrated green infrastructure into its facilities to reduce carbon emissions and improve local biodiversity, demonstrating a scalable model for industry integration.
- Digital Platforms for Transparency and Accountability: Digital platforms that enable companies to track and report their environmental impact contribute to transparency in corporate sustainability efforts. For example, the Carbon Disclosure Project (CDP) India tracks corporate disclosures on biodiversity and climate action, promoting accountability and incentivizing companies to improve their performance.

6.6 The UNGCNI Centre for Business Leadership on Nature Restoration:

Through its emerging Centre for Business Leadership on Nature Restoration, UNGCNI aims to further build on emerging opportunities by providing a platform for enhancing corporate engagement in biodiversity conservation through:

- Serving as a knowledge sharing platform for strategic integration of biodiversity-sensitive practices into business strategy and operations.
- Supporting corporates to enhance the quality of existing and upcoming compliance/disclosures expected at the national and global levels with regards to biodiversity.
- Supporting multi-stakeholder dialogue for pragmatic policy directions which contribute to better coherence between business and biodiversity conservation objectives.
- Enabling better linkages of private sector action with global and national priorities and targets related to biodiversity conservation.
- Contextualize and disseminate global good practices on corporate engagement with biodiversity conservation.

7. Action Points for Strengthening Multi-Stakeholder Engagement in Climate and Biodiversity Action

To achieve meaningful progress in climate resilience and biodiversity conservation, collaborative action across sectors is crucial. Governments, the private sector, and NGOs each play pivotal roles in advancing sustainable development goals, but their combined efforts—leveraging policy, finance, technology, and partnerships—can amplify impact. The following action points offer a roadmap for fostering integrated climate and biodiversity initiatives, with each point drawing on the strengths of multiple stakeholders to create a cohesive and effective approach.

7.1 Foster Public-Private Partnerships (PPPs) for Climate and Biodiversity Initiatives

Public-private partnerships (PPPs) offer an effective model for scaling initiatives that address both climate and biodiversity goals. By pooling resources, expertise, and networks, these collaborations can tackle large-scale challenges, such as ecosystem restoration, sustainable agriculture, and eco-friendly infrastructure development.

- Establishing Biodiversity and Climate Funds: Dedicated national or regional funds for biodiversity-positive climate projects can attract private investment and incentivize companies to contribute to high-impact initiatives. These funds, supported by governments and private entities, can lower investment risks by providing concessional finance or matching grants, making biodiversity and climate investments more viable for businesses.
- Scaling Nature-Based Solutions (NbS): PPPs focused on Nature-Based Solutions (NbS) are particularly effective in integrating biodiversity into critical sectors, such as agriculture, urban planning, and infrastructure. NbS projects—such as agroforestry, sustainable water management, and wetland restoration—enhance climate resilience and biodiversity while fostering socio-economic benefits. NGOs can contribute local expertise, communities can benefit from project outcomes, and businesses can achieve sustainability goals while enhancing their reputations.

7.2 Strengthen CSR and ESG Frameworks to Prioritize Biodiversity and Climate Action

With Corporate Social Responsibility (CSR) and Environmental, Social, and Governance (ESG) frameworks driving corporate accountability, aligning these standards with biodiversity and climate targets can significantly boost corporate contributions toward environmental sustainability.

- Expanding CSR Mandates: Integrating biodiversity-specific criteria within CSR requirements can direct more corporate resources toward ecosystem conservation and restoration. India's CSR spending, which reached approximately ₹30,000 crore (USD 3.75 billion) in FY 2022-2023, demonstrates the potential for CSR mandates to contribute significantly to biodiversity initiatives when supported by clear, biodiversity-focused guidelines.
- Incorporating Biodiversity Metrics into ESG Reporting: Biodiversity metrics within ESG standards enable companies to better understand and mitigate their environmental impacts, attract green finance, and meet the increasing expectations of environmentally conscious investors. Frameworks like the Task Force on Nature-related Financial Disclosures (TNFD) are developing global standards, making it easier for companies to integrate biodiversity measures into ESG reporting, which NGOs and governments can support with guidance on effective implementation. The Securities and Exchange Board of India (SEBI) is in the process of strengthening its Business Responsibility and Sustainability Reporting framework (India's national disclosure framework for corporate sustainability) to address better corporate action related to the environment, climate change and biodiversity conservation.

7.3 Harmonize Standards and Metrics for Climate and Biodiversity Reporting

Standardized reporting metrics for biodiversity and climate are essential for effective monitoring and transparency. By harmonizing these standards globally, governments, businesses, and NGOs can facilitate consistent reporting, enhance accountability, and attract investment for sustainability initiatives.

- Supporting Global Biodiversity Standards: Clear, consistent biodiversity reporting standards enable companies to assess and communicate their environmental impacts transparently. Adopting frameworks like those proposed by the TNFD can align corporate reporting with national biodiversity and climate goals, providing a unified approach that fosters both transparency and accountability.
- Aligning Climate and Biodiversity Disclosures with SDG Reporting: Integrating biodiversity metrics with the Sustainable Development Goals (SDGs) reporting framework simplifies reporting for companies and ensures that biodiversity targets contribute directly to global development goals, including SDG 13 (Climate Action) and SDG 15 (Life on Land). This alignment strengthens the integration of biodiversity and climate action within corporate strategy, with NGOs often playing a key role in data collection and impact assessment.

7.4 Expand Green Finance Mechanisms to Support Climate and Biodiversity Initiatives

Green finance instruments such as green bonds, biodiversity credits, and blended finance offer powerful tools for funding projects that deliver dual benefits for climate resilience and biodiversity conservation. Expanding these mechanisms can unlock significant private capital for environmental initiatives.

- Broadening Green Bond Eligibility for Biodiversity Projects: Green bonds, traditionally used to fund renewable energy, can be expanded to include ecosystem restoration, forest conservation, and water resource management, attracting more corporate investment in biodiversity-positive projects. For instance, India's issuance of over USD 20 billion in green bonds highlights the growing market potential, with biodiversity-focused bonds—such as "blue" bonds for marine ecosystems—poised to attract further interest.
- Creating Biodiversity Credit Markets: Biodiversity credits provide a market-based solution for companies to offset their environmental impacts by investing in conservation projects. Similar to carbon credits, biodiversity credits can incentivize corporate investment in habitat protection, species conservation, and ecosystem restoration. Developing international standards for biodiversity credits will strengthen market stability and enhance their appeal as a private sector investment option.

7.5 Encourage Corporate Commitments to Biodiversity Through Incentives and Recognition

Accountability frameworks and incentives can encourage companies to adopt biodiversity-positive practices and publicly commit to measurable biodiversity and climate targets. Recognition programs and voluntary pledges serve as powerful motivators, enhancing corporate reputation while supporting global conservation goals.

- Incentives for Biodiversity-Friendly Corporate Practices: Governments can provide tax benefits, subsidies, or recognition awards to companies that adopt sustainable practices, invest in ecosystem restoration, or reduce their biodiversity impact. Such incentives not only drive corporate action but also raise public awareness about the importance of biodiversity.
- Biodiversity Pledges for Accountability and Impact: Similar to carbon neutrality pledges, biodiversity pledges allow companies to set ambitious, measurable biodiversity goals, such as habitat conservation, pollution reduction, and support for Nature-Based Solutions (NbS). Voluntary pledges demonstrate corporate commitment to environmental goals and enhance brand value, with NGOs and governments playing essential roles in tracking and verifying pledge progress.

7.6 Advance Access to Technology and Data for Effective Monitoring of Climate and Biodiversity

Access to advanced technology and reliable environmental data is vital for monitoring and managing biodiversity and climate impacts. Leveraging technology can improve impact tracking, decision-making, and resource allocation, benefiting both companies and conservation efforts.

- Data-Sharing Platforms for Environmental Transparency: Multi-stakeholder data-sharing platforms can integrate biodiversity and climate data from sources like satellite imagery, GIS, and ecological databases, making reliable information available for decision-makers. Collaborative platforms ensure that government, corporate, and NGO stakeholders have access to comprehensive data, supporting better monitoring and adaptive management.
- Adoption of AI and Machine Learning for Ecosystem Monitoring: Advanced technologies like AI and machine learning are valuable tools for biodiversity monitoring, enabling companies to track deforestation, species populations, and ecosystem health. These technologies enhance project effectiveness and provide scalable solutions for high-impact sectors like agriculture and forestry, allowing for real-time adjustments based on data-driven insights.

8. Concluding Summary

The urgent need for integrated climate action and biodiversity conservation calls for a holistic, multi-stakeholder approach that mobilizes governments, the private sector, and civil society. As ecosystems become increasingly vulnerable to climate impacts, preserving biodiversity is not only an environmental imperative but also a strategic solution for enhancing climate resilience. India's unique biodiversity, diverse ecosystems, and growing economy make it an ideal context for driving synergy between climate goals and biodiversity conservation through public-private collaboration.

India is among the world's 17 megadiverse countries, harbouring approximately 8% of global biodiversity across varied landscapes, from the Himalayan forests to coastal mangroves. However, the pressures of climate change, land degradation, and habitat loss are intensifying. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), approximately 1 million species globally face extinction within the coming decades, underscoring the need for integrated action. For India, the consequences of biodiversity loss impact critical sectors like agriculture, water, and forestry, which collectively support more than 50% of the population and are highly vulnerable to both climate impacts and ecosystem degradation (IPBES, 2019).

8.1 Role of the Private Sector in Driving Integrated Action

The private sector holds tremendous potential to influence India's environmental future. With over ₹30,000 crore (USD 3.75 billion) allocated to Corporate Social Responsibility (CSR) initiatives in FY 2022-2023 alone, Indian companies have already demonstrated a growing commitment to environmental stewardship. Expanding CSR mandates to prioritize biodiversity and aligning Environmental, Social, and Governance (ESG) frameworks with global standards, such as the Task Force on Nature-related Financial Disclosures (TNFD), can drive significant contributions toward ecosystem conservation. Enhanced ESG and CSR commitments are poised to generate both direct environmental benefits and long-term financial returns by reducing corporate risks linked to environmental degradation.

Beyond CSR, the potential of innovative green finance instruments like green bonds, biodiversity credits, and impact investments offers new avenues for channelling private capital into biodiversity and climate initiatives. For example, India's issuance of over USD 20 billion in green bonds underscores the appeal of sustainable finance options. Expanding the scope of these instruments to include biodiversity-related projects—such as wetland restoration, sustainable agriculture, and forest conservation—could mobilize unprecedented resources for environmental projects, setting a model for other emerging economies.

8.2 Governmental and Policy Support for Climate-Biodiversity Integration

India's policy landscape reflects the country's commitment to environmental sustainability, with frameworks like the National Action Plan on Climate Change (NAPCC) and the National Biodiversity Action Plan (NBAP) directly addressing climate-biodiversity linkages. These policies provide foundational guidance, yet enhancing their scope through clearer incentives and streamlined regulatory processes will be essential to unlocking private sector engagement. For example, the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) has mobilized over ₹50,000 crore (USD 6.1 billion) for forest conservation and reforestation efforts, which, if complemented by corporate involvement, could significantly expand reforestation and conservation impacts (Ministry of Environment, Forest and Climate Change, 2021).

India's commitment to global frameworks like the UN Framework Convention on Climate Change (UNFCCC), the UN Convention on Biological Diversity (UNCBD), and the UN Convention to Combat Desertification (UNCCD) further reinforces its pledge to address climate and biodiversity as interconnected priorities. The expansion of national and state-level policies that align with these frameworks can create an enabling environment where private sector contributions are integral to achieving national and global environmental targets.

8.3 Key Opportunities for Multi-Stakeholder Collaboration

- Achieving integrated climate and biodiversity outcomes requires robust multi-stakeholder collaboration, with each group—governments, the private sector, and NGOs—playing a unique and complementary role. The following opportunities highlight areas where joint action can generate the greatest impact:
- Public-Private Partnerships (PPPs): Leveraging PPPs for projects such as forest restoration, sustainable water management, and Nature-Based Solutions (NbS) can pool resources, technical expertise, and local knowledge, scaling efforts to achieve broader ecological and socio-economic benefits. The Namami Gange program is a successful example of a PPP that combines corporate investment with government oversight to clean India's rivers, demonstrating the effectiveness of such models in addressing large-scale environmental challenges.
- Green Finance and Biodiversity Credits: Expanding green finance mechanisms, including green bonds and biodiversity credits, can make biodiversity-positive investments more accessible to the private sector. This approach not only unlocks new funding streams but also enhances corporate accountability and reputation, as companies that contribute to ecosystem restoration benefit from both financial and reputational returns.
- Standardized Reporting and Accountability: Harmonizing biodiversity metrics with ESG reporting frameworks such as the Business Responsibility and Sustainability Reporting (BRSR) framework, can increase transparency and incentivize businesses to integrate biodiversity goals into corporate strategy. Such standardization, supported by frameworks like the TNFD, will enable better data collection and reporting, creating a baseline for monitoring and improving biodiversity outcomes.

8.4 Conclusion: Towards a Unified Climate and Biodiversity Agenda

Integrating climate and biodiversity action is not only critical for environmental sustainability but also for socio-economic stability. Healthy ecosystems reduce climate risks by enhancing resilience against extreme weather events, stabilizing water cycles, and supporting agricultural productivity. For India, where millions depend on natural resources, sustainable ecosystem management is essential for livelihood security and food stability.

As stakeholders across sectors come together, a unified climate-biodiversity agenda offers opportunities to build resilient ecosystems, support sustainable livelihoods, and contribute to India's development. Governments can continue to provide policy guidance and incentives; businesses can innovate and invest in sustainable practices; and NGOs can bring local insights, technical expertise, and community support to achieve shared environmental goals.

The path forward calls for a proactive approach to environmental governance, one that fosters alignment among diverse stakeholders and leverages their respective strengths. By embracing these recommendations, India can model a sustainable development pathway that both protects its natural heritage and strengthens its resilience to climate impacts. Such integrated efforts, strengthened by policy innovation, financial investment, and community engagement, will enable India to lead by example, inspiring global climate-biodiversity action for a sustainable future.

The United Nations Global Compact Network India (UNGCNI) in collaboration with key government and private sector partners, is committed to supporting corporate sector organizations to act more proactively for biodiversity conservation in India.

Annexures

The Annexures provide additional resources, case studies, and references to support the strategies, recommendations, and action points outlined in this briefing paper. These supplementary materials serve as a resource for stakeholders seeking further information on integrating biodiversity and climate action, and they highlight successful initiatives, available frameworks, and potential areas for collaboration.

Annexure 1. Supplementary Case Studies: Expanding Corporate Contributions to Climate and Biodiversity
The following case studies highlight successful examples of private sector initiatives that have achieved significant biodiversity and climate benefits. These projects demonstrate best practices in corporate engagement, collaboration, and sustainability, offering replicable models for other companies and sectors.

1. Tata Steel's Raw Materials Division – Sustainable Mining and Restoration in Jharkhand:

- Tata Steel's Raw Materials Division has implemented an ecological restoration program across its mining sites in Jharkhand, adopting sustainable mining practices that prioritize environmental restoration and biodiversity protection. As part of its commitment to a net-zero carbon future, Tata Steel has rehabilitated approximately 800 hectares of mined-out land, restoring native vegetation and enhancing local biodiversity.
- The company's "Green Belt Development" program aims to plant a variety of native species that provide ecosystem services such as soil stabilization and carbon sequestration. The program has already led to the planting of over 2 million trees, sequestering around 40,000 tons of CO_2 annually.

2. Hindustan Unilever's Water Conservation Initiatives

- Water Savings: Hindustan Unilever has saved over 2.5 billion liters of water across its production sites, particularly benefiting water-scarce regions in Maharashtra and easing groundwater stress.
- Biodiversity Enhancement: The company's watershed management projects have increased vegetation and improved soil health, fostering local flora and fauna, enhancing ecosystem resilience.
- Community Training: HUL has trained more than 100,000 farmers in water-efficient agricultural techniques, reducing dependency on water, improving crop yields, and maintaining soil fertility.

3. Infosys' Carbon Offset and Biodiversity Programs

- Carbon Offsets: Infosys has restored over 2,000 hectares of degraded land in Karnataka through reforestation and soil management, offsetting approximately 50,000 tons of CO_2 annually and enhancing carbon stocks.
- Biodiversity Reserves: The company has established biodiversity reserves near its campuses in Bangalore and Pune, conserving native plant and bird species and contributing green spaces to urban areas.
- Employee Engagement: Through the 'Eco-Action' program, Infosys involves employees in tree planting, biodiversity monitoring, and other environmental activities, fostering a culture of environmental responsibility.

4. Indian Oil Corporation's (IOC) Mangrove Restoration in Coastal India

- Mangrove Reforestation: Indian Oil has restored over 1,500 hectares of mangroves along India's coastlines, capturing up to 1,000 tons of CO_2 per hectare annually, aiding both climate mitigation and habitat restoration.
- Climate Resilience: Mangrove forests established by IOC help buffer over 100,000 coastal residents against cyclones and rising sea levels, enhancing local climate resilience.
- Biodiversity Protection: Restored mangrove habitats support fish, crabs, and bird species, bolstering coastal biodiversity and strengthening local fisheries.

5. Wipro Foundation's Biodiversity and Sustainable Agriculture Programs

- Agroforestry and Sustainable Farming: Wipro Foundation's initiatives in Karnataka and Maharashtra promote crop diversification and organic farming practices that improve soil health and support biodiversity through reduced chemical use.
- Biodiversity Education: The Foundation's programs reach thousands of students and farmers, raising awareness about sustainable agriculture and biodiversity, fostering a culture of conservation.
- Community Resilience: By promoting sustainable livelihoods, Wipro's programs reduce reliance on deforestation for income, protect forests, and strengthen biodiversity in agricultural landscapes.

Annexure 2. Resource Links for Further Reading and Research

The following resources provide additional information on global and national policies, frameworks, and guidelines that inform best practices for climate and biodiversity integration:

- UNFCCC – Paris Agreement: The Paris Agreement outlines global commitments for climate action, emphasizing the role of ecosystems and biodiversity in climate resilience.
- Convention on Biological Diversity (CBD): The CBD provides frameworks and guidelines for conserving biological diversity, sustainable use of biodiversity, and fair sharing of benefits arising from genetic resources.
- Task Force on Nature-related Financial Disclosures (TNFD): The TNFD is developing a global framework for reporting and managing risks associated with biodiversity, helping businesses assess their environmental impacts.
- Ministry of Environment, Forest and Climate Change (MoEFCC), India: The official website provides resources, reports, and guidelines on India's climate and biodiversity policies, including the National Action Plan on Climate Change (NAPCC) and the National Biodiversity Action Plan (NBAP).
- Climate Bonds Initiative: This platform provides information on the green bond market, showcasing how green bonds finance biodiversity-positive projects.

Annexure 3. Frameworks and Guidelines for Biodiversity and Climate Action

The following frameworks and guidelines offer structured approaches to integrating biodiversity and climate considerations into corporate and policy practices, enabling stakeholders to contribute effectively to global sustainability goals:

- Green India Mission (GIM): Part of India's National Action Plan on Climate Change (NAPCC), the Green India Mission focuses on ecosystem restoration, forest management, and community participation to enhance carbon sequestration and biodiversity conservation. The mission aims to restore 5 million hectares of degraded forests, with an estimated sequestration potential of 100-150 million tons of CO_2 by 2030.
- Kunming Montreal Global Biodiversity Framework: The post-2020 Kunming Montreal Global Biodiversity Framework and its predecessor - the Aichi Targets, developed under the Convention on Biological Diversity, offer a roadmap for biodiversity conservation across sectors. The Post-2020 Global Biodiversity Framework aims to conserve at least 30% of the world's land and water by 2030. These frameworks inform national strategies like India's National Biodiversity Action Plan and support global biodiversity conservation goals.
- Science-Based Targets for Nature (SBTN): The SBTN initiative, launched by the Science-Based Targets Network, provides science-driven methods for companies to set measurable targets for biodiversity, water, and land use. Companies can use the SBTN framework to integrate biodiversity into their environmental goals, aligning corporate actions with ecosystem preservation and climate mitigation.

Annexure 4. Key Statistics on Climate and Biodiversity in India

Key data points that underscore the importance of integrated climate and biodiversity action in India:

- Biodiversity and Economic Impact: India's biodiversity supports sectors such as agriculture, forestry, and fisheries, which employ more than 50% of the country's population and contribute approximately 15% to GDP. Maintaining biodiversity is critical for these sectors, as biodiversity loss can disrupt ecosystem services that underpin agricultural productivity, water security, and climate resilience.
- Green Bond Issuance: As of 2024, India has issued over USD 20 billion in green bonds, predominantly for renewable energy projects. Expanding the scope of green bonds to cover biodiversity-related projects can diversify funding sources and support initiatives like reforestation, wetland restoration, and agroforestry (Climate Bonds Initiative, 2022).
- CSR Spending on Environmental Sustainability: Expanding CSR guidelines to explicitly include biodiversity conservation can further mobilize corporate resources toward ecosystem protection and restoration (Ministry of Corporate Affairs, 2022).

Annexure 5. Tools for Measuring and Reporting on Biodiversity and Climate Impact

The following tools support data collection, monitoring, and reporting for climate and biodiversity impact, providing companies and organizations with the resources needed for transparent and effective sustainability management:

- Task Force on Nature-related Financial Disclosures (TNFD) Framework: TNFD provides guidance on assessing and disclosing nature-related risks, helping companies align biodiversity with financial risk management. This framework is particularly valuable for companies seeking to integrate biodiversity into their ESG reporting practices, making it easier to track and mitigate environmental impacts.
- Global Reporting Initiative (GRI) Standards: The GRI Standards offer a widely accepted framework for sustainability reporting, with specific guidelines for environmental impact, including biodiversity and carbon emissions. GRI's biodiversity standards guide companies on disclosing habitat restoration efforts, pollution reduction, and natural resource management practices.
- The Biodiversity Indicators Partnership (BIP): The BIP provides over 50 biodiversity indicators for tracking progress towards national and international targets. These indicators help governments, NGOs, and companies measure biodiversity impacts effectively, informing policies and corporate strategies that support ecosystem resilience.

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About UN Global Compact Network India

As the United Nations Global Compact (UNGC) local arm, UN GCNI has been acting as a country level platform in providing a robust platform for Indian businesses, academic institutions and civil society organizations to join hands for strengthening responsible business practices. Our '10 Principles in areas of Human Rights, Labor, Environment and Anti-corruption' provide a common ethical and practical Framework for Corporate Responsibility - and the 17 Sustainable Development Goals (SDGs) adopted in September 2015, by all 195 Member States of the United Nations including India in order to end extreme poverty, gender inequality and injustice, and protect our planet- understood and interpreted by businesses around the world, regardless of size , complexity or location. UN Global Compact Network India acts as a nodal agency in providing a robust platform for businesses, non businesses, academic institutions, civil society organizations and also the state institutions to join hands for strengthening responsible practices and target the 2030 Global Goals. UN GCNI galvanizes an enabling environment for all the relevant stakeholders to drive the movement of Uniting Businesses for a better world.

For more information, visit our website at www.globalcompact.in.

Network India

UN Global Compact Network India
1706-1709, 17th Floor, World Trade Tower
Sector 16, Noida, Uttar Pradesh
Mobile: +91 98730 21511
Email: ratnesh@globalcompact.in
URL: www.globalcompact.in