

**INTERNATIONAL JOURNAL OF LAW
MANAGEMENT & HUMANITIES**
[ISSN 2581-5369]

Volume 9 | Issue 5

2026

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Access and Benefit Sharing in India: Reconciling Biodiversity Conservation, Sustainable Development and Community Rights

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ABSTRACT

International environmental law has historically centered on the control and ownership of natural and biogenetic resources. Numerous environmental conventions have addressed this question, prioritizing benefit-sharing mechanisms. Among these, Access and Benefit-Sharing (ABS) emerged as a key solution, aiming to balance the interests of developed and developing nations while conserving biodiversity. ABS, given effect by the Nagoya Protocol adopted in Nagoya, Japan, in October 2010 by the Parties to the Convention on Biological Diversity (CBD), is explored here in the context of sustainable development, with emphasis on the crucial role of equitable resource distribution in achieving long-term environmental, social and economic sustainability. Benefit sharing encompasses mechanisms for distributing the advantages derived from natural resources, knowledge or innovations among stakeholders, especially marginalized communities. The analysis examines the ABS framework of the CBD and the Nagoya Protocol and its relationship with other instruments on plant genetic resources, intellectual property and the rights of indigenous peoples. Drawing on India's framework under the Biological Diversity Act, 2002 and the Kani-Jeevani benefit-sharing arrangement, the paper considers how benefit-sharing frameworks can foster social equity and encourage sustainable practices. It further examines the obstacles to implementing such frameworks, including lack of awareness among local communities, bureaucratic hurdles, inadequate resources for implementation and conflicts between commercial interests and the rights of local communities. The research highlights the critical need to integrate benefit-sharing principles into sustainable development policies and initiatives in order to realize the United Nations Sustainable Development Goals (SDGs). It concludes by recommending a collaborative approach that empowers local communities and ensures the equitable and sustainable distribution of benefits derived from natural resource management.

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Keywords: *Environment, Sustainable Development, Access and Benefit Sharing, Biodiversity, Bio-resources, Natural Resources*

I. INTRODUCTION

With the accelerating pace of development, biological resources are being depleted at an alarming rate, disturbing the ecological balance of ecosystems. There is therefore a strong need to maintain a balance between the various components of the ecosystem. To this end, the concept of “sustainable development” was recognized, so that bio-resources are used within limits.¹ The relationship between biodiversity, sustainable development and the legal framework gradually gained importance as countries developed, because development heightened concern for the protection of the environment. This relationship plays a crucial role in achieving the major goals of global environmental governance.

India possesses a rich heritage of flora and fauna and is regarded as one of the world’s great repositories of biological diversity. To ensure that its bio-resources are used equitably, India adopted the concept of ABS in 2002 through the Biological Diversity Act. The principles of ABS serve as a systematic mechanism to ensure that the benefits derived from genetic resources are shared equitably among stakeholders, particularly the local communities and indigenous peoples who play an important role in conserving biodiversity.

The concept of ABS is also enshrined in the Convention on Biological Diversity (CBD), which focuses on the need for fair and equitable sharing of the benefits arising from the utilization of genetic resources. These principles are regarded not only as a legal obligation but also as a moral imperative, one that seeks to redress the historical injustices faced by communities whose traditional knowledge has safeguarded these resources.²

In parallel, the concept of sustainable development gradually took hold across the world. It aims to meet the needs of the present generation without compromising the ability of future generations to meet their own needs, and it is closely connected to biodiversity conservation.³

Degradation resulting from population growth, pollution and human destruction causes a loss of biodiversity that directly threatens the lives of millions of people, especially those who depend wholly on forests for their survival. ABS thus plays a crucial role both in preserving the natural habitats of living things and in developing strategies that promote economic growth and

¹ B.R. Ramesh, *Biodiversity Conservation and Management*, 44 TROPICAL ECOLOGY 85 (2003).

² K.V. KRISHNAMURTHY, AN ADVANCED TEXTBOOK ON BIODIVERSITY: PRINCIPLES AND PRACTICE (Oxford & IBH Publ’g Co. 2003).

³ MILLICENT LIGARE, THE NAGOYA PROTOCOL: ITS IMPACT ON ACCESS & BENEFIT SHARING, PATENT APPLICATIONS AND THE UTILISATION OF GENETIC RESOURCES (CreateSpace Indep. Publ’g Platform 2015).

environmental health. In Indian law, ABS is primarily recognized in the Biological Diversity Act, 2002, which aims to regulate access to biological resources and to ensure that the benefits arising from them are shared fairly and equitably. Its implementation has, however, faced various drawbacks, such as a lack of awareness among local communities, complex bureaucratic processes and insufficient mechanisms for benefit sharing. This study examines the intersections of ABS, sustainable development and the legal framework in India, asking how they work together to promote conservation and to preserve India's rich natural heritage under the existing policies. It aims to contribute to a deeper understanding of how India can overcome the hurdles of managing that heritage through ABS, sustainable development and the legal framework.

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is an international agreement adopted in 2010 as a supplementary agreement to the Convention on Biological Diversity (CBD). The CBD, adopted in 1992, is a critical global instrument for the conservation and sustainable use of biological diversity.⁴ The Nagoya Protocol was created in response to concerns about the possible exploitation and misuse of genetic resources and associated traditional knowledge, particularly those of developing countries and indigenous groups.

The Protocol seeks to address the unequal distribution of the benefits resulting from the commercial use of biodiversity and traditional knowledge, which frequently takes place without the providers' consent. It was the result of negotiations that began in 2004 and concluded in 2010, when the text was adopted at the tenth meeting of the Conference of the Parties to the CBD in Nagoya, Japan.⁵ The Protocol entered into force on October 12, 2014, ninety days after the deposit of the fiftieth instrument of ratification.⁶ It has since been ratified by many countries and has received significant international support.

The Protocol establishes a set of norms and procedures for access to genetic resources and associated traditional knowledge, together with procedures to ensure that the gains from their use are distributed fairly and equitably. It requires providers and users of genetic resources to agree on mutually agreed terms (MAT) governing access and benefit-sharing arrangements, and it requires prior informed consent (PIC) to be obtained from the provider country, or from

⁴ *Id.*

⁵ NATURE IN COMMON: BEYOND THE NAGOYA PROTOCOL (Catherine Aubertin & Anne Nivart eds., IRD Éditions & Muséum national d'Histoire naturelle 2021).

⁶ 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. 33(1), Oct. 29, 2010, U.N. Doc. UNEP/CBD/COP/DEC/X/1, annex (entered into force Oct. 12, 2014) [hereinafter Nagoya Protocol], <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>.

indigenous and local communities, before their genetic resources are used. The Nagoya Protocol is regarded as a critical instrument that encourages biodiversity conservation, the sustainable use of natural resources and the fair and equitable sharing of benefits, while respecting the rights and knowledge of indigenous and local peoples. It is a considerable step forward in global efforts to address the complex questions of access to genetic resources and benefit sharing.

The Protocol aims to promote biodiversity conservation and sustainable use by ensuring that the benefits of utilizing genetic resources and associated traditional knowledge are distributed fairly and equitably to the countries and communities that provide them. Its objectives include:

1. Providing a transparent legal framework for access to genetic resources and associated traditional knowledge;
2. Establishing clear rules and procedures for obtaining prior informed consent (PIC) from provider countries or from indigenous and local communities before their genetic resources are accessed;
3. Ensuring the fair and equitable sharing of benefits arising from the utilization of genetic resources and traditional knowledge; and
4. Promoting compliance with national access and benefit-sharing laws and regulations.

The Nagoya Protocol requires users and providers of genetic resources and traditional knowledge to enter into mutually agreed terms (MAT) governing access and benefit-sharing arrangements. It also supports the creation of national legal frameworks to implement the Protocol's requirements and to strengthen compliance and enforcement. By 2021, more than 120 countries had ratified the Nagoya Protocol, demonstrating global acknowledgment of the importance of access and benefit-sharing in fostering biodiversity conservation and sustainable development.

A. Access to genetic resources

The Nagoya Protocol is an international treaty that seeks to ensure the fair and equitable distribution of the benefits resulting from the use of genetic resources. States that are Parties to the Protocol may regulate access to genetic resources within their jurisdiction in the exercise of their sovereign rights over natural resources. Anyone wishing to obtain genetic resources from such a country must therefore follow that country's rules and regulations on access to genetic resources.

This helps to ensure that the advantages of using genetic resources are distributed fairly and equitably to the countries and communities that own them.

B. Access to associated traditional knowledge

Traditional knowledge, as the term is used in the Convention on Biological Diversity (CBD) and the Nagoya Protocol, neither of which defines it, refers to the knowledge, innovations and practices of indigenous and local communities that have evolved over time and are passed down through generations.⁷ This knowledge is frequently associated with the sustainable use and conservation of biological diversity, and includes traditional farming techniques, medicinal knowledge and cultural practices. The CBD recognizes the value of traditional knowledge in biodiversity conservation and sustainable use, as well as in the fair and equitable distribution of benefits from the use of genetic resources.

The Convention emphasizes the importance of respecting, preserving and promoting traditional knowledge, and of ensuring the full and effective participation of indigenous and local communities in decision-making processes, including those concerning the use of their traditional knowledge. The Nagoya Protocol specifically addresses “traditional knowledge associated with genetic resources”, that is, traditional knowledge held by indigenous and local communities that is associated with genetic resources.

Under the CBD, traditional knowledge thus covers a wide range of knowledge systems, practices and innovations that are deeply rooted in the cultural heritage and collective experience of indigenous and local communities, and that are essential to the sustainable management of biodiversity and ecosystems.

C. Fair and equitable benefit sharing

Under the Nagoya Protocol, the Parties are required to implement measures to ensure that access to genetic resources is based on prior informed consent (PIC) and mutually agreed terms (MAT). Users seeking access to genetic resources and associated traditional knowledge must therefore obtain permission from the provider country and negotiate mutually agreed terms regarding the sharing of benefits. The Protocol also establishes a framework for the fair and equitable sharing of benefits derived from the utilization of genetic resources, including monetary benefits, technology transfer, capacity-building and other forms of benefit sharing. Parties to the Protocol are encouraged to develop legal and policy frameworks that facilitate the sharing of benefits with the indigenous and local communities that hold traditional knowledge associated with genetic resources. Overall, the Nagoya Protocol aims to create a more transparent and predictable system for accessing genetic resources and associated traditional knowledge, while

⁷ See Convention on Biological Diversity art. 8(j), June 5, 1992, 1760 U.N.T.S. 79 [hereinafter CBD]; Nagoya Protocol, *supra* note 6, art. 7.

ensuring that the benefits derived from their use are shared fairly and equitably among all stakeholders, including indigenous and local communities. By promoting responsible and sustainable practices in the utilization of genetic resources, the Protocol contributes to the conservation of biodiversity and to the sustainable development of countries rich in biological resources.

II. SUSTAINABLE DEVELOPMENT

In its 1987 report *Our Common Future*, the World Commission on Environment and Development (the Brundtland Commission) gave the most widely cited definition of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

The need for sustainable development arises from the rapid pace of development across the world, which has given rise to global warming, pollution and population growth, among other problems. As the population increases, so does the consumption of natural resources, which has prompted serious discussion of how their depletion can be controlled. The concept of “sustainable development” was introduced to resolve this problem. Its main aim is to call for collective efforts towards building an inclusive, sustainable and resilient future for people and the planet.

The need for sustainable development arises from (i) the overexploitation of natural resources, (ii) the scarcity of resources and (iii) climate change.

Sustainable development was introduced to counter these trends. Around one million species are now threatened with extinction, and a decline in more than 60% of the world’s marine fisheries has been recorded in past years’ data. Food production will need to double over the next 40 years at a time when almost 23% of the world’s agricultural land has been degraded, and nearly two-thirds of the world’s population will be living in water-scarce areas by 2030, which clearly indicates the scarcity of resources. With the rise in population and pollution, atmospheric temperatures, extreme weather events and sea-level rise have all increased.

Sustainable development rests on three core elements: economic growth, social inclusion and environmental protection. Alongside these, sustainable economic growth, sustainable livelihoods, living in harmony with nature and appropriate technology are important for sustainable development. Environmental sustainability prevents nature from being used as an inexhaustible source of resources and ensures its protection and rational use. Environmental conservation, investment in renewable energy, saving water, supporting sustainable mobility and innovation in sustainable construction and architecture all contribute to environmental

sustainability on several fronts. Social sustainability, for its part, can foster gender equality and the development of people, communities and cultures, helping to achieve a reasonable and fairly distributed quality of life, healthcare and education across the globe. The last core element, economic sustainability, focuses on equitable economic growth that generates wealth for all without harming the environment. It also emphasizes investment in, and the equal distribution of, economic resources, with the main goal of eradicating poverty in all its forms and dimensions.

III. INTERNATIONAL LEGAL FRAMEWORK

With the adoption of the CBD, and later of the Nagoya Protocol, the perspective of various other international instruments concerning genetic resources and traditional knowledge changed.⁸ To define its relationship with existing and future legal instruments, the Nagoya Protocol addressed the point from the outset. Article 4(1) of the Protocol, which follows Article 22(1) of the CBD,⁹ provides that “[t]he provisions of this Protocol shall not affect the rights and obligations of any Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity”, and adds that it “is not intended to create a hierarchy between this Protocol and other international instruments”. Article 4(3) further requires the Protocol to be “implemented in a mutually supportive manner with other international instruments relevant to this Protocol”.¹⁰

The Nagoya Protocol is closely linked to a number of other international instruments and agreements addressing biodiversity protection, access to genetic resources, and the fair and equitable distribution of the benefits derived from the use of genetic resources. The essential links include:

1. Convention on Biological Diversity (CBD): The Nagoya Protocol, a supplementary agreement to the CBD, seeks to encourage biodiversity conservation and sustainable use. The CBD serves as the overarching framework for implementing the Protocol and establishes broader aims for biodiversity conservation and sustainable development.

⁸ CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY, Decision X/1, *Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization*, U.N. Doc. UNEP/CBD/COP/DEC/X/1 (Oct. 29, 2010), <https://www.cbd.int/doc/decisions/cop-10/cop-10-dec-01-en.pdf> (adopted at the tenth ordinary meeting of the Conference of the Parties, Nagoya, Japan, Oct. 18–29, 2010).

⁹ CBD, *supra* note 7. The Convention was opened for signature on June 5, 1992, at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil; its text had been adopted at Nairobi on May 22, 1992.

¹⁰ Nagoya Protocol, *supra* note 6, art. 4(1), (3); CBD, *supra* note 7, art. 22(1).

2. International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA): The ITPGRFA establishes its own multilateral system of access and benefit-sharing for plant genetic resources for food and agriculture. The Nagoya Protocol accommodates such specialized instruments: where a specialized international access and benefit-sharing instrument that is consistent with the objectives of the CBD and the Protocol applies, the Protocol does not apply between the Parties to that instrument in respect of the genetic resources it covers.¹¹ Both agreements seek to ensure a fair and equitable distribution of the benefits resulting from the use of genetic resources.
3. World Intellectual Property Organization (WIPO): The Nagoya Protocol interacts with the intellectual property system administered through WIPO, particularly patents and other forms of intellectual property protection for genetic resources and associated traditional knowledge. The Protocol aims to prevent the misappropriation of genetic resources and traditional knowledge through the patent system.
4. United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP): The Nagoya Protocol recognizes the rights of indigenous peoples and local communities over their traditional knowledge and genetic resources. It aligns with the principles of UNDRIP, which emphasizes the rights of indigenous peoples to control and benefit from their traditional knowledge and genetic resources.

The Nagoya Protocol is thus linked to a variety of international instruments and agreements aimed at promoting biodiversity conservation, the sustainable use of genetic resources and fair and equitable benefit sharing. These interactions strengthen the global biodiversity governance framework and contribute to the achievement of the Sustainable Development Goals.

IV. LEGAL FRAMEWORK OF ABS IN INDIA

India is among the world's most biologically diverse countries and is rich in traditional knowledge. Before 2002, access to biological and genetic resources in India was unregulated. Biological resources and traditional knowledge from India were used by many users for research, commercialization, patenting and large-scale exports.¹² For many years, consent was rarely sought from the providers of biological resources, and they were seldom involved in settling the terms of access and benefit sharing. India, however, has consistently opposed the

¹¹ Nagoya Protocol, *supra* note 6, art. 4(4).

¹² The "common heritage of mankind", also known as the common heritage of humankind or the common heritage principle, is a principle of international law which holds that defined territorial areas and elements of humanity's common heritage should be held in trust for future generations and regulated in the common interest. See Rudolph Preston Arnold, *The Common Heritage of Mankind as a Legal Concept*, 9 INT'L LAW. 153, 154 (1975).

inequity and unfair treatment that result when genetic resources and associated traditional knowledge are accessed without adequate benefits in return. Soon after signing the CBD, India had to contest the well-known neem and turmeric patents, which involved the misappropriation of traditional knowledge about the biochemical properties of the neem tree and the turmeric plant through patents granted in other countries.¹³

Even before the domestic ABS framework existed, Indian researchers shared benefits with holders of traditional knowledge (TK) in the research and commercial manufacture of Jeevani, a plant-based tonic.¹⁴ The researchers' use of the Kani tribe's TK in developing the anti-fatigue formulation Jeevani is widely recognized as an example of ethical research practice.

V. THE BIOLOGICAL DIVERSITY ACT, RULES AND ABS GUIDELINES

In 2002, following a ten-year consultative process, India enacted the Biological Diversity Act (BD Act), fulfilling its international commitment under the CBD.¹⁵ The BD Act shares the three objectives of the CBD: 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 associated knowledge. The Biological Diversity Rules, which set out application forms and detailed procedures for obtaining approvals, came into effect in 2004. In 2014 the Guidelines on Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations (ABS Guidelines) were notified; they prescribed the range of benefit-sharing percentages applicable to particular activities regulated under the BD Act and gave further detail on the procedural requirements for access.¹⁶ The law on ABS has been further supplemented by numerous notifications issued under the BD Act in response to new developments at home and abroad. The BD Act and related legal instruments govern biological resources in India, whereas the Nagoya Protocol applies only to genetic resources. In India, the Ministry of Environment, Forest and Climate Change (MoEFCC) serves as the national focal point for ABS, while the National Biodiversity Authority (NBA) is the competent national authority.

¹³ Saipriya Balasubramanian, *Traditional Knowledge and Patent Issues: An Overview of Turmeric, Basmati, Neem Cases*, MONDAQ (Apr. 18, 2017), <https://www.mondaq.com/india/patent/586384/traditional-knowledge-and-patent-issues-an-overview-of-turmeric-basmati-neem-cases>.

¹⁴ THE 2010 NAGOYA PROTOCOL ON ACCESS AND BENEFIT-SHARING IN PERSPECTIVE: IMPLICATIONS FOR INTERNATIONAL LAW AND IMPLEMENTATION CHALLENGES (Elisa Morgera, Matthias Buck & Elsa Tsiumani eds., Martinus Nijhoff 2013).

¹⁵ The Biological Diversity Act, 2002, No. 18, Acts of Parliament, 2003 (India).

¹⁶ Guidelines on Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations, 2014 (India) (notified Nov. 21, 2014).

The BD Act was substantially amended by the Biological Diversity (Amendment) Act, 2023, which came into force on April 1, 2024.¹⁷ Among other changes, the amendment decriminalized the Act's principal offences: contraventions of sections 3, 4, 6 and 7, previously punishable with imprisonment, now attract civil penalties of not less than one lakh and up to fifty lakh rupees, imposed by an adjudicating officer with an appeal to the National Green Tribunal. It extended the existing exemption of local people and communities (including growers and cultivators of biodiversity) and vairs and hakims from prior intimation to State Biodiversity Boards to codified traditional knowledge, to cultivated medicinal plants and their products (subject to a certificate of origin from the Biodiversity Management Committee) and to registered AYUSH practitioners. It also allowed Indian applicants for intellectual property rights to register with the NBA before the grant of the right, instead of obtaining its prior approval, with approval required at the stage of commercialization. The 2004 Rules have since been superseded by the Biological Diversity Rules, 2024, and the 2014 ABS Guidelines by the Biological Diversity (Access to Biological Resources and Knowledge Associated thereto and Fair and Equitable Sharing of Benefits) Regulations, 2025.¹⁸

VI. ABS IMPLEMENTATION IN INDIA

A. Phase I: access by the applicant through approval from institutional structures

India has a three-tier institutional framework to implement the ABS process, made up of the National Biodiversity Authority (NBA) at the national level, State Biodiversity Boards (SBBs) at the state level and Biodiversity Management Committees (BMCs) at the local level. These three bodies, constituted as distinct statutory bodies under the BD Act, carry out the tasks and obligations linked to the three phases of ABS in India: access, benefit sharing and benefit distribution.

1. National Biodiversity Authority
2. State Biodiversity Boards
3. Biodiversity Management Committees

¹⁷ The Biological Diversity (Amendment) Act, 2023, No. 10, Acts of Parliament, 2023 (India) (in force Apr. 1, 2024), § 8 (amending § 6), § 9 (substituting § 7), § 38 (substituting § 55 and inserting §§ 55A–55B), § 39 (omitting § 58).

¹⁸ The Biological Diversity Rules, 2024, G.S.R. 665(E) (Oct. 22, 2024) (India) (in supersession of the Biological Diversity Rules, 2004); Biological Diversity (Access to Biological Resources and Knowledge Associated thereto and Fair and Equitable Sharing of Benefits) Regulations, 2025 (India) (notified Apr. 29, 2025).

i. Institutional structures: National Biodiversity Authority (NBA)

The NBA was established by the Central Government under the MoEFCC, with its headquarters in Chennai. Following the 2023 amendment, the Authority comprises a Chairperson; sixteen ex officio members representing the Ministries dealing with agricultural research and education, agriculture and farmers welfare, AYUSH (Ayurveda, Unani, Siddha, Sowa Rigpa, Yoga and Naturopathy, and Homoeopathy), biotechnology, environment and climate change, forests and wildlife, the Indian Council of Forestry Research and Education, earth sciences, Panchayati Raj, science and technology, scientific and industrial research, and tribal affairs; four representatives of SBBs on a rotational basis; five non-official members; and a Member-Secretary.¹⁹ The non-official members are drawn from experts, including legal experts, and scientists with expertise in the three objectives of the BD Act, together with representatives of industry and of the conservers, creators and holders of biological resources and associated knowledge. The NBA relies on subject-specific expert committees, including the Expert Committees on Agrobiodiversity, Medicinal Plants, ABS and Normally Traded Commodities, to address various aspects of ABS relating to biological resources.

ii. Functions and powers of the NBA

The NBA is mandated to perform regulatory and advisory functions under the Act. Its regulatory functions include:

- Grant of approval to section 3(2) entities for access to biological resources for research, bio-survey and bio-utilization, and commercial utilization;
- Grant of approval for the transfer of research results to section 3(2) entities; and
- Grant of approval to section 3(2) entities for intellectual property rights, which must now be obtained before the grant of the right, and registration of other applicants before grant, with approval required at the stage of commercialization.

The Act requires the approval of the NBA for each of the activities specified above. The NBA's regulatory jurisdiction applies differently to different types of natural and legal persons.²⁰

iii. State Biodiversity Boards

The BD Act authorizes State Governments to establish SBBs, and SBBs have been established in all 28 States. Following the 2023 amendment, an SBB consists of a Chairperson, not more

¹⁹ The Biological Diversity Act, 2002, *supra* note 15, § 8(3)–(4), as amended by The Biological Diversity (Amendment) Act, 2023, *supra* note 17, § 10.

²⁰ BIODIVERSITY AND CONSERVATION: CHARACTERIZATION AND UTILIZATION OF PLANTS, MICROBES AND NATURAL RESOURCES FOR SUSTAINABLE DEVELOPMENT AND ECOSYSTEM MANAGEMENT (Jeyabalan Sangeetha, Devarajan Thangadurai, Goh Hong Ching & Saher Islam eds., Apple Academic Press 2019).

than seven ex officio members representing the concerned departments of the State Government (including those dealing with Panchayati Raj and tribal affairs), and not more than five non-official members who are experts in the three objectives of the BD Act.²¹ In the Union Territories, the NBA or its delegates perform the functions of an SBB; by Office Memoranda issued in December 2019, the NBA delegated its functions in the Union Territories to Union Territory Biodiversity Councils, which the Union Territory administrations have since constituted.²²

Under section 23 of the BD Act, as amended, the functions of an SBB are to:²³

- Advise the State Government on matters relating to the conservation of biodiversity, the sustainable use of its components and the fair and equitable sharing of benefits;
- Regulate, by granting or rejecting approvals, access to biological resources for commercial utilization by persons other than section 3(2) entities, who must give the SBB prior intimation under section 7;
- Determine the fair and equitable sharing of benefits when granting such approvals, as provided in the NBA's regulations; and
- Perform other functions necessary to carry out the provisions of the Act.

iv. Biodiversity Management Committees (BMCs)

Biodiversity Management Committees are constituted by local bodies in both rural and urban areas. Since the 2023 amendment, the composition of a BMC is prescribed by the State Government, subject to a membership of not less than seven and not more than eleven. Under the Biological Diversity Rules, 2004, a BMC consisted of a Chairperson and not more than six persons nominated by the local body, of whom not less than one-third were to be women and not less than 18% were to belong to the Scheduled Castes or Scheduled Tribes.²⁴ The NBA and SBBs must consult BMCs before taking decisions about biological resources and associated knowledge within their jurisdiction, and the BD Act requires engagement with the conservers and holders of biological resources and associated TK to determine the terms of access and benefit sharing.²⁵

²¹ The Biological Diversity Act, 2002, *supra* note 15, § 22(4), as amended by The Biological Diversity (Amendment) Act, 2023, *supra* note 17, § 20.

²² NAT'L BIODIVERSITY AUTH., *Office Memoranda for Union Territories*, <https://www.nbaindia.nic.in/acts-and-rules/om-for-uts>.

²³ The Biological Diversity Act, 2002, *supra* note 15, §§ 7, 23, as substituted and amended by The Biological Diversity (Amendment) Act, 2023, *supra* note 17, §§ 9, 21.

²⁴ The Biological Diversity Act, 2002, *supra* note 15, § 41(1B), as inserted by The Biological Diversity (Amendment) Act, 2023, *supra* note 17, § 30; The Biological Diversity Rules, 2004, r. 22(2) (India) (superseded).

²⁵ Krishnamurthy, *supra* note 2.

The main functions of BMCs are:

- Preparation of the People's Biodiversity Register (PBR) in consultation with local people. PBRs provide detailed information on local biological resources, their medicinal and other uses, and associated traditional knowledge (TK);
- Advising the NBA and SBBs on matters referred to them for clearance of regulated activities;
- Maintaining data on local vendors and practitioners who use biological resources; and
- Maintaining a register of information on access to biological resources and traditional knowledge (TK),²⁶ collection fees, benefits derived and the mode of sharing them.

B. Phases II and III: benefit sharing and benefit distribution

In the second phase of the ABS procedure, benefit sharing refers to the applicant's actual sharing of benefits on the terms agreed with the NBA or the SBB. Benefits are to be shared in relation to the regulated activity. Before approval is granted, the benefits to be shared are settled by mutually agreed terms.²⁷ It is the NBA's responsibility to ensure that the mutually agreed terms secure fair and equitable benefit sharing; under section 21(1), as substituted in 2023, those terms are settled between the applicant and the BMC concerned, represented by the NBA. Accordingly, where benefit claimers cannot be identified, the NBA may negotiate mutually agreed terms with the applicant. The BD Act defines "fair and equitable benefit sharing" as the sharing of benefits as determined by the NBA under section 21, and since the 2023 amendment SBBs also determine benefit sharing when granting approvals for activities under section 7.²⁸

VII. INTERSECTIONS OF ABS, SUSTAINABLE DEVELOPMENT AND THE LEGAL FRAMEWORK

In India, these three concepts are of great importance in promoting biodiversity conservation and in ensuring that the benefits of biological resources are shared fairly and equitably. The first is ABS, one of the objectives of the CBD, given effect by its Nagoya Protocol: a framework established under the CBD to ensure that the benefits arising from the utilization of genetic resources are shared fairly and equitably with provider countries and other stakeholders. Its importance lies in its contribution to biodiversity conservation, since it advances the goals of sustainability by ensuring that biological resources are used fairly and equitably while natural

²⁶ INT'L CTR. FOR TRADE & SUSTAINABLE DEV., 10 BRIDGES TRADE BIORES, no. 10 (May 31, 2010).

²⁷ The Biological Diversity Act, 2002, *supra* note 15, § 21(1), as substituted by The Biological Diversity (Amendment) Act, 2023, *supra* note 17, § 19.

²⁸ The Biological Diversity Act, 2002, *supra* note 15, §§ 2(g), 21(1), 23(ba), as amended by The Biological Diversity (Amendment) Act, 2023, *supra* note 17, §§ 19, 21.

habitats are protected. The second is sustainable development, an approach that seeks to balance economic growth, social inclusion and environmental protection, and to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. Its main function is to promote equity, conservation and responsible resource management, and it seeks to balance the consumption of bio-resources against a growing population. The third is the legal framework for the conservation, management and protection of bio-resources, which includes the National Biodiversity Action Plan (NBAP), the Biological Diversity Act, 2002, the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 and the Environment (Protection) Act, 1986.

VIII. CHALLENGES AND OPPORTUNITIES

The major concerns that act as hurdles to these concepts are as follows:

- Awareness and capacity building: One of the major challenges is the lack of awareness among local communities of the laws on biodiversity. Education plays an important role in shaping individuals and society as a whole, and awareness among local people, tribes and communities is therefore essential if they are to know their rights under the ABS framework.
- The second concern is the gaps in implementing ABS and the biodiversity rules and regulations on the ground in a way that yields results for local tribes. The main reasons are bureaucratic hurdles and a lack of resources for effective implementation of ABS at the grassroots level.
- Conflicts between the interests of larger sections of society and the interests and rights of local communities. TK is the knowledge of local communities, gained through the experience of their ancestors, and when these interests conflict with those of the commercial sector, the implementation of ABS suffers.

To overcome these challenges, the following steps are suggested:

- Community engagement: strengthening community participation in decision-making processes, which in turn enhances the effectiveness of ABS on the ground.
- The adoption of innovative financing mechanisms that generate financial incentives linked to biodiversity conservation and that support the Sustainable Development Goals.

- The adoption of collaborative approaches among the government, non-governmental organizations and local communities, to enhance capacity building and resource management on the ground.

The intersections of ABS, sustainable development and the legal framework present both drawbacks and opportunities, and the adoption of these measures at the grassroots level can transform the implementation of ABS and the achievement of the Sustainable Development Goals, leading to the conservation, protection and management of bio-resources. Local communities and their traditional knowledge are the key factor and can play a crucial role in achieving these aims. The government should frame rules and regulations with the interests of these local communities in mind, so that economic benefit is secured alongside the conservation of the environment.
