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Benefit Sharing Through Intellectual Property Regimes: A Critical Legal Study of Indigenous Peoples' Rights in India

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ABSTRACT

The environment is a source of precious natural wealth and biological resources, and indigenous peoples and local communities have long served as custodians of these resources and of the traditional knowledge associated with them. This paper examines whether the Indian legal framework guarantees fair and equitable benefit-sharing rights to indigenous peoples and local communities through the intellectual property regime. Adopting a doctrinal and comparative methodology, it analyses the international instruments that shape access and benefit-sharing, namely the Convention on Biological Diversity, the Nagoya Protocol, the TRIPS Agreement and the work of the World Intellectual Property Organization, before critically evaluating the Indian regime under the Biological Diversity Act, 2002, the Patents Act, 1970 and the Biological Diversity (Amendment) Act, 2023. The study finds that, while the amended regime continues to recognise the principle of fair and equitable benefit-sharing, its emphasis on ease of doing business, the decriminalisation of offences, the relaxation of prior-approval requirements for Indian entities and the narrowing of the scope of benefit-sharing raise serious concerns for the interests of indigenous communities. It further finds that synchronisation between the biodiversity regime and the patent system remains unsatisfactory because the National Biodiversity Authority and the Patent Office function as largely independent bodies with limited institutional coordination. The paper concludes by proposing reforms aimed at a synchronised legal framework with harmonised procedures, integrated digital platforms and clear timelines that promote innovation while safeguarding the rights of indigenous and local communities.

Keywords: *Benefit sharing, Indigenous peoples, Traditional knowledge, Biological Diversity Act, Nagoya Protocol, Intellectual property rights, Patent, National Biodiversity Authority.*

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I. INTRODUCTION

The environment is a source of precious natural wealth and biological resources that have helped sustain humankind for ages. Rivers, seas, forests and other ecosystems contain abundant natural resources that contribute to human betterment, economic development and scientific advancement. Nature is a provider of food, medicine, shelter, timber and raw material for industry. Ancient Indian literature such as the *Vedas* and the *Upanishads* contains traditional knowledge which has shown time and again that natural remedies are effective against many modern diseases and illnesses. Even *yogasana* and *pranayama* are proven holistic techniques that can help cure lifestyle diseases to a considerable extent. There are ample models and patterns that define the close relationship between humankind and the surrounding environment. Such a close association has been established for centuries, in which the environment enriches human life in numerous ways and human beings are, in turn, entrusted with the duty to care for the environment so as to sustain it for the benefit of future generations.

Indigenous peoples and local communities are the custodians of these natural resources and of the traditional knowledge associated with them, and they have utilised, preserved and transferred this knowledge for the sustainable use of natural and biological resources. Their close alliance with nature across generations has enriched their understanding of the environment and the ecosystem, of seasonal variations and climatic conditions, and has enabled them to develop predictive intuitions about the response of biodiversity to such conditions. Such a profound understanding of biodiversity marks these communities as key holders of biodiversity and renders them indispensable stakeholders in the field of biodiversity and benefit-sharing. It is therefore instructive to analyse the available legal framework in order to determine whether justice is done to the knowledge of indigenous peoples and local communities when biological resources are commercially utilised.

A. Research problem

The Nagoya Protocol, to which India is a signatory, strikes a balance between the interests of indigenous peoples who are custodians of biological resources and those of commercial entities engaged in the utilisation and commercialisation of such biological material. The Biological Diversity (Amendment) Act, 2023 has brought drastic changes to the original Act, raising concerns among environmentalists because the amendment is alleged to favour commercial entities disproportionately in the name of ease of doing business, compromising the interests of indigenous communities with respect to fair and equitable benefit-sharing. The Biological Diversity Act and the Patents Act intersect when it comes to patenting an invention made using

biological material. In India, insufficient synchronisation between the two Acts leads both to a compromise of the interests of indigenous peoples and local communities and to inconvenience for the patent applicant.

B. Research question

Does the Indian legal framework guarantee fair and equitable benefit-sharing rights to indigenous peoples and local communities through the intellectual property regime?

C. Research objectives

The aim of this research is to evaluate critically the Biological Diversity Act, the Patents Act and the 2023 Amendment in order to assess the veracity of fair and equitable benefit-sharing under the intellectual property regime and its compatibility with the Nagoya Protocol. The specific objectives are: to understand the concept of the right of indigenous peoples to fair and equitable benefit-sharing; to comprehend the international legal framework relating to biological diversity and the intellectual property rights connected to the theme of this paper; to compare the Biological Diversity Act, 2002 and the earlier Rules with the latest amendments for critical evaluation; to analyse critically the provisions of the Patents Act in order to examine their synchronisation with the Biological Diversity Act; and to propose suggestions and recommendations.

D. Research method

This study adopts a doctrinal research methodology based on the analysis of international treaties, national legislation, regulations, policy documents, government reports and scholarly literature. A comparative and analytical approach is employed to examine the evolution of benefit-sharing rights under international and Indian law and to evaluate critically the effectiveness of recent reforms in India's biodiversity governance framework.

II. BENEFIT-SHARING RIGHTS OF INDIGENOUS PEOPLES: UNDERSTANDING THE CONCEPT

The concept of the benefit-sharing rights of indigenous peoples rests on the principle that indigenous and local communities should receive a fair and equitable share of the benefits arising from the use of their biological resources, traditional knowledge, innovations and cultural practices.¹ It has emerged as a significant principle in international environmental and human rights law, particularly in relation to the utilisation of genetic resources, traditional

¹ Convention on Biological Diversity arts. 1, 8(j), 15, June 5, 1992, 1760 U.N.T.S. 79.

knowledge and biodiversity.² Over generations, indigenous communities have developed and preserved valuable knowledge concerning medicinal plants, agricultural practices, biodiversity conservation and the sustainable management of natural resources.³ This knowledge often serves as a foundation for scientific research, pharmaceutical development, biotechnology innovation and commercial products. Benefit-sharing seeks to ensure that, when such resources or knowledge are utilised by researchers, corporations or governments, the indigenous communities that have contributed to their preservation and development are adequately recognised and compensated.⁴

The principle of benefit-sharing is firmly embedded in international legal instruments such as the Convention on Biological Diversity (CBD), 1992, the Nagoya Protocol on Access and Benefit-Sharing, 2010, and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), 2007.⁵ These instruments recognise the rights of indigenous peoples to participate in decisions affecting their traditional knowledge and resources and emphasise the importance of obtaining their free, prior and informed consent (FPIC) before access or utilisation occurs.

Benefit-sharing may take various forms, including monetary benefits such as royalties, licensing fees and profit-sharing arrangements, as well as non-monetary benefits such as technology transfer, capacity-building programmes, educational opportunities, infrastructure development, healthcare facilities and participation in research activities.

The rationale for benefit-sharing rests on the principles of equity, justice and respect for the contributions of indigenous peoples to biodiversity conservation and sustainable development.

Benefit-sharing mechanisms seek to ensure that indigenous communities are not merely sources of information or resources but active partners in research, development and commercialisation. Consequently, benefit-sharing rights contribute not only to the economic empowerment of indigenous peoples but also to the preservation of traditional knowledge, the protection of cultural heritage and the promotion of the sustainable management of biological diversity for present and future generations.

² Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity arts. 5, 7, Oct. 29, 2010, 3008 U.N.T.S. 3.

³ Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: Seeds and Plant Varieties* 45–50 (Earthscan Publ'ns 2000).

⁴ Convention on Biological Diversity art. 15(7), June 5, 1992, 1760 U.N.T.S. 79; Nagoya Protocol arts. 5(1)–(2), Oct. 29, 2010, 3008 U.N.T.S. 3.

⁵ Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 79; Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity, Oct. 29, 2010, 3008 U.N.T.S. 3; G.A. Res. 61/295, United Nations Declaration on the Rights of Indigenous Peoples (Sept. 13, 2007).

III. INTERNATIONAL LEGAL FRAMEWORK

Historically, genetic resources and traditional knowledge originating in biodiversity-rich regions were often accessed and utilised without the consent of the communities that had conserved and developed them, leading to claims of exploitation and biopiracy.⁶ In response, the international community developed a legal framework to ensure that the benefits arising from the use of biological resources and associated traditional knowledge are shared fairly and equitably with the countries and communities that provide them.

A. Convention on Biological Diversity

During the 1970s and 1980s, the international community became increasingly concerned about the rapid loss of biodiversity caused by deforestation, habitat destruction, the overexploitation of natural resources, pollution, climate change and unsustainable development practices.

Scientists warned that many species were becoming extinct at an unprecedented rate, threatening ecological balance and human well-being.⁷ Before the CBD, several international treaties addressed specific aspects of conservation, such as the Convention on International Trade in Endangered Species (CITES), 1973, the Ramsar Convention on Wetlands, 1971, and the World Heritage Convention, 1972. However, these agreements focused on particular species or ecosystems and did not provide a comprehensive framework for biodiversity conservation and sustainable use. At the same time, advances in biotechnology increased the commercial value of genetic resources found mostly in developing countries, leading to concerns that biological resources and traditional knowledge were being utilised without adequate recognition of, or compensation to, the countries and communities that provided them. Developing nations therefore advocated the recognition of their sovereign rights over biological resources and the establishment of mechanisms ensuring that benefits derived from the utilisation of genetic resources would be shared fairly and equitably.

Thus the CBD emerged as a landmark international treaty that sought to balance environmental protection with economic development and social justice by establishing three interrelated objectives, namely the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the utilisation of genetic

⁶ Notable examples include neem (*Azadirachta indica*), turmeric (India), basmati rice (India and Pakistan), the Hoodia cactus (Southern Africa), ayahuasca (the Amazon region) and quinoa (the Andean communities).

⁷ Climate Change Academy, *Historical Development of Environmental Consciousness in Global Politics*, <https://climatechange.academy/climate-change-society/historical-development-environmental-consciousness/> (last visited June 10, 2026).

resources through appropriate access arrangements, technology transfer and financial support.⁸ The inclusion of benefit-sharing as a core objective represented a significant shift in international law, from the notion of unrestricted access to biological resources towards a framework based on state sovereignty,⁹ prior informed consent¹⁰ and equitable participation in the benefits derived from biodiversity,¹¹ thereby addressing concerns relating to biopiracy and the protection of traditional knowledge held by indigenous and local communities.¹²

B. Nagoya Protocol

The Nagoya Protocol is a critical international legal framework that addresses unregulated access to genetic resources by establishing access and benefit-sharing (ABS) mechanisms based on prior informed consent (PIC) and mutually agreed terms (MAT). The Protocol is important for conservation, indigenous rights and bio-based industries, and it brings into focus legal ambiguities, uneven national laws and the limited benefits that reach local communities.

The Nagoya Protocol helps to create a clear and reliable legal system¹³ for both providers and users of genetic resources. It does so by establishing transparent and predictable rules for accessing genetic resources, making it easier for researchers, companies and governments to understand their rights and responsibilities. The Protocol also helps to ensure that, when genetic resources are used outside the country from which they originate, the benefits arising from their use are shared fairly with the provider country and, where applicable, with indigenous and local communities.¹⁴ By guaranteeing fair benefit-sharing, the Nagoya Protocol encourages countries and communities to conserve biodiversity and to use biological resources sustainably. As a result, it supports environmental protection while also contributing to economic development, scientific progress and human well-being.

The Nagoya Protocol specifically addresses benefit-sharing through Articles 5.1, 5.2 and 5.5, while Article 12 requires that benefits be shared on the basis of mutually agreed terms (MAT). These agreements should be negotiated fairly,¹⁵ should involve the participation of indigenous

⁸ Convention on Biological Diversity art. 1, June 5, 1992, 1760 U.N.T.S. 79, <https://www.cbd.int/convention/text> (last visited June 10, 2026).

⁹ *Id.* arts. 3, 15(1).

¹⁰ *Id.* arts. 15(4), 15(5).

¹¹ *Id.* arts. 1, 15(7).

¹² *Id.* art. 8(j).

¹³ Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity art. 6(3), Oct. 29, 2010, U.N. Doc. UNEP/CBD/COP/DEC/X/1, <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf> (last visited June 11, 2026).

¹⁴ Nagoya Protocol arts. 5(1)–(2), Oct. 29, 2010, 3008 U.N.T.S. 3, <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf> (last visited June 12, 2026).

¹⁵ Nagoya Protocol arts. 5(1), 6(3)(g), Oct. 29, 2010, 3008 U.N.T.S. 3.

and local communities,¹⁶ should respect their rights¹⁷ as recognised under the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), and should acknowledge the sovereign rights of states over their biological resources.

The ultimate objective of benefit-sharing mechanisms is not merely to establish legal procedures but to ensure that the monetary and non-monetary benefits arising from the use of genetic resources and traditional knowledge actually reach the indigenous and local communities that have conserved and developed them over generations. This is essential to the promotion of justice, equity, biodiversity conservation and the protection of traditional knowledge.

C. The Agreement on Trade-Related Aspects of Intellectual Property Rights

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), 1994, administered by the World Trade Organization (WTO), establishes minimum standards for the protection and enforcement of intellectual property rights.¹⁸ It covers patents, trademarks, copyrights, geographical indications and industrial designs.¹⁹ Although the TRIPS Agreement does not explicitly contain provisions on access and benefit-sharing (ABS) or on the protection of traditional knowledge, it plays an important role in discussions concerning benefit-sharing because intellectual property rights are often granted over inventions developed using genetic resources and traditional knowledge.²⁰

A major concern is that patents may be obtained for inventions based on biological resources or traditional knowledge originating from indigenous and local communities without their consent or without sharing the benefits derived from such utilisation.²¹ This concern has prompted debate about the relationship between the TRIPS Agreement and the objectives of the Convention on Biological Diversity (CBD) and the Nagoya Protocol, both of which emphasise prior informed consent and fair and equitable benefit-sharing.

¹⁶ *Id.* arts. 5(2), 7.

¹⁷ *Id.* art. 12(1)–(2).

¹⁸ Agreement on Trade-Related Aspects of Intellectual Property Rights arts. 1–62, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement].

¹⁹ TRIPS Agreement pt. II, §§ 1–7, Apr. 15, 1994, 1869 U.N.T.S. 299.

²⁰ U.N. Conf. on Trade & Dev. (UNCTAD), *The Convention on Biological Diversity and the TRIPS Agreement: Policy Issues and Legal Options* 3–8 (2005); Secretariat of the Convention on Biological Diversity, *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity*, CBD Technical Series No. 10, at 12–18 (2003).

²¹ TRIPS Agreement art. 27(3), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994).

Scholars such as Graham Dutfield (2000), Carlos M. Correa (2002) and Vandana Shiva (1997) have criticised the TRIPS Agreement for facilitating the commercialisation and patenting of innovations derived from genetic resources and traditional knowledge without requiring patent applicants to disclose the origin of such resources or to demonstrate compliance with access and benefit-sharing obligations. According to these scholars, the absence of such requirements may contribute to instances of biopiracy, whereby biological resources and traditional knowledge are utilised without adequate authorisation, recognition or compensation to the source countries and to indigenous or local communities.²² As a result, situations of alleged biopiracy may arise when traditional knowledge or genetic resources are used without authorisation or compensation.

D. The World Intellectual Property Organization

Although the World Intellectual Property Organization (WIPO) does not currently establish a comprehensive and binding international regime for fair and equitable benefit-sharing comparable to that of the Convention on Biological Diversity (CBD) or the Nagoya Protocol, it plays an important role in protecting genetic resources and traditional knowledge.

WIPO's efforts are reflected primarily in the WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge (2024) and in the ongoing work of the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC).

The 2024 Treaty introduces disclosure requirements²³ that oblige patent applicants, in specified circumstances, to disclose the country of origin or source of the genetic resources and associated traditional knowledge used in an invention. Although these provisions do not directly create benefit-sharing obligations, they promote transparency, help prevent biopiracy and support the implementation of access and benefit-sharing mechanisms under the CBD and the Nagoya Protocol.

Furthermore, the draft texts developed within the WIPO IGC²⁴ emphasise the importance of prior informed consent, the participation of indigenous peoples and local communities, respect

²² Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: Seeds and Plant Varieties* (Earthscan Publ'ns 2000); Carlos M. Correa, *Protection and Promotion of Traditional Medicine: Implications for Public Health in Developing Countries* (South Centre 2002); Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (South End Press 1997); U.N. Conf. on Trade & Dev. (UNCTAD), *The Convention on Biological Diversity and the TRIPS Agreement: Policy Issues and Legal Options* (UNCTAD-ICTSD Project on IPRs & Sustainable Dev. 2005); Secretariat of the Convention on Biological Diversity, *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity*, CBD Technical Series No. 10 (2003).

²³ WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge art. 3, May 24, 2024, https://www.wipo.int/edocs/mdocs/tk/en/gratk_dc/gratk_dc_7.pdf (last visited June 15, 2026).

²⁴ *Id.* art. 3.

for customary laws and community protocols, and the fair and equitable sharing of benefits arising from the utilisation of traditional knowledge.

WIPO has also encouraged the development of traditional knowledge databases and defensive protection measures to prevent the unauthorised patenting of existing traditional knowledge.²⁵ Collectively, these initiatives contribute to the recognition and protection of the rights and interests of indigenous peoples and local communities and complement international efforts to ensure that the benefits arising from the use of genetic resources and associated traditional knowledge are shared in a fair and equitable manner.

IV. INDIAN LEGAL FRAMEWORK: A CRITICAL ANALYSIS

India is a megadiverse country: with only 2.4 per cent of the world's land area, it accounts for 7 to 8 per cent of all recorded species, including over 45,000 species of plants and 91,000 species of animals. The country's diverse physical features and climatic conditions have produced a variety of ecosystems, such as forests, wetlands, grasslands, deserts, and coastal and marine ecosystems, which harbour and sustain high biodiversity and contribute to human well-being.²⁶ For a long time, corporations and researchers used such biological material and the knowledge connected with it to produce and manufacture products, marketed those products and earned considerable profit, without sharing a penny with the communities that actually nurture such diversity. The Convention on Biological Diversity (CBD) was negotiated and signed in 1992 and came into force on 29 December 1993; India became a party to the Convention in 1994.²⁷ In keeping with the object and purpose of the CBD, the Biological Diversity Act, 2002 was enacted in India, and a three-tier structure was established at the local, state and national levels. The National Biodiversity Authority is one of the authorities charged with executing the functions under the Act.

In exercise of the powers conferred by Section 62 of the Biological Diversity Act, 2002, and in supersession of the National Biodiversity Authority (Salary, Allowances and Conditions of Service of Chairperson and Other Members) Rules, the Central Government made the

²⁵ World Intell. Prop. Org. (WIPO), *Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions*, WIPO Pub. No. 920 (2020), <https://www.wipo.int/publications/en/details.jsp?id=4518> (last visited June 15, 2026).

²⁶ Int'l Union for Conservation of Nature (IUCN), *India*, <https://iucn.org/our-work/region/asia/countries/india> (last visited June 15, 2026).

²⁷ Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 79, <https://www.cbd.int/doc/legal/cbd-en.pdf> (last visited June 15, 2026).

Biological Diversity Rules, 2004.²⁸ These Rules have in turn been superseded by the Biological Diversity Rules, 2024.²⁹

In pursuance of the Nagoya Protocol, 2010 under the CBD, the Guidelines on Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations, 2014 (the ABS Regulations, 2014) were issued.³⁰ These Guidelines have now been revised and notified on 30 April 2025 as the Biological Diversity (Access to Biological Resources and Knowledge Associated thereto and Fair and Equitable Benefit Sharing) Regulations, 2025 (the ABS Regulations, 2025).³¹

In exercise of the powers conferred by sub-section (1) of Section 63 of the Biological Diversity Act, 2002, the Government of Maharashtra has made the Maharashtra Biological Diversity Rules, 2008.

The Act has undergone radical modification in 2023 through the Biological Diversity (Amendment) Act, 2023. Similarly, the Biological Diversity Rules, 2024 have introduced major changes by replacing the Rules of 2004. The following table sets out a comparison of the original Act and Rules with the latest amendments. To align with the theme of this paper, the comparison focuses on the provisions relating to fair and equitable benefit-sharing from patent applicants and holders of products in which biological material and associated traditional knowledge are used.

A. Comparison of the Biological Diversity Act, 2002 and the Biological Diversity (Amendment) Act, 2023

In addition to bringing the Act into consonance with the Nagoya Protocol, the 2023 Amendment has contributed to widening the scope of biological resources, encouraging Indian researchers and entities to develop products using biological material and associated traditional knowledge, and simplifying the processes before the National Biodiversity Authority (NBA) and the State Biodiversity Boards (SBBs). However, the removal of the pre-approval requirement from the NBA for filing a patent,³² the non-participation of the benefit claimer and of indigenous peoples

²⁸ Ministry of Env't & Forests, Notification, GAZETTE OF INDIA, Extraordinary, pt. II, § 3(i) (Apr. 15, 2004).

²⁹ Ministry of Env't, Forest & Climate Change, Notification, GAZETTE OF INDIA, Extraordinary, pt. II, § 3(i) (Oct. 22, 2024).

³⁰ Pranav Verma, *Reviewing the New Access and Benefit Sharing Regulations, 2025*, LIVE LAW, <https://www.livelaw.in/articles/reviewing-new-access-benefit-sharing-regulations-2025-294405> (last visited June 19, 2026).

³¹ *Reviewing the New Access and Benefit Sharing Regulations, 2025*, *supra* note 30.

³² Priyanka Runwal, *Amendments to Indian Biodiversity Laws Could Open Doors to Exploitation*, SCIENCE (Jan. 19, 2022), <https://www.science.org/content/article/amendments-indian-biodiversity-laws-could-open-doors-exploitation>.

and local communities in the process of determining benefit-sharing,³³ and the decriminalisation of offences under the Act are matters of concern, since they raise the prospect of biopiracy, the determination of benefit-sharing on terms unfavourable to benefit claimers,³⁴ and an increase in offences under the Act. The term "commercialisation" is not defined in the Act. Consequently, once a patent is granted, it will be very difficult to track the commercialisation of the product, which compromises the right of indigenous peoples and local communities to share in the benefits. The insertion of the term "associated traditional knowledge" in place of "associated knowledge" throughout the Act has further reduced the scope of benefit-sharing, and the exclusion of codified traditional knowledge from the definition of "benefit claimer" has a similar effect.

Particulars	Biological Diversity Act, 2002	Biological Diversity (Amendment) Act, 2023
Objective of the Act	Conservation of biological diversity, sustainable use of its components and fair and equitable sharing of benefits arising from the use of biological resources and associated knowledge.	Retains the original objectives while additionally specifying alignment of the Act with the Nagoya Protocol and promoting ease of doing business, encouraging research
Codified traditional knowledge	Codified traditional knowledge is not excluded from the definition of benefit claimers	Codified traditional knowledge is expressly excluded from the definition of benefit claimers which has reduced the scope of benefit sharing.
Prior Approval for Patent	Prior approval of the National Biodiversity Authority (NBA) required to be taken by both Indian and Non-Indian entities before grant of patent or other intellectual property rights under Section 6.	Requirement of prior approval before grant of patent is retained only for non-Indian entities, and Indians are required to only register with NBA before grant of such Intellectual Property Right.
Prior approval of NBA at the time commercialisation	No such provision	Indians are required to take prior approval of NBA at the time of commercialisation of invention for which IP rights are obtained and which is developed with use of biological material or /and traditional knowledge associated with it is used. It sounds difficult to track the effective access to sharing benefits after the patent is granted. Moreover, term commercialisation is ambiguous.
Marginal heading of section 21	Determination of Equitable Benefit	Substituted by 'Determination of

³³ *Amendments to Law Could Make Biodiversity Vulnerable*, NEW INDIAN EXPRESS (Aug. 12, 2023), <https://www.newindianexpress.com/xplore/2023/Aug/12/amendments-to-law-could-make-bio-diversity-vulnerable-2604602.html>.

³⁴ PRS Legislative Research, *The Biological Diversity (Amendment) Bill, 2021*, <https://prsindia.org/billtrack/the-biological-diversity-amendment-bill-2021> (last visited June 17, 2026).

	Sharing by National Biodiversity Authority	Fair and Equitable Benefit Sharing by National Biodiversity Authority' thus expressly aligning with the terminology of the Nagoya Protocol.
Subject matter of Benefit Sharing	Benefits arising from use of accessed biological resources, their by-products, innovations, practices and knowledge relating thereto.	Benefits arising from use of accessed biological resources, their derivatives, innovations, practices and knowledge relating thereto. Replaced the word by product with derivatives with an aim to expand scope of biological resources. Because, most of the by-product does not attract ABS, however if such by-products are used as raw material for deriving a molecule or unrecognisable derivative, then ABS is applicable. Therefore, the by-product is replaced with derivative. Further, the 'derivative' is clearly defined in the Nagoya protocol and has broad meaning including by-products.
Associated 'Traditional' Knowledge	Term associated knowledge is used.	The word knowledge is prefixed by 'traditional' at all places in the Act which has reduced to scope of term knowledge and it results in to reduction of scope of benefit sharing.
Parties determining benefit	Determination of benefit sharing is in accordance with mutually agreed terms and conditions between the person applying for such approval, local bodies concerned and the benefit claims.	Determination of benefit sharing is in accordance with mutually agreed terms and conditions between the person applying for such approval, and the Biodiversity Management Committee represented by the National Biodiversity Authority. Thus, Local bodies and benefit claimers are excluded. And indirectly represented by NBA through BMC. Such exclusion raises concern for indigenous and local communities for their direct participation in determination of benefit.
Offences and Penalties	Criminal penalties including imprisonment and fines.	Offences are under the Act are decriminalized and replaced with monetary penalties through an adjudication mechanism. (discussed in detail in points below.)
Ease of Doing Business	Regulatory framework considered stringent by industry.	Explicitly aims at promoting ease of doing business and encouraging biodiversity-based industries.

B. Decriminalisation of violations of the Biological Diversity Act: a critical analysis

The Biological Diversity (Amendment) Act, 2023 introduced significant reforms to the Biological Diversity Act, 2002. The stated object of the amendment was to facilitate ease of doing business, to encourage research and innovation, and to reduce the compliance burden on local communities, including traditional healers and tribal groups. While defending the amendment in Parliament, Shri Bhupender Yadav, Union Minister for Environment, Forest and Climate Change, stressed that the legislation sought to decriminalise certain biodiversity-related violations and to replace criminal sanctions with a civil penalty mechanism.³⁵

The amendment modifies the enforcement framework by substituting monetary penalties for the earlier imprisonment provisions. These penalties are decided by designated adjudicating officers, which reduces the possibility of criminal prosecution for procedural violations. The changes are reflected in the amended Sections 55, 55A, 55B, 55C and 55D of the Act. The amendment also seeks to provide greater clarity about access to biological resources, traditional knowledge and benefit-sharing arrangements under Sections 7, 24 and 41.

Section 55 served as the principal penalty provision under the Biological Diversity Act, 2002. It imposed penalties for violations of Sections 3, 4, 6 and 7, which regulate access to biological resources, the transfer of research results, the obtaining of intellectual property rights and the commercial utilisation of biological resources. Following the 2023 amendment, criminal sanctions were replaced with a civil penalty regime that empowers adjudicating officers under Section 55A to impose penalties ranging from one lakh rupees to fifty lakh rupees, with higher penalties where the damage caused exceeds that amount and additional penalties for continuing contraventions. This reflects a shift from criminal prosecution to a regulatory, compliance-based approach.

The replacement of imprisonment with monetary penalties has raised concerns about whether there is sufficient deterrence against biodiversity violations. Recent instances of illegal mining in the Aravalli region,³⁶ encroachments in the Western Ghats,³⁷ the unauthorised extraction of medicinal plants³⁸ and controversies surrounding ecologically sensitive projects such as the

³⁵ Lok Sabha Secretariat, *Digital Sansad*, <https://sansad.in/ls> (last visited June 18, 2026).

³⁶ N.K. Kirad, *Environmental and Socio-Economic Impact of Illegal Mining in the Aravalli Region of Kishangarh Bas Tehsil*, 13 RESEARCH HUB INT'L MULTIDISCIPLINARY RSCH. J. 22 (2026), <https://doi.org/10.53573/rhimrj.2026.v13n05.004>.

³⁷ *Task Force to Start Getting Rid of Ghat Encroachments*, BANGALORE MIRROR (Aug. 5, 2024), <https://bangaloremirror.indiatimes.com/bangalore/others/task-force-to-start-getting-rid-of-ghat-encroachments/articleshow/112269581.cms>.

³⁸ Brittany Goree, *Overharvesting of Plants for Medicine*, ARCGIS STORYMAPS (Mar. 11, 2024), <https://storymaps.arcgis.com/stories/b21a0a88b37c4ceebf91e3ee29b355f3>.

Great Nicobar development project³⁹ demonstrate that biodiversity offences can generate substantial economic gains, thereby raising the question whether monetary penalties alone are sufficient to ensure compliance and to protect India's biological resources.

C. Comparison of the Biological Diversity Rules, 2004 read with the ABS Regulations, 2014 and the Biological Diversity Rules, 2024 read with the Biological Diversity Regulations, 2025

The latest Rules and Regulations are to be welcomed for their simplified and technology-driven procedures, with online applications and streamlined approvals. However, the remaining points noted above reflect greater discretionary power and monetary benefit for the NBA, which can adversely affect the well-being of indigenous peoples and local communities.

Particulars	Biological Diversity Rules, 2004	Biological Diversity Rules, 2024
Procedure under the Rules	Stringent procedure with multiple forms for Indians and non-Indians for access of biological resources, application for approvals etc.	Simplified and technology-driven procedures with online applications and streamlined approvals.
Fair and equitable benefit sharing mechanism	Rules are supplemented by detailed provisions supplemented by ABS Guidelines, 2014 which prescribes fixed percentages and formulas.	Rules are supplemented by Biological Diversity Regulations, 2025 authority to NBA to decide the percentage case to case basis without any fixed formula and without taking benefit claimers directly in a loop.
Share of NBA in benefit sharing	As per Rule 15 of Guidelines On Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations, 2014 Where approval has been granted by the NBA for research or for commercial utilization or for transfer of results of research or for Intellectual Property Rights or for third party transfer, the mode of benefit sharing shall be as under: (a) 5.0% of the accrued benefits shall go to the NBA, out of which half of the amount shall be retained by the NBA and the other half may be passed on to the concerned SBB for administrative charges. (b) 95% of the accrued benefits shall go to concerned BMC(s) and/ or benefit claimers.	As per Rule 12 Biological Diversity Regulations, 2025 of Where approval has been granted by the Authority for research or for commercial utilisation or for sharing or transferring results of research or for intellectual property rights, the mode of benefit sharing shall be as under: — (a) a minimum of ten percent. to maximum of fifteen percent. of the accrued benefits shall go to the Authority, out of which half of the amount may be retained by the Authority, as the case may be, and the other half may be shared with the Board or Council concerned; (b) the remaining amount of benefit sharing shall be distributed among the benefit claimers including the Committee.
Dispute Resolution	Limited procedural guidance.	More structured framework for

³⁹ Ashok Kumar Raghav, *In Fragile Ecosystems Like Great Nicobar, Constitutional Wisdom Lies in Ensuring That Transformation Is Ecologically Sustainable, Socially Just*, DOWN TO EARTH (Mar. 3, 2026), <https://www.downtoearth.org.in/governance/in-fragile-ecosystems-like-great-nicobar-constitutional-wisdom-lies-in-ensuring-that-transformation-is-ecologically-sustainable-socially-just>.

		adjudication and enforcement under the amended Act.
Ease of Doing Business	Procedural complexities and delays often criticised by stakeholders.	Simplified compliance requirements aimed at reducing regulatory burden.

V. A SYNCHRONISED LEGAL ARENA OF BIODIVERSITY AND THE INTELLECTUAL PROPERTY REGIME: TOWARDS BETTER PROTECTION OF INDIGENOUS PEOPLES' RIGHTS

The objective of the Patents Act is to promote innovation by granting patents to inventors, rewarding them with monopoly rights over their inventions for a limited period in return for the disclosure of those inventions. The core criteria for granting a patent are novelty, non-obviousness and industrial applicability (utility). The prime goal of the patent system is to support the dissemination of scientific and technical knowledge for industrial application and public use, for the well-being of humankind, while providing due royalties for a specified period to the inventor and thereby encouraging inventions useful to the public at large. When a patent is granted, the inventor obtains the statutory right to exclude others from using the invention for the specified period. The inventor thus enters into a carefully crafted bargain⁴⁰ with the government to disclose the invention publicly after the expiry of the limited period during which the monopoly is granted. During the monopoly period, the inventor has the exclusive right to make, sell, use and commercialise the invention and to earn profit from it without competition from any unauthorised user. It is important to note that, where the invention consists of or uses biological material, the patent officer requires the inventor to disclose the source and geographical origin of the biological material and to obtain approval from the National Biodiversity Authority (NBA) established under the Biological Diversity Act. It is at this point that the Patents Act and the Biological Diversity Act intersect.

The primary objective of the Biological Diversity Act is to provide for the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising from the use of biological resources and knowledge, and for matters connected therewith or incidental thereto.⁴¹ In furtherance of this objective, the National Biodiversity Authority is established to implement the provisions of the Act. The Authority is entrusted with the significant function of inquiring into applications seeking approval to file a

⁴⁰ Peter K. Chen, *What Is Patent Law?*, Fish & Richardson (Aug. 26, 2020), <https://www.fr.com/insights/ip-law-essentials/what-is-patent-law/>.

⁴¹ Biological Diversity Act, 2002, No. 18 of 2003, pmbi., Acts of Parliament, 2003 (India).

patent for an invention in which biological material is used, and it is required to consult the expert committee where necessary. The NBA may grant approval or reject the application with reasons. While granting approval, the National Biodiversity Authority shall determine the benefit-sharing in such manner as may be specified by regulations made in this behalf.⁴²⁴³

The requirement, laid down by the patent officer, of obtaining approval from the NBA reflects a degree of harmony between the two Acts. However, the following are some of the points of intersection that call for effective synchronisation between the two Acts.

A. Ambiguity regarding the time of NBA approval or registration

Section 6 of the Biological Diversity Act requires non-Indian entities to obtain prior approval from the NBA before filing for IPR registration, and it requires Indian researchers and entities to register with the NBA. The Patents Act, under the proviso to Section 10(4)(ii)(d), requires the source and geographical origin of biological material to be disclosed in the specification where such material is used in an invention. Notably, there is no specific provision for obtaining NBA approval or registration under the Patents Act; as a matter of practice, the patent officer requires the approval before the patent is granted.⁴⁴

The lack of connection between the two laws on the point of seeking approval from the NBA undermines the ultimate goal of maintaining checks on the use of biological material and associated traditional knowledge and of ensuring a fair and equitable benefit-sharing process.

B. Separate regulating authorities with limited institutional coordination

Patent applications involving biological resources are regulated by two independent authorities: the Patent Office and the National Biodiversity Authority. Both authorities examine different aspects of the same invention. The Patent Office evaluates novelty, inventive step and industrial applicability, whereas the NBA assesses the legality of access to biological resources and the benefit-sharing obligations. However, there is no integrated platform, common database or institutional mechanism for coordination between these authorities. Applicants are required to interact separately with both offices, to submit similar information more than once and to navigate distinct procedural requirements.

The dual regulatory framework increases the compliance burden on applicants and creates opportunities for procedural gaps. A lack of communication between the authorities may result

⁴² *Id.* § 19(3A).

⁴³ Biological Diversity Rules, 2004, r. 20 (India).

⁴⁴ Obhan & Assocs., *Biodiversity and Intellectual Property*, <https://www.obhanandassociates.com/wp-content/uploads/2018/02/BIODIVERSITY-AND-IP-2.pdf> (last visited June 19, 2026).

in patents being processed without adequate verification of biodiversity-related obligations, thereby jeopardising the interests of indigenous communities entitled to benefit-sharing.

C. Absence of an effective information-sharing mechanism

Although the Patents Act requires disclosure of the source and geographical origin of biological material, there is no automatic mechanism by which such information is communicated to the NBA. Similarly, the NBA does not communicate to patent examiners any data regarding approvals granted or benefit-sharing agreements executed. The absence of coordinated information exchange may lead to the grant of patents based on incomplete disclosures or without ensuring compliance with benefit-sharing requirements. It also hampers transparency and accountability in protecting the interests of indigenous and local communities.

D. Absence of a format for disclosure of the source and geographical origin of biological material

Although the Patents Act requires disclosure of the source and geographical origin of biological material, there is limited guidance on the extent and format of such disclosure. Applicants may provide incomplete or generalised information, making it difficult to trace the origin of the resource or to identify the community concerned. Insufficient disclosure hampers transparency, weakens monitoring by the authorities and makes the determination of rightful beneficiaries more difficult, thereby affecting the effectiveness of benefit-sharing arrangements.

There is therefore a pressing need for a synchronised legal framework with harmonised procedures, integrated digital platforms and clear timelines, which would promote innovation while safeguarding the rights and interests of indigenous and local communities.

VI. CONCLUSION

Forests are not only a natural habitat for flora and fauna but also a great reservoir of traditional knowledge and a variety of forest produce. The commercialisation of bio-resources has always been a matter of significant interest for profit-making entities, and legal intervention concerning the ownership of biological resources, together with legal provisions for the equitable sharing of benefits, acts as a catalyst in this regard. This paper has investigated the international and national legal frameworks governing the intersection of biodiversity conservation and intellectual property rights, with particular emphasis on the fair and equitable sharing of benefits arising from inventions based on biological resources and associated traditional knowledge. The study of the international instruments showed that the Convention on Biological Diversity, 1992 and the Nagoya Protocol, 2010 seek to establish a balanced framework in which the

conservation of biodiversity, the sustainable utilisation of biological resources and the equitable sharing of benefits coexist with scientific innovation and commercial exploitation. These instruments recognise that indigenous peoples and local communities are the guardians of biological resources and traditional knowledge and therefore deserve an equitable share in the benefits arising from their utilisation. Although the TRIPS Agreement does not explicitly contain provisions on access and benefit-sharing (ABS) or on the protection of traditional knowledge, it plays an important role in discussions concerning benefit-sharing because intellectual property rights are often granted over inventions developed using genetic resources and traditional knowledge. The introduction of disclosure requirements by the 2024 Treaty⁴⁵ under WIPO is noteworthy, as it obliges patent applicants, in specified circumstances, to disclose the country of origin or source of the genetic resources and associated traditional knowledge used in an invention.

India has endeavoured to satisfy these international obligations through the Biological Diversity Act, 2002 and the Patents Act, 1970. The requirement to disclose the source and geographical origin of biological material under the Patents Act, and the requirement of prior approval of the National Biodiversity Authority before the grant of patents under the Biological Diversity Act, establish a legislative intent to synchronise biodiversity conservation with the patent system. The original framework under the Biological Diversity Act, 2002 and the Biological Diversity Rules, 2004 adopted a community-centric approach by recognising local bodies and benefit claimers as important stakeholders in determining benefit-sharing arrangements.

However, the comparative study of the Biological Diversity (Amendment) Act, 2023 and the Biological Diversity Rules, 2024 reveals a shift in legislative priorities. While the amended regime continues to recognise the principle of fair and equitable benefit-sharing, it simultaneously emphasises ease of doing business, the simplification of procedures and the promotion of research and of the commercial utilisation of biological resources. The promotion of commercial activity is certainly significant for the economic development of the country; the interests of the custodians of nature, however, need not be threatened in the process. The decriminalisation of offences under the Biological Diversity (Amendment) Act, 2023 is a matter of concern, and its efficacy in discouraging unauthorised access to biological resources and traditional knowledge is doubtful. Relieving Indian entities of the obligation to seek prior approval from the NBA before filing for IPR creates a serious flaw. Although they are required to obtain prior approval at the time of commercialisation, it is wholly unclear what "commercialisation" means; indeed, it is difficult to track commercial activity relating to a

⁴⁵ *Supra* note 23.

product designed using biological material or traditional knowledge once the patent has been granted. The provisions of the Act that reduce the scope of access to benefit-sharing also need to be reconsidered, as they may result in serious injustice to those who have played a significant role in conserving biological resources for generations.

The study observes that synchronisation between the Biological Diversity regime and the patent system remains unsatisfactory. The patent authority and the National Biodiversity Authority continue to function largely as independent entities with limited institutional coordination. As a result, the objective of ensuring substantive justice for indigenous communities is often reduced to a procedural formality. The absence of an integrated digital mechanism for the exchange of information between the Patent Office and the National Biodiversity Authority further aggravates this problem. A more effective synchronisation of these legal regimes is therefore essential. It is notable that WIPO requires only the disclosure of the country of origin or source of the genetic resources and associated traditional knowledge used in an invention and does not require the production of the approval of the biodiversity authority of the country in which the invention is designed using biological material or associated traditional knowledge, and that similar provisions have permeated the Indian legal regime. However, mere adherence to an international instrument cannot be regarded as the fulfilment of legislative needs. All reasonable efforts need to be taken by countries proactively to achieve the objectives of law and justice.

VII. SUGGESTIONS AND RECOMMENDATIONS

On the basis of the detailed critical analysis of the provisions of the Biological Diversity Act and the Patents Act, with special consideration of the right of indigenous peoples to access benefit-sharing, this paper offers the following suggestions and recommendations.

First, the exclusion of codified traditional knowledge from the definition of "benefit claimer" should be reconsidered so as to curb the harm to the interests of indigenous peoples.

Second, in addition to non-Indian entities, Indian entities should be required to obtain prior approval from the NBA before filing for an intellectual property right in which biological material or traditional knowledge is used, so that access to benefit-sharing can be assured.

Third, in addition to the Biodiversity Management Committees (BMCs), local communities themselves should be considered in determining benefit-sharing, because the BMCs do not represent the interests of all indigenous peoples and local communities in this regard. Some indigenous groups, such as forest dwellers and tribal communities, may exist outside BMC boundaries, and their direct involvement would ensure that they receive benefits fairly rather

than through indirect representation by the BMCs. This would also align with the mandate of the Nagoya Protocol.

Fourth, the decriminalisation of offences under the Act should be reconsidered in order to safeguard indigenous peoples and local communities against rampant biopiracy.

Fifth, the Patents Act should be aligned with the Biological Diversity Act by requiring prior approval, as a statutory mandate, from the inventor at the time of filing for an IPR.
