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**BIODIVERSITY LOSS AND SUSTAINABLE DEVELOPMENT GOALS  
(SDGS): CHALLENGES, IMPACTS, AND PATHWAYS FOR  
CONSERVATION**

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**ABSTRACT**

Biodiversity underpins ecosystem stability, human well-being, food security, climate regulation, and sustainable economic development. However, it is declining rapidly due to anthropogenic pressures such as habitat destruction, deforestation, urbanization, pollution, overexploitation of natural resources, invasive alien species, and climate change. This decline threatens ecosystem services, including pollination, freshwater provision, carbon sequestration, and disease regulation, thereby hindering progress toward the United Nations Sustainable Development Goals (SDGs), particularly SDGs 2, 3, 6, 13, 14, and 15. This review examines the primary drivers and impacts of biodiversity loss and evaluates its relationship with sustainable development. It further discusses global and Indian conservation initiatives, including the Convention on Biological Diversity (CBD), the Kunming–Montreal Global Biodiversity Framework, and India's National Biodiversity Action Plan. Additionally, the review highlights conservation strategies such as ecosystem restoration, protected area management, sustainable land-use practices, community participation, and the application of GIS and remote sensing for biodiversity monitoring. The study concludes that integrating biodiversity conservation into environmental policies and development planning is essential for achieving the SDGs and ensuring long-term ecological sustainability, climate resilience, and human well-being.

**KEYWORDS:** Biodiversity Loss, Sustainable Development Goals (SDGs), Ecosystem Services, Climate Change, Conservation.

## 1. INTRODUCTION

Biodiversity refers to the variety of life on Earth, encompassing genetic diversity, species diversity, and ecosystem diversity. It represents the biological richness that supports ecosystem functioning and provides essential services upon which human societies depend. Healthy ecosystems regulate climate, purify water, maintain soil fertility, pollinate crops, control pests, recycle nutrients, and provide food, medicine, and raw materials. Consequently, biodiversity is widely recognized as the cornerstone of sustainable development (Millennium Ecosystem Assessment, 2005). Despite its immense importance, biodiversity is declining at an alarming rate. Human-induced environmental changes have accelerated species extinction to levels unprecedented in recorded history. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019), nearly one million species are threatened with extinction due to anthropogenic activities. Habitat conversion for agriculture and urban expansion, unsustainable exploitation of natural resources, pollution, invasive species, and climate change are among the principal drivers of biodiversity decline. These pressures not only reduce species richness but also impair ecosystem resilience and the capacity of ecosystems to provide life-supporting services. The consequences of biodiversity loss extend far beyond ecological degradation. Reduced biodiversity threatens global food production by decreasing pollinator populations and soil fertility, increases vulnerability to natural disasters, facilitates the emergence of zoonotic diseases, and weakens ecosystem resilience against climate change (Dasgupta, 2021). Furthermore, biodiversity loss disproportionately affects vulnerable communities whose livelihoods directly depend on forests, wetlands, rivers, and coastal ecosystems. Indigenous peoples and rural populations often experience the greatest impacts due to their close dependence on natural resources.

Recognizing the interconnected nature of environmental conservation and human development, the United Nations adopted the 2030 Agenda for Sustainable Development in 2015. The agenda consists of 17 Sustainable Development Goals (SDGs) that aim to eradicate poverty, protect the planet, and ensure prosperity for all. Biodiversity conservation is explicitly addressed in SDG 14 (Life below Water) and SDG 15 (Life on Land). However, biodiversity also plays a critical role in achieving several other goals, including Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), Clean Water and Sanitation (SDG 6), Climate Action (SDG 13), Sustainable Cities and Communities (SDG 11), and Responsible Consumption and Production (SDG 12) (United Nations, 2015).

Recent international initiatives, including the Kunming-Montreal Global Biodiversity Framework adopted under the Convention on Biological Diversity (CBD), emphasize reversing biodiversity loss through ecosystem restoration, sustainable resource management, and the protection of at least 30% of terrestrial and marine ecosystems by 2030 (CBD, 2022). Similarly, countries such as India have strengthened biodiversity governance through the Biological Diversity Act, protected area expansion, and community-based conservation initiatives. Nevertheless, significant challenges remain. Economic development frequently conflicts with conservation priorities, while weak governance, inadequate funding, illegal wildlife trade, and climate change continue to threaten biodiversity worldwide. Therefore, integrating biodiversity conservation into development planning has become essential for achieving long-term sustainability. This review explores the relationship between biodiversity loss and the Sustainable Development Goals by examining the major drivers of biodiversity decline, its socio-economic and environmental consequences, and contemporary conservation strategies. It argues that biodiversity conservation should be considered a fundamental pillar of sustainable development rather than a separate environmental objective.

## **2. OBJECTIVES**

- To examine the major causes and impacts of biodiversity loss and evaluate their implications for ecosystem functioning and human well-being.
- To analyze the relationship between biodiversity conservation and the achievement of the United Nations Sustainable Development Goals (SDGs), with particular emphasis on sustainable environmental management and policy interventions.

## **3. Concept and Importance of Biodiversity**

Biodiversity encompasses the diversity of life at three interconnected levels i.e. genetic diversity, species diversity, and ecosystem diversity (Convention on Biological Diversity [CBD], 1992). Genetic diversity refers to variations within species that enable populations to adapt to changing environmental conditions. Species diversity represents the variety and abundance of living organisms, while ecosystem diversity includes the different habitats, ecological processes, and biological communities that sustain life. Biodiversity is fundamental to ecosystem functioning and resilience. Diverse ecosystems are generally more productive, stable, and capable of recovering from disturbances such as droughts, floods, disease outbreaks, and climate-related events (Cardinale et al., 2012). Ecosystems with high biodiversity provide a wide range of ecosystem services, commonly categorized into

provisioning, regulating, cultural, and supporting services (Millennium Ecosystem Assessment, 2005). Provisioning services include food, freshwater, timber, medicinal plants, fibres, and genetic resources that support agriculture and biotechnology. Regulating services involve climate regulation, carbon sequestration, flood mitigation, pollination, pest control, and disease regulation. Cultural services provide recreational, spiritual, educational, and aesthetic benefits, while supporting services include nutrient cycling, soil formation, and primary production. Approximately half of the world's gross domestic product (GDP) depends directly or indirectly on natural ecosystems and biodiversity (World Economic Forum, 2020). Agriculture relies heavily on pollinators, healthy soils, and genetic diversity in crops. Fisheries depend upon healthy aquatic ecosystems, while forests provide livelihoods for more than 1.6 billion people worldwide (Food and Agriculture Organization [FAO], 2020). Beyond economic contributions, biodiversity has intrinsic value. Every species contributes uniquely to ecological balance and evolutionary processes. The extinction of even a single species may trigger cascading ecological effects, disrupting food webs and reducing ecosystem resilience.

#### **4. Major Drivers of Biodiversity Loss**

Biodiversity loss is primarily driven by human activities that alter natural ecosystems and reduce the abundance and diversity of species. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) identifies five major direct drivers of global biodiversity decline: habitat loss and land-use change, climate change, pollution, overexploitation of natural resources, and invasive alien species (IPBES, 2019). Habitat loss remains the leading cause of biodiversity decline. Rapid deforestation, agricultural expansion, urbanization, mining, and infrastructure development destroy and fragment natural habitats, reducing the survival of many plant and animal species. Climate change further accelerates biodiversity loss by altering temperature and rainfall patterns, increasing the frequency of extreme weather events, causing sea-level rise, and disrupting species distribution and ecological processes. Pollution from industrial waste, plastics, pesticides, fertilizers, and untreated sewage contaminates terrestrial and aquatic ecosystems, threatening wildlife and reducing ecosystem health. Overexploitation of biological resources through unsustainable logging, overfishing, hunting, and illegal wildlife trade has caused severe population declines in numerous species. Additionally, invasive alien species outcompete native organisms, alter habitats, spread diseases, and disrupt ecosystem functioning. These drivers often interact, intensifying their impacts on biodiversity and ecosystem services. The resulting decline

affects food security, freshwater availability, climate regulation, and human well-being. Addressing biodiversity loss therefore requires integrated conservation strategies, sustainable land and resource management, stronger environmental governance, and international cooperation. Reducing these pressures is essential for protecting biodiversity and achieving long-term sustainable development (Convention on Biological Diversity [CBD], 2022).

**Table No. 1. Major Drivers of Biodiversity Loss and Their Ecological Impacts.**

| Driver                 | Major Causes                                        | Ecological Impacts                                        | SDGs Affected          |
|------------------------|-----------------------------------------------------|-----------------------------------------------------------|------------------------|
| Invasive alien species | Human-mediated introduction of non-native species   | Competition with native species, habitat alteration       | SDG 15                 |
| Habitat loss           | Deforestation, urbanization, agricultural expansion | Species extinction, habitat fragmentation                 | SDG 15, SDG 13         |
| Climate change         | Rising temperature, extreme weather, sea-level rise | Species migration, coral bleaching, ecosystem degradation | SDG 13, SDG 14, SDG 15 |
| Pollution              | Industrial waste, plastics, pesticides, fertilizers | Water contamination, biodiversity decline                 | SDG 6, SDG 14, SDG 15  |
| Overexploitation       | Overfishing, illegal logging, wildlife trade        | Population decline, ecosystem imbalance                   | SDG 12, SDG 14, SDG 15 |

Source: Adapted from IPBES (2019), Convention on Biological Diversity (2022).

## 5. Global Status and Trends of Biodiversity Loss

Recent scientific assessments indicate that biodiversity is declining faster than at any previous period in recorded human history (IPBES, 2019). Some important global indicators include-

**Table No. 2. Selected Indicators of Global Biodiversity Loss.**

| Indicator                                    | Status                             |
|----------------------------------------------|------------------------------------|
| Species threatened with extinction           | Approximately 1 million species    |
| Terrestrial ecosystems significantly altered | About 75%                          |
| Marine ecosystems significantly altered      | About 66%                          |
| Global wetland loss since the 1700s          | Approximately 85%                  |
| Global forest area lost (1990-2020)          | Approximately 420 million hectares |

Source: IPBES (2019); FAO (2020); WWF (2022).

Deforestation remains concentrated in tropical regions, particularly the Amazon Basin, Central Africa, and Southeast Asia. Coral reefs, often described as the "rainforests of the sea," are rapidly degrading due to warming oceans, pollution, and overfishing. Freshwater biodiversity is declining even faster than terrestrial biodiversity because rivers and wetlands

face multiple pressures including dams, pollution, invasive species, and excessive water extraction. Scientists now refer to the current period as the Sixth Mass Extinction, primarily driven by human activities rather than natural geological processes (Ceballos et al., 2017).

## **6. Ecological and Socio-economic Consequences of Biodiversity Loss**

**Food Security:** Declining pollinator populations threaten global agricultural productivity. Approximately one-third of global food production depends on animal pollination, particularly by bees, butterflies, birds, and bats.

**Human Health:** Many modern medicines originate from plants, fungi, and microorganisms. Biodiversity loss reduces opportunities for discovering new pharmaceuticals and increases the risk of zoonotic diseases by disrupting ecological balances.

**Climate Regulation:** Forests, peat lands, mangroves, and oceans store enormous quantities of carbon. Their degradation accelerates greenhouse gas emissions and weakens natural climate regulation.

**Economic Development:** Nature-dependent industries including agriculture, forestry, fisheries, tourism, and pharmaceuticals generate trillions of dollars annually. Biodiversity decline therefore threatens employment, livelihoods, and long-term economic growth.

**Disaster Risk Reduction:** Healthy ecosystems reduce vulnerability to floods, landslides, droughts, cyclones, and coastal erosion. Mangrove forests protect coastal communities from storm surges, while wetlands absorb excess floodwater.

**Cultural Values:** Many indigenous communities maintain strong cultural, religious, and spiritual relationships with biodiversity. Species extinction therefore represents not only ecological loss but also cultural erosion.

Overall, biodiversity conservation should be viewed as an investment in sustainable development rather than merely an environmental obligation. Protecting ecosystems strengthens food security, climate resilience, public health, and economic stability while supporting the long-term achievement of sustainable development.

## 7. Biodiversity Loss and the Sustainable Development Goals (SDGs)

Biodiversity is a fundamental pillar of sustainable development because it supports ecosystem functions that are essential for human survival and economic prosperity. The United Nations Sustainable Development Goals (SDGs) recognize that conserving biodiversity is critical for achieving the 2030 Agenda for Sustainable Development (United Nations, 2015). Although biodiversity is directly addressed under SDG 14 (Life below Water) and SDG 15 (Life on Land), it also contributes significantly to several other goals. Biodiversity supports SDG 2 (Zero Hunger) by maintaining soil fertility, pollination, and genetic diversity necessary for sustainable agriculture and food security. It contributes to SDG 3 (Good Health and Well-being) by providing medicinal resources and regulating the spread of infectious diseases. Healthy forests, wetlands, and watersheds improve water quality and availability, thereby supporting SDG 6 (Clean Water and Sanitation). In addition, biodiversity-rich ecosystems such as forests, mangroves, and peat lands act as natural carbon sinks, helping mitigate climate change and advancing SDG 13 (Climate Action). However, biodiversity loss caused by habitat destruction, pollution, climate change, overexploitation of natural resources, and invasive alien species undermines these ecosystem services and threatens sustainable development. Declining biodiversity reduces agricultural productivity, weakens climate resilience, increases disaster risks, and affects livelihoods, particularly in resource-dependent communities. Therefore, integrating biodiversity conservation into national policies, sustainable land-use planning, ecosystem restoration, and community-based conservation is essential for achieving the SDGs. Protecting biodiversity not only preserves ecological balance but also ensures long-term environmental sustainability, economic resilience, and human well-being for present and future generations (IPBES, 2019; CBD, 2022).

**Table No. 3. Relationship between Biodiversity and Selected Sustainable Development Goals.**

| SDG                                         | Contribution of Biodiversity                             |
|---------------------------------------------|----------------------------------------------------------|
| SDG 2 – Zero Hunger                         | Supports crop diversity, pollination, and soil fertility |
| SDG 3 – Good Health and Well-being          | Provides medicinal resources and regulates disease       |
| SDG 6 – Clean Water and Sanitation          | Maintains watershed functions and water purification     |
| SDG 11 – Sustainable Cities and Communities | Enhances urban green spaces and ecosystem services       |
| SDG 12 – Responsible Consumption and        | Promotes sustainable resource management                 |

|                           |                                                        |
|---------------------------|--------------------------------------------------------|
| Production                |                                                        |
| SDG 13 – Climate Action   | Increases carbon sequestration and climate resilience  |
| SDG 14 – Life below Water | Conserves marine biodiversity and fisheries            |
| SDG 15 – Life on Land     | Protects forests, wildlife, and terrestrial ecosystems |

Source: Adapted from United Nations (2015), Millennium Ecosystem Assessment (2005).

## 8. Biodiversity Conservation in India

India is one of the world's 17 mega-diverse countries, harbouring nearly 8% of the world's recorded species despite covering only about 2.4% of the global land area (MoEFCC, 2023). The country's rich biodiversity spans forests, grasslands, wetlands, deserts, mangroves, coral reefs, and the Himalayan ecosystems. India contains four global biodiversity hotspots: the Himalaya, Indo-Burma, Western Ghats–Sri Lanka, and Sundaland (Nicobar Islands). To conserve this biological wealth, India has established an extensive network of protected areas and implemented species-specific conservation programmes. However, biodiversity continues to face threats from habitat loss, climate change, pollution, invasive species, and overexploitation of natural resources. Strengthening conservation efforts through sustainable resource management, scientific research, and community participation remains essential for preserving India's unique biodiversity (CBD, 2022).

## 9. Biodiversity Conservation Policies in India

India has established a comprehensive policy framework to conserve its rich biological diversity through legislation, protected area management, and community participation. The Biological Diversity Act, 2002 serves as the primary legal instrument for biodiversity conservation, promoting sustainable use of biological resources and equitable benefit-sharing. It also led to the establishment of the National Biodiversity Authority (NBA), State Biodiversity Boards, and Biodiversity Management Committees (Government of India, 2002). The National Biodiversity Action Plan (NBAP) aligns India's conservation priorities with the Convention on Biological Diversity (CBD) and the Sustainable Development Goals (MoEFCC, 2023). In addition, flagship programmes such as Project Tiger and Project Elephant have significantly strengthened wildlife conservation. India has also expanded its network of National Parks, Wildlife Sanctuaries, Biosphere Reserves, Conservation Reserves, and Community Reserves, contributing to the protection of endangered species and critical ecosystems while promoting sustainable environmental management.

## 10. Major Challenges to Biodiversity Conservation

Despite substantial progress, several challenges continue to hinder biodiversity conservation.

**Population Growth:** Increasing population places enormous pressure on forests, agricultural land, freshwater resources, and natural habitats.

**Economic Development:** Infrastructure expansion, highways, dams, mining projects, industrialization, and urban growth often lead to habitat fragmentation and ecosystem degradation.

**Climate Change:** Changing climatic conditions alter species distributions, breeding seasons, migration patterns, and ecosystem productivity.

**Weak Governance:** Insufficient enforcement of environmental regulations, illegal logging, and wildlife trafficking and inadequate institutional coordination reduce conservation effectiveness.

**Financial Constraints:** Many developing countries lack adequate financial resources for protected area management, biodiversity monitoring, scientific research, and ecosystem restoration.

**Public Awareness:** Limited environmental education and community participation reduce the effectiveness of conservation initiatives. Long-term biodiversity conservation requires active involvement of local communities, educational institutions, policymakers, and civil society organizations.

## 11. International Initiatives for Biodiversity Conservation

Biodiversity conservation has become a global priority through several international agreements and collaborative initiatives aimed at protecting ecosystems and ensuring the sustainable use of natural resources. The Convention on Biological Diversity (CBD), adopted at the Rio Earth Summit in 1992, is the principal international treaty dedicated to biodiversity conservation. It has three core objectives: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from genetic resources (Convention on Biological Diversity [CBD], 1992). In 2022, the Parties to the CBD adopted the Kunming-Montreal Global Biodiversity Framework, which established ambitious global targets, including conserving at least 30% of the world's terrestrial and

marine areas by 2030, restoring degraded ecosystems, reducing pollution, and mobilizing financial resources for biodiversity conservation (CBD, 2022). The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) provides comprehensive scientific assessments that guide international biodiversity policies and strengthen the science-policy interface. Its Global Assessment Report highlighted the unprecedented rate of biodiversity loss and emphasized the urgent need for transformative conservation actions (IPBES, 2019). The United Nations Sustainable Development Goals (SDGs), particularly SDG 14 (Life below Water) and SDG 15 (Life on Land), integrate biodiversity conservation into the global sustainable development agenda (United Nations, 2015). Additionally, the United Nations Decade on Ecosystem Restoration (2021-2030), led by the United Nations Environment Programme (UNEP) and the Food and Agriculture Organization (FAO), promotes large-scale restoration of degraded ecosystems to enhance biodiversity, climate resilience, and human well-being (UNEP & FAO, 2021). Together, these international initiatives provide a comprehensive framework for biodiversity conservation by promoting scientific cooperation, policy integration, sustainable resource management, ecosystem restoration, and collective global action.

**Table No. 4. Major Biodiversity Conservation Initiatives.**

| Initiative                                     | Year      | Primary Objective                                    |
|------------------------------------------------|-----------|------------------------------------------------------|
| Convention on Biological Diversity (CBD)       | 1992      | Biodiversity conservation and sustainable use        |
| Aichi Biodiversity Targets                     | 2010      | Global biodiversity conservation targets (2011-2020) |
| Kunming-Montreal Global Biodiversity Framework | 2022      | Protect 30% of land and oceans by 2030               |
| United Nations Decade on Ecosystem Restoration | 2021-2030 | Restore degraded ecosystems globally                 |
| Sustainable Development Goals (SDGs)           | 2015      | Integrate biodiversity into sustainable development  |

Source: Convention on Biological Diversity (2022), United Nations (2015), UNEP & FAO (2021).

## 12. Conservation Strategies and Policy Recommendations

Addressing biodiversity loss requires integrated conservation strategies supported by effective policies, scientific research, and community participation. Expanding and

strengthening protected areas, including national parks, wildlife sanctuaries, biosphere reserves, and marine protected areas, is essential for safeguarding critical habitats and endangered species. Establishing ecological corridors can further enhance habitat connectivity and facilitate species migration under changing climatic conditions. Ecosystem restoration should be prioritized through large-scale afforestation, wetland rehabilitation, mangrove restoration, and sustainable watershed management. Nature-based solutions can simultaneously improve biodiversity conservation, climate resilience, and ecosystem services. Sustainable agricultural practices, such as agroforestry, organic farming, crop diversification, and integrated pest management, should be promoted to reduce habitat degradation and chemical pollution. Governments should strengthen environmental legislation, enforce wildlife protection laws, and allocate adequate financial resources for biodiversity monitoring, conservation research, and ecosystem management. International cooperation under the Convention on Biological Diversity (CBD) and the Kunming-Montreal Global Biodiversity Framework should be reinforced to achieve global conservation targets. Technological innovations, including Geographic Information Systems (GIS), Remote Sensing, drone-based surveys, environmental DNA (eDNA), and Artificial Intelligence (AI), should be integrated into biodiversity assessment and monitoring programs. Public awareness campaigns and environmental education can encourage sustainable lifestyles and increase community involvement in conservation initiatives. Furthermore, Indigenous knowledge and community-based conservation practices should be incorporated into national biodiversity policies. Integrating biodiversity conservation into development planning and climate policies will help achieve the Sustainable Development Goals (SDGs) while ensuring long-term ecological sustainability, economic resilience, and human well-being.

### 13. DISCUSSION

The findings of this review demonstrate that biodiversity loss is not merely an environmental concern but a multidimensional challenge affecting ecological stability, economic development, and human well-being. The first objective sought to examine the major causes and impacts of biodiversity loss on ecosystem functioning and society. The analysis indicates that habitat destruction, climate change, pollution, overexploitation of natural resources, and invasive alien species are the primary drivers of biodiversity decline. These pressures reduce species richness, alter ecosystem structure, and weaken ecological resilience. As biodiversity declines, ecosystems become less capable of delivering essential services such as pollination, nutrient cycling, carbon sequestration, soil conservation, and water purification. The loss of

these services directly affects agricultural productivity, freshwater availability, disaster resilience, and public health. Furthermore, biodiversity degradation threatens the livelihoods of millions of people, particularly indigenous communities and rural populations that depend heavily on natural resources. Therefore, conserving biodiversity is fundamental to maintaining ecological balance and ensuring long-term socio-economic sustainability. The second objective focused on evaluating the relationship between biodiversity conservation and the achievement of the Sustainable Development Goals (SDGs). The review clearly establishes that biodiversity is central to the successful implementation of the 2030 Agenda for Sustainable Development. While SDGs 14 (Life Below Water) and 15 (Life on Land) directly emphasize biodiversity conservation, healthy ecosystems also support food security (SDG 2), human health (SDG 3), clean water (SDG 6), climate action (SDG 13), responsible consumption and production (SDG 12), and sustainable cities (SDG 11). Biodiversity conservation should therefore be integrated into national development planning rather than treated solely as an environmental issue. Nature-based solutions, ecosystem restoration, sustainable agriculture, protected area expansion, and community-based conservation can simultaneously improve biodiversity conservation and contribute to multiple SDGs. In addition, technological tools such as Geographic Information Systems (GIS), Remote Sensing, environmental DNA (eDNA), and Artificial Intelligence (AI) offer new opportunities for biodiversity monitoring and evidence-based decision-making. However, achieving these goals requires stronger environmental governance, adequate financial investment, scientific collaboration, and active public participation. Overall, the evidence suggests that biodiversity conservation is a prerequisite for sustainable development, climate resilience, and the well-being of present and future generations.

#### **14. CONCLUSION**

Biodiversity forms the ecological foundation upon which human societies, economies, and ecosystems depend. The accelerating loss of biodiversity has emerged as one of the greatest environmental challenges of the twenty-first century, threatening food security, freshwater resources, climate regulation, public health, and sustainable economic development. Human activities including habitat destruction, climate change, pollution, overexploitation of natural resources, and invasive species have significantly accelerated species extinction and ecosystem degradation. The Sustainable Development Goals (SDGs) recognize that biodiversity conservation is indispensable for achieving sustainable development. Although SDGs 14 and 15 directly address biodiversity, virtually every SDG depends on healthy

ecosystems and the services they provide. Protecting biodiversity therefore contributes not only to environmental sustainability but also to poverty reduction, food security, climate resilience, and human well-being. India, as one of the world's mega-diverse countries, possesses exceptional biological wealth but faces increasing conservation challenges due to rapid economic development and environmental degradation. Strengthening biodiversity governance, expanding protected areas, promoting sustainable resource management, restoring degraded ecosystems, and encouraging community participation remain essential for safeguarding this natural heritage. Ultimately, reversing biodiversity loss requires coordinated global action supported by scientific research, technological innovation, effective governance, and public participation. Biodiversity conservation should be integrated into all sectors of development planning to ensure a resilient, equitable, and sustainable future for present and future generations.

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