

Protecting and Addressing Misappropriation of Traditional Knowledge: A Study of the Bangladesh Biological Diversity Act in Relation to the CBD Compliance

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Abstract: Traditional knowledge (TK) is a crucial component of the cultural and ecological legacy of indigenous and local populations. In Bangladesh, the protection of TK is particularly significant given the country's enriched biodiversity and the deeply ingrained cultural practices of its diverse communities. The Bangladesh Constitution mandates the preservation and promotion of cultural traditions and heritage of all communities. Moreover, Bangladesh is committed to the goals set forth by the Convention on Biological Diversity (CBD). To align with these goals, The Bangladesh Biological Diversity Act (BBA) of 2017 was enacted in order to support sustainable usage, ensure equitable benefit-sharing from biological resources and related knowledge, and conserve biodiversity. This paper explores the legal obligations surrounding the protection and misappropriation of TK in Bangladesh, with a special focus on the BBA. The BBA establishes a framework for the preservation of biological diversity and equitable sharing of benefits derived from biological resources. This paper critically assesses the effectiveness of the BBA in safeguarding TK from misappropriation, examining its provisions related to prior informed consent (PIC), access and benefit-sharing (ABS), and analyzing the challenges faced in its implementation.

Keywords: Traditional Knowledge, Misappropriation, CBD, Prior Informed Consent, Access and Benefit Sharing

1. Introduction

Traditional Knowledge (TK) is not necessarily static or ancient source of knowledge.¹ The development of TK is a continuous process which unfolds and produces new information owing to the advancement or adjustment to changing

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¹ Daniel J. Gervais, 'Traditional Knowledge & Intellectual Property: A TRIPs-Compatible Approach', [2005] Mich. State L. Rev. 137

circumstances.² The local community is constantly updating their TK-based ideas in response to its evolving needs and experiences. Therefore, TK originating from local knowledge system in fact complements the modern knowledge system.³ Although TK is passed down orally from elder to younger generations and is not systematically recorded, its significance is so undeniable that it is now considered as a distinguished area of knowledge worldwide.⁴ But unfortunately, since TK is owned by a local or indigenous community rather than an individual or organization, third-party entrepreneurs or businesses are prone to exploit it for economic gain without providing any profit to the original owners. In response to this exploitation, a significant global trend of TK documentation has been emerging around the world.

Bangladesh is highly enriched with TK, but in lack of proper documentation they are open to commercial use and under threat of extinction. To what extent, Bangladesh Biological Diversity Act (BBA) addresses this commercial exploitation of TK and in line with CBD, how sufficient is the endeavor to preserve and document TK under the BBA is the primary focus of this paper.

2. Defining and Characterizing Traditional Knowledge

The term “Traditional knowledge” (TK) indicates a wide range of knowledge systems, covering a multitude of sectors, that have been acquired and preserved by traditional societies non-systematically. Encompassing a variety of aspects and diverse manifestation of knowledge, they make it challenging to come to a consensus on a legal and scientific definition. For that reason, despite being widely recognized with its instinct value and undeniable significance, TK lacks any specific and universally approved definition.⁵ In a broader sense, TK can be defined as the combined knowledge of an indigenous community which has been passed down through generations living in a certain locality. This definition is considerably inclusive covering all types of knowledge, including technology, skills, community activities, and beliefs to guarantee steady livelihoods within their locality.⁶ Genre of TK might include agricultural knowledge, ecological knowledge, medical information including associated medications and treatments; scientific and technical knowledge pertaining to bio-diversity; folklore expressed through music, dance, lyrics, handicrafts, designs, stories, and artwork; linguistic components like names,

² Rosa Giannina Alvarez Nunez, ‘Intellectual Property and Protection of Traditional Knowledge, Genetic Resources and Folklore: The Peruvian experience’, (2008) 12 Max Planck Yearbook of United Nations Law

³ Kamrul Hossain & Rosa Maria Ballardini, ‘Protecting Indigenous Traditional Knowledge through a Holistic Principle-Based Approach’, (2021) 39 Nordic J. Hum Rts 51

⁴ Ibid

⁵ Peter Drahos, “A Networked Responsive Regulatory Approach to Protecting Traditional Knowledge”, in Daniel J. Gervais (ed) *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPS-Plus Era* (2007 at 396)

⁶ Mahatab Uddin, ‘Traditional Knowledge, International Environmental Law, and Bangladesh’ (2022-2023) 48 Yale J Int'l L Online 1 <https://ssrn.com/abstract=4534430> accessed 14 September 2024

symbols, and movable cultural attributes.⁷ TK involves knowledge owned by indigenous people, in one or several communities and in one or different patterns, including, but is not limited to folk culture, art, dance and music, knowledge of biodiversity and preservation of plant varieties,⁸ rather it is applied in several facets of daily life such as agriculture, medicine, literature, and home decor. Overall, TK is a broad category of intellectual work derived from the indigenous and local knowledge, practices and innovations around the world. It offers enormous benefits producing values in the fields of culture, society, ecology, biology, agriculture, and industry.

TK lacks specific definition because there is no legally binding treaty encompassing particularly the protection and conservation of TK. Considering this vacuum in the field of TK, the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) (hereinafter WIPO Intergovernmental Committee) was founded in 2000 with the goal of finalizing an agreement on single or various international legal instruments that would guarantee the balanced and efficacious protection of TK along with genetic resources and traditional cultural expressions.⁹ While its' undertaking, the WIPO Intergovernmental Committee refers TK as the content or substance of knowledge that results from intellectual activity and insight in a traditional context. The knowledge is derived from the traditional lifestyle of a particular community, is contained in codified knowledge systems that have been passed down through the generations and largely encompasses different kinds of know-how, skills, innovations, practices, and learning. It is not confined to any particular technical sector rather includes information related to genetic resources, agriculture, the environment, and medicine.

However, in the absence of any universal accepted terminology, there are some particular characteristics attributed to TK that also used in the WIPO papers are: TK is based on the concepts, innovation, beliefs and practice evolved and applied by indigenous and local groups, it is orally transmitted from generation to generation within the community, It is generally shared by the community and is continuously improved and modified to meet the ever-evolving needs of its users.¹⁰ TK is the knowledge that members of a certain community have accumulated over time by their experiences and adjustments to the local environment and culture, and which is always evolving in nature. This knowledge is used to uphold the community and its culture along with conserving the genetic resources necessary for communal

⁷ Rosa Giannina Alvarez Nunez, n (4)

⁸ Michael C. Oghzwy, 'Protection of Indigenous or Traditional Knowledge under Intellectual Property Laws', (2012) 12:1 ICLR

⁹ WIPO Intergovernmental Committee, available at <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-rn2023-5-2-en-the-wipo-intergovernmental-committee-on-intellectual-property-and-genetic-resources-traditional-knowledge-and-folklore.pdf>

¹⁰ Ibid

existence. TK is a shared knowledge of a community which is bestowed upon by them as a birthright.¹¹

3. Protection of Traditional Knowledge

It is now widely documented that TK has a significant impact on the world economy. The majority of traditional communities rely on this knowledge for their dietary and medical needs.¹² However, TK is not only beneficial to people who rely on it for daily living but also to modern business and agriculture.¹³ The preservation and sustained growth of the environment depend on the protection of TK. Concerns over TK protection have also been raised by the movement of traditional communities from their natural habitat and their growing integration with modern civilization, which may cause TK to go extinct and negatively impact biodiversity.¹⁴

One of the significant challenges facing the preservation of TK today is the apparent lack of enthusiasm among younger generations to learn and engage with ancestral customs and cultural practices. This generational disconnect raises serious concerns, as much of this valuable knowledge is held by elders within communities, and there is a real risk that TK may disappear entirely with the death of those elders.¹⁵ To prevent this cultural erosion, it is crucial to empower local communities to utilize their traditional knowledge in ways that contribute to their economic development and social progress.¹⁶ As a result, the global conversation around safeguarding and preserving TK has intensified, particularly due to growing advocacy from developing nations. These countries have expressed a range of concerns and highlighted the urgent need for effective mechanisms to protect TK. There is now increasing support for establishing comprehensive frameworks whether by adapting existing intellectual property rights (IPR) systems, creating new international standards, or introducing specialized legal protections like *sui generis* models that recognizes community-based intellectual property or traditional community rights.¹⁷

3.1 Protection of Traditional Knowledge under Intellectual Property Rights (IPRs) Regime

¹¹ María del Pilar Pardo Fajardo, "Protection of Traditional Knowledge, Access and Benefit Sharing, and Intellectual Property Rights: The Colombian Experience" in Sophia Twarog and Promila Kapoor, (eds) *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International* (2004 UN Conference on Trade and Development, United Nations: New York and Geneva 223)

¹² Surinder Kaur Verma, 'Protecting Traditional Knowledge: Is *Sui Genris* System An Answer', (2005) 7(6) *The Journal of World Intellectual Property* 765

¹³ *Intellectual Property*, (Earthscan, London 2002)

¹⁴ Surinder n (14)

¹⁵ *Intellectual Property Needs and Expectations of Traditional Knowledge Holders*, WIPO Report on Fact-finding Missions on Intellectual Property and Traditional Knowledge (1998-1999), Geneva, Switzerland, April 2001, pp. 214-215.

¹⁶ Daniel Gervais, 'TRIPs, Doha and Traditional Knowledge', (2003) 6 *The Journal of World Intellectual Property* 403

¹⁷ Thomas Cottier, 'The Protection of Genetic Resources and Traditional Knowledge: Towards More Specific Rights and Obligations in World Trade Law', (1998) 4 *JIEL* 561

Intellectual Property (IP) has a significant impact on managing the lead-time economic advantage and business strategies.¹⁸ TK contributes to this significance in several aspects and therefore, the extension of IPRs to TK protection is one of the key elements to maintain this value chain.¹⁹ TK may be protected as IPRs since it is dynamic and a part of nature. TK largely deals with the intellectual and intangible cultural heritage, customs and knowledge systems of traditional communities, including indigenous and local communities.²⁰ There is a general consensus that IP serves as a means of acknowledging and respecting the contributions of human creators in addition to granting property rights. In this sense, the role of IP is crucial in protecting the dignity of TK holders by recognizing their property rights in relation to such knowledge, which grants them some degree of control over how the knowledge is used by others.²¹

The protection of TK has emerged as a critical concern on the global stage, primarily due to its frequent misappropriation through bio-piracy and other unethical practices²² that exploit indigenous knowledge without consent or benefit-sharing. These challenges have raised serious ethical and legal questions, prompting the development of various mechanisms aimed at safeguarding TK. In response, several international bodies involved in these efforts including the Convention on Biological Diversity (CBD), the WTO's TRIPS Agreement, and, most notably, the World Intellectual Property Organization (WIPO). These organizations have been instrumental in shaping policies and frameworks that support the recognition, protection, and equitable use of TK.

The WIPO's active involvement with respect to TK began back in 1998.²³ Between 1998 and 1999, it carried out nine fact-finding missions around the world to better understand how intellectual property could help protect TK, while keeping in mind what TK holders actually need and expect.²⁴ Later, during its 26th session, the WIPO General Assembly set up the WIPO Intergovernmental Committee (IGC). Since then, the IGC has been working to get a clearer picture of what traditional and local communities need, whether current mechanisms of protection are enough, and how those mechanisms could be improved. It has developed a substantial collection of resources, such as sample contract clauses for genetic resources, a toolkit aimed at

¹⁸ Ngo Van Lam & Thitapha Wattanapruttipaisan, 'Intellectual Property Creation as Invention Patents for Development and Competitiveness in ASEAN', (2005) 8 *The Journal of World Intellectual Property* 625

¹⁹ *Ibid*

²⁰ WIPO, *Glossary of Key Terms Related to Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions*, Dec7, 2012 (WIPO/GRTKF/IC/20/INF/13)

²¹ World Intellectual Property Organization Report, *Intellectual Property Needs and Expectations of Traditional Knowledge Holders, 1998-1999 Report on Fact-finding Missions on Intellectual Property Holders* at 66, 69 (2001)

²² Dr. Md. Towhidul Islam, Md. Ahsan Habib, 'Intellectual Property Perspectives of Women's Traditional Knowledge in Bangladesh' (2016) 27:1 *Dhaka University Journal of Law* 27

²³ Surinder n (14)

²⁴ WIPO Report n (17)

supporting the documentation and safeguarding TK and exploratory work on creating a possible *sui generis* system of protection for TK.²⁵

TK has taken place on the agenda of the WTO, especially under the TRIPS Agreement. While TRIPS mostly focuses on conventional intellectual property rights, it does not directly address how TK should be protected. The matter of TK protection is dealt within the ambit of Article 27(3)(b), which says countries must protect plant varieties either through patents or by a special system of *sui generis* protection measure or a combination of both. While developing the *sui generis* system for the protection of plant varieties, countries might choose to include protection for TK, since the knowledge around plant varieties often passed down through generations is closely tied to traditional practices and can replicate naturally. Article 39 of the TRIPS Agreement could also be relevant provision with regard to the TK protection. It covers protection of undisclosed information and if the TK is kept as an undisclosed and undocumented knowledge, the protection of TK as undisclosed information is guaranteed by this provision.

TK, by its very nature, is interdisciplinary and deeply embedded in the cultural and social fabric of indigenous and local communities. It encompasses a broad range of practices, innovations, and understandings related to biodiversity, agriculture, medicine, and spirituality. As such, TK holds immense value not only for the communities that preserve it but also for the wider global population, especially in areas like environmental sustainability and pharmaceutical development. The growing recognition of its importance has led to a worldwide movement advocating for the preservation, promotion, and legal protection of TK. Additionally, several initiatives by intergovernmental organizations concerned with intellectual property, environmental issues, and human rights aim to grant indigenous and local communities legal authority over the use of their traditional knowledge, particularly when it holds significant cultural, spiritual, or ecological relevance.²⁶

3.2 Protection under Convention on Biological Diversity (CBD)

The CBD is one of the most leading multilateral environmental agreements with regard to the conservation and sustainable use of biodiversity on earth. It acknowledges the indigenous and local peoples' close and long-standing reliance on biological resources, and considers the preservation of bio-related TK to be one of the contracting parties' obligations under the "In-situ Conservation" of its article 8. With regard to the obligations, article 8(j) focuses on three aspects. First, each state party is called for to preserve TK within its territories. Second, the CBD ensures the utmost respect of the rights of TK holders and strictly prohibits any kind of utilization of TK without their prior approval. Third, any contracting party to the CBD is encouraged to develop a mechanism that guarantees the TK holders benefit from the utilization of their TK. The first aspect stems from a conservation

²⁵WIPO Intergovernmental Committee n (11)

²⁶Surinder n (14)

perspective whereas the latter two compel parties to set up appropriate legal framework that will allow for the fair management of TK application and benefit-sharing. Along with article 8(j), the CBD contains other provisions pertaining to the TK protection. Article 10(c), for instance, addresses the sustainable use of TK on biodiversity and gives mandate to the states to safeguard and promote the traditional use of biological resources in line with cultural practices that are compatible with conservation or sustainable use standards. Article 15(5) of the CBD stresses that access to genetic resources also requires prior informed consent. According to Article 18(4), contracting parties are required to promote and create cooperative approaches for the advancement and application of technologies, including traditional and indigenous technology. To safeguard TK from unauthorized use and exploitation, the CBD prohibits any form of utilization without obtaining “prior approval.” The CBD clearly articulates that access to biological resources must be contingent upon the prior informed consent of the resource provider. Complementing this, paragraph 31 of the Bonn Guidelines emphasizes that such consent should be obtained from local communities in a manner that respects their customary practices, aligns with national access frameworks, and complies with relevant domestic legislation.²⁷

Additionally, the Nagoya Protocol to CBD also requires the states parties that host or use TK to safeguard the rights of TK holders, as well as to ensure benefit-sharing and prior informed consent. The protocol also advocates for the prior informed consent from the party supplying the resources before access to genetic resources. The supplying party may be the country where such resources originated or a party that has obtained the genetic resources in accordance with the CBD whichever is the case.²⁸ In this regard, it requires states parties to establish precise legal provisions that define and determine prior informed consent.²⁹ Worth mentioning here, the scope of the Protocol is undisputedly applicable to TK associated with genetic resources and also to the benefits arising from any kind of use of such resources.³⁰

3.3 *Sui Generis* Protection of Traditional Knowledge

Sui generis is a Latin term meaning “of its own kind”. It is a system designed to solve a certain problem through addressing the needs and concerns of that particular problem. Currently, countries are implementing a *sui generis* legal protection for subject matter relevant to TK resources. The initiatives have been taken in two lines at the national level. In the first place, several countries through an official decree have acknowledged the rights of the traditional communities on the resources they have used such as knowledge, technologies, and practices. Secondly, the countries have started to act upon the commitments they have made as parties to the CPD.

²⁷ Secretariat of the Convention on Biological Diversity [CBD], Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization, delivered to the CBD, at 10, U.N. Doc. UNEP/CBD/COP/6/20 (2002)

²⁸ Nagoya Protocol art 6(1)

²⁹ Nagoya Protocol art 6(3)

³⁰ Nagoya Protocol art 3

These initiatives take two fundamental modes. The first is that they require traditional communities to offer prior informed consent before exploring biological resources. The second effort recognizes the importance of developing a structured institutional framework that may assure fair and equitable benefit sharing with traditional communities if the resources are utilized commercially.³¹

3.4 Protection against Misappropriation of Traditional Knowledge

Generally, misappropriation entails the improper or dishonest use of property.³² As of right now, no international agreement specifically mandates to prevent the misappropriation of TK within the framework of intellectual property.³³ Nonetheless, the draft of the WIPO Intergovernmental Committee advocates safeguards against misappropriation. Article 1 of the draft³⁴ states that any acquisition, appropriation, or use of TK by unfair or illegal means is considered misappropriation. Misappropriation may also be constituted by commercial gain from the acquisition, appropriation, or use of TK when the user of TK is aware or negligent enough to be unaware that the knowledge was obtained or appropriated unfairly, as well as by other commercial activities that go against ethical standards and unfairly profit from TK.

Many countries rich in TK and folklore believe that indigenous and local communities have been excluded from the benefits derived from their own knowledge, innovations, and practices. These have often been used primarily by large corporations without consent, recognition, or compensation to the local communities. As a result, there is a clear imbalance between the profits made by these companies that exploit TK commercially and the lack of benefits for the original knowledge holders. The international community has a duty to empower these communities by granting them control over their knowledge and ensuring it is not commercially exploited.

The WIPO Intergovernmental Committee categorizes several forms of misappropriation which can be summarized into following heads;

a) Misappropriation by Unauthorized Use of Traditional Knowledge

³¹ Biswajit Dhar, R.V. Anuradha, 'Access, Benefit-Sharing and Intellectual Property Rights', (2004) 7 *The Journal of World Intellectual Property* 597

³² Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore Glossary of Key Terms Related to Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions WIPO/GRTKF/IC/22/INF/8 (27 April 2012) at 27

³³ *Ibid* at 102

³⁴ WIPO-Intergovernmental Committee on Intellectual Property, Traditional Knowledge, Genetic Resources and Folklore, Doc.WIPO/GRTKF/IC/8/5 of 8 April 2005

Unauthorized use of TK amounts to theft and theft of TK amounts to misappropriation.³⁵ A well-known example of unauthorized use of TK is the *Turmeric Patent case*. Turmeric powder has been long utilized in the Indian subcontinent and Southeast Asia for its healing properties, culinary uses, cosmetic applications, and even as a natural dye. Despite this, in 1995, the University of Mississippi Medical Center was awarded a patent in the United States for the use of turmeric powder both taken orally and applied externally for treating wounds, including skin ulcers. The application, however, failed to acknowledge the established traditional uses of turmeric as a traditional medicine of healing wounds which constituted unauthorized appropriation of TK. In response, India's Council of Scientific and Industrial Research (CSIR) contested the patent, presenting documented evidence of turmeric's traditional medicinal use. As a result, the U.S. Patent Office revoked the patent in 1997, recognizing the prior existence and widespread knowledge of its healing properties.³⁶

b) Misappropriation by Commercial Exploitation of Traditional Knowledge

Commercial use of knowledge obtained through unfair means is another form of misappropriation. The Paris Convention for the Protection of Industrial Property creates a scope for the misappropriation by unfair competition to be part of the intellectual property system. Article 10bis of the convention requires member states to "assure to nationals... effective protection against unfair competition".³⁷ Misappropriation is defined as the improper use of another person's "property" from a common law perspective.³⁸ For instance, a new medication with appetite-suppressing properties was patented by the South African Council for Scientific and Industrial Research (CSIR), which receives funding from the government. The *Hoodia cactus* of the Kalahari Desert is the source of the medication, known as P57. The *Hoodia* has been used by nomadic San cultures for thousands of years to withstand extended durations of dehydration and hunger when on desert hunting expeditions. A group of hunters could avoid consuming procured game they had caught before returning home to their family for several days with a length of stem cut from the 6-foot-tall cactus. The appetite-suppressing component of *Hoodia* is currently thought to be the next big thing in the Western weight-loss industry. Phytopharm, a UK pharmaceutical company, was given the development rights of P57 by the CSIR. Soon after, the American company that created Viagra purchased

³⁵ The World Summit of Indigenous People at Kimberley, (Indigenous People's Council on Bio colonialism, Kimberley Declaration, 2002, Para 9)

³⁶ Jayaraman, K. 'US Patent Office Withdraws Patent on Indian Herb' (1997) 6 Nature 389

³⁷ Nopera Dennis-McCarthy, 'Indigenous Customary Law and International Intellectual Property: Ascertain an Effective Indigenous Definition for Misappropriation of Traditional Knowledge', (2020) 51 VUWLR

³⁸ WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore Glossary of Key Terms Related to Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions WIPO/GRTKF/IC/22/INF/8 (27 April 2012) at 27-28

the licensing rights from Phytopharm for \$2 million, and the medication immediately became well-known throughout the world. The San community did not realize the situation's political and economic ramifications until later. The CSIR misappropriated the expertise for commercial gain and granted a patent to a medication derived from the *Hoodia cactus* case, beyond the knowledge of San community.³⁹

c) Misappropriation by Acquisition of Traditional Knowledge by Unfair Means

According to WIPO, prior informed consent (PIC) from the indigenous group is a prerequisite for access to TK. Acquisition of TK or exercising control over it violates legal measures that mandate PIC as a requirement of access to the knowledge. A significant example of this issue arose during the *Maya ICBG biopiracy* controversy.⁴⁰ The controversy involved Brent Berlin, an ethnobiologist who was charged with unethical bioprospecting practices. He began conducting research with ICBG to determine whether any of the plants used by the indigenous populations could be used to create medical items. Despite taking several steps to engage ethically with the communities involved, the project faced intense scrutiny for the way it handled the process of obtaining PIC. Critics argued that the methods used to obtain consent were insufficient and exploitative, leading to a backlash from the indigenous communities themselves. The project was ultimately shut down in 2001, following strong objections from the indigenous people, who labeled the initiative as both unfair and unethical. This case highlights the importance of respecting the rights of indigenous communities and underscores the need for fair processes when accessing TK for research or commercial purposes.

Thus, according to the WIPO Intergovernmental Committee draft, misappropriation of TK encompasses the unauthorized use, commercial exploitation, or acquisition of such knowledge through unethical or dishonest means. This definition emphasizes the need to protect TK from being exploited without the knowledge or approval of the communities that have developed and preserved it over generations. The unauthorized use and control of TK by external entities particularly when it is exploited or replaced with modern technological advancements without the involvement, consultation, or consent of the original knowledge holders, and without offering any form of compensation, constitute an act of misappropriation. In response to this concern, the CBD specifically under article 8(j) highlights the critical importance of obtaining prior informed consent (PIC) from indigenous and local communities before accessing their knowledge. Additionally, it promotes fair and equitable access and benefit-sharing (ABS) mechanisms to ensure that TK holders are properly recognized and rewarded for their contributions. These measures aim to

³⁹ Amusan L. Politics of Biopiracy: An Adventure into Hoodia/Xhoba Patenting in Southern Africa' (2016) 23;14(1) Afr J Tradit Complement Altern Med 103

⁴⁰ Berlin, B., and E. A. Berlin, 'Community Autonomy and the Maya-ICBG Project in Chiapas, Mexico: How a Bioprospecting Project that Should Have Succeeded Failed' (2004) 63 Human Organization 472

safeguard the cultural and intellectual heritage of communities and prevent unjust exploitation of their traditional resources and innovations.

4. Traditional Knowledge and Bangladesh

Bangladesh is abundant with large biodiversity levels, home to at least forty-five distinct ethnic and indigenous groups, each with their own customs, traditions, and lifestyle. It also possesses a thorough understanding of cultural traditions such as music, dances, handicrafts, ceremonies, and stories. Indigenous people rely on their traditional knowledge in several aspects of life like healthcare, farming and culture etc.

Plant medicine is less expensive than modern pharmaceuticals. The World Health Organization (WHO) has therefore emphasized the importance of traditional medicine in providing medical treatment to the common people in the developing countries. In Bangladesh, *Neem Tree* is used by the farmers as a pesticide and as medical plant for almost all diseases, the root and bark of *beranda* tree are used as anti biotic for many diseases. Around five hundred medicinal plants have been utilized for traditional and alternative medicinal practices such as Unani and Ayurvedic systems, and a large number of rural populations rely are on traditional medications for ailments like fever, cold, cough, diarrhea and headache.⁴¹ For example, *Kalo bangra* is used for not spreading virus in hairless head and *Durba grass* (*Cynodon Dactylon*) is popular as a remedy to blood congealing.⁴²

The tribal people in Chittagong Hill Tracts in Bangladesh practice “Jhum” in a particular area for a year, and then let the land fallow to enable it to regenerate. They cultivate a wide variety of crops using the “Jhum” process including rice, turmeric, cucumber, chili and ginger. Farmers are able to fulfill all of their daily needs in this manner, but many of the crops grown in the jhum system, such as grains, medicinal plants, fragrant plants, spices or condiments, and different legumes, have the potential to be valuable commercial products.⁴³ Teak is an important timber species with high value in Bangladesh. Teak sapwood is insect and borer-resistant. The bark contains a wide range of complex aromatic extractives that fight against fungal and microbiological attack.⁴⁴

Apart from indigenous people, rural women have also significantly contributed in preserving indigenous diversities varieties. For example, women of Bangladesh possess special TK such as in the processing and preserving of culinary items. Turmeric is used in Bangladesh as a culinary ingredient for culinary or other causes like wedding ceremonies etc. besides, it has huge medicinal benefit and the process

⁴¹ Mohammad Towhidul Islam and Moniruz Zaman, ‘Protection of Traditional Knowledge: Finding an Appropriate Legal Framework for Bangladesh’, (2020) 31 Dhaka University Law Journal

⁴² Ibid

⁴³ Razdiur Rahman, ‘Protection of Traditional Knowledge and Traditional Cultural Expressions in Bangladesh’, (2015) 20 Journal of Intellectual Property Rights 164

⁴⁴ Ibid

of preserving turmeric by Bangladeshi women is a unique knowledge.⁴⁵ Another common culinary ingredient in Bangladesh for making a variety of dishes is Desi Ghee, also known as Gaua Ghee in Bengali. The process of making ghee from cow's milk is an exclusive knowledge of Bangladeshi ladies.⁴⁶ Due to its distinct flavor, taste, and components, "Desi ghee" is produced for non-commercial use in the rural unorganized sector; however, incentives for marketing and branding of the product could provide rural women with distinctive traditional expertise with a solid source of income. For ages, women have taken special care of aromatic rice varieties like Kaligira and Kataribhog, which are used in Bangladesh to make delectable traditional dishes like Polau and Biriani.⁴⁷ Since there is a specialized market for these aromatic rice varieties in the regions of the world where the Bangladeshi diaspora resides, women's traditional knowledge in conserving these rice varieties should be safeguarded through benefit-sharing when they are used commercially.⁴⁸

⁴⁵ Dr. Md. Towhidul Islam and Md. Ahsan Habib n (24)

⁴⁶ S K Soam, 'Analysis of Prospective Geographical indications of India', (2006) 8(5) *The Journal of World Intellectual Property* 679

⁴⁷ T Das and M A Baqui, "Aromatic Rices of Bangladesh" in R K Singh, US Singh and GS Khus (eds.) *Aromatic Rices* (2000 Oxford and IBH Publishing, India 184)

⁴⁸ Dr. Md. Towhidul Islam and Md. Ahsan Habib n (24)

4.1 Impact of Misappropriation of Traditional Knowledge in the Economy and Culture of Bangladesh

Bangladesh is vulnerable to misappropriation of TK. The majority of TK is undocumented here and readily available for unauthorized third parties to copy, sell, or use. Undocumented TK is always prone to misappropriation, in the absence of documentation a large number of TK in Bangladesh is being misappropriated and is in threat of misappropriation.

Bangladesh has a wide variety of TK but majority of them is not documented. They are unrecognized and there is a threat that a large proportion of TK may be lost.⁴⁹ For instances, in Bangladesh and its hill districts, traditional remedies are an important part of healthcare. The traditional medical system is dying out because of the disappearance of forest cover beyond the knowledge of the traditional practitioners from which they often procure the herbs used in the treatment. The influx of western medicines into rural Bangladesh has changed the general notion of people regarding health management and medical care and the traditional herbal practitioners, i.e “Kabiraz” are now regard as outdated. Similarly, the traditional crops are destroying due to the modern varieties of crops. Aromatic rice varieties and deshi ghee are also quite demanding food item among all Bangladeshi living around the world. There remains a concern that, the name desi ghee (or Gaua ghee) may be generic unless legally protected.⁵⁰

TK is gradually weakening in Bangladesh and in some situations, completely disappearing. The indigenous groups that possess TK in Bangladesh are poverty-stricken and they live on the trade and commerce of local clothing, pottery, household items, ornaments, handicrafts, traditional delicacies, and herbal remedies both domestically and internationally. In addition to that, tribal populations of Bangladesh largely rely on agricultural and biological resources for their subsistence.⁵¹ Therefore, disappearance of TK has severe impact on people’s livelihood, health and income. The relatively small amount of resources needed for TK research will have a significant impact on improving the lives of those living in poverty.

4.2 Legal Obligation of Bangladesh to Protect and Address Misappropriation of Traditional Knowledge

The Constitution of Bangladesh mandates that the government must actively implement strategies aimed at preserving the cultural heritage and longstanding traditions of its people.⁵² In particular, it emphasizes the importance of safeguarding

⁴⁹ Razidur Rahaman n (45)

⁵⁰ S K Soam n (48)

⁵¹ Aliyu Akilu Barau, Safiul Islam Afrad, Sadekur Rahman & Abiar Rahman, ‘Indigenous Peoples’ Livelihood Practices in South- eastern Bangladesh and the Question of Sustainability’, (2019) 27:2 Sustainable Development

⁵² The Constitution of Bangladesh, art 23

and nurturing the distinct cultural identities and practices of indigenous groups, tribal communities, ethnic minorities, and other underrepresented social segments.⁵³ Additionally, given Bangladesh's rich endowment of biological resources and the traditional knowledge (TK) closely linked to these resources, the country holds a significant responsibility on both national and international levels. As a signatory to the Convention on Biological Diversity (CBD), Bangladesh has an obligation to align its national policies with global biodiversity goals. In this context, the government introduced the Bangladesh Biological Diversity Act (BBA) in 2017. This legislation mirrors the primary goals of the CBD, aiming to ensure the protection and preservation of biological diversity, promote the sustainable use of its components, and guarantee that the benefits derived from biological resources and traditional knowledge are shared fairly and equitably.

5. Bangladesh Biological Diversity Act (BBA) in Responding to the Protection and Misappropriation of Traditional Knowledge

Aligned with the objectives of the Convention on Biological Diversity (CBD), the Bangladesh Biological Diversity Act (BBA) has been enacted with two-fold aims: firstly, to promote the conservation and protection of the country's enriched biodiversity, and secondly, to ensure that the benefits arising out of the usage of genetic resources and related biotechnological advancements are accessed fairly and distributed equitably among all stakeholders. The Act places particular emphasis on the rights and contributions of local and indigenous communities, whose knowledge, practice and belief has played a significant role in the sustainable use and preservation of biodiversity over generations. It expressly calls upon the National Committee on Biodiversity (NCB) to acknowledge and respect the value of this indigenous knowledge.⁵⁴ Furthermore, the NCB is expected to provide the government with guidance and recommendations on how to effectively safeguard and preserve such community-based knowledge systems. In addressing the issue of misappropriation or unauthorized use of traditional knowledge, the BBA highlights the importance of developing robust frameworks centered on documentation, securing Prior Informed Consent (PIC) from knowledge holders, and implementing Access and Benefit Sharing (ABS) mechanisms. These approaches are designed to protect the rights of local communities while also promoting responsible and ethical use of biodiversity-related resources.

5.1 Documentation of Traditional Knowledge under BBA

One of the most effective ways to safeguard TK is through systematic documentation, which helps establish the authenticity and historical presence of such knowledge. For example, in the aforesaid *Turmeric case*, although it was widely acknowledged across India that turmeric had long been used in households for its healing properties especially in treating wounds both orally and topically, it became

⁵³ Ibid art 23 (a)

⁵⁴ Bangladesh Biological Diversity Act (2017) sec 10 (h)

challenging to provide written evidence as required by law. The lack of documented sources complicated efforts to prevent the patenting of this Indian traditional remedy by the U.S., underlining the necessity of formally recording TK to protect it from being misappropriated under intellectual property laws. On the other hand, in a case from 1986, a U.S. scientist was granted a patent (U.S. Plant Patent No. 5751) for a plant known as ayahuasca, following research conducted in the Ecuadorian Amazon. However, this decision sparked controversy, as ayahuasca—scientifically known as *Banisteriopsis caapi*—is a plant of profound cultural and spiritual significance to many Indigenous communities across the Amazon, particularly the Quichua people. In their native language, "ayahuasca" translates to "vine of the spirits," reflecting its deep-rooted role in traditional ceremonies and healing practices. Far from being a novel discovery, ayahuasca has been used for generations in ritualistic and medicinal contexts. The U.S. Patent and Trademark Office (USPTO) ultimately revoked the patent, but only after Indigenous organizations from the Amazon Basin submitted evidence proving that the plant was neither new nor distinctive; a necessary legal criterion for patent eligibility. This case underscores a critical issue that if these organizations had been unable to provide documented proof countering the patent claim, the revocation likely would not have occurred. It illustrates the vulnerability of TK and resources when formal documentation is lacking, and reinforces the urgent need for protective legal frameworks that recognize and respect TK.

In the context of modern era of globalization, undocumented TK is at significant risk of disappearing. The BBA advocates for the creation and maintenance of a National Biodiversity Register. This responsibility is assigned to the Department of Environment, in coordination with the register compiled and preserved by the District Committee.⁵⁵ However, while the BBA does not explicitly mention TK in its provisions regarding the register, it can be reasonably interpreted that such knowledge, especially as it relates to biodiversity, should be an integral part of the documentation process. Including TK in these registers is essential to safeguard the rich cultural and ecological heritage embedded in local communities, ensuring its protection and transmission to future generations.

5.2 Prior Informed Consent (PIC) under BBA

The BBA recognizes and safeguards the rights of TK holders by mandating that their prior approval or informed consent be obtained before any third party can access the relevant knowledge. Specifically, the Act requires that non-citizens, non-resident citizens, and organizations not incorporated in Bangladesh must first secure the consent of the NCB before accessing any biological resources, including TK, for research or commercial purposes.⁵⁶ Additionally, individuals or institutions based in Bangladesh are prohibited from transferring any research findings related to biodiversity or biological resources to foreign entities without obtaining prior

⁵⁵ Ibid sec 10(b)

⁵⁶ Bangladesh Biological Diversity Act (2017) sec 4

approval from the NCB.⁵⁷ This legal safeguard aligns with Article 15.5 of the CBD, which obliges member states to ensure that access to biological resources is granted only after securing the prior informed consent of the rightful providers.

5.3 Access and Benefit Sharing (ABS) Mechanism by Determining Ownership under BBA

The CBD has established a clear requirement for the use of TK in compliance with ABS mechanism. This directive places an obligation on all member states to actively prevent the unauthorized use or exploitation of TK. Each nation that has ratified the CBD is expected to develop and implement mechanisms or legal frameworks that guarantee the fair and just distribution of benefits to the original holders of TK when their knowledge is accessed and utilized. The process of benefit sharing comes into effect once PIC has been granted allowing external parties whether from other communities, countries, or organizations to use biological resources and their associated TK. At the heart of benefit sharing lies the principle of fairness and equity, ensuring that the communities providing these resources are not left out of the benefits derived from their use.⁵⁸

In line with this principle laid down in CBD, the NCB is empowered to adopt different models of ownership over biodiversity and genetic resources. These ownership models are tailored to ensure that benefit sharing is both fair and effective. The NCB may designate either exclusive ownership: if a particular individual or group can be clearly identified as the rightful holder or shared ownership: which typically applies to entire communities that possess or maintain the biodiversity or TK in question.

5.4 Prior Approval before exercising any Intellectual Property Rights (IPRs) derived from Traditional Knowledge under BBA

The BBA stipulates that individuals or entities seeking to obtain a patent or any other form of IPRs for an invention that is derived from or based on biological resources originating in Bangladesh must first secure prior approval from the NCB.⁵⁹ This requirement applies universally to all applicants, regardless of their nationality or citizenship status meaning both domestic and foreign individuals or organizations are equally subject to this condition.

The inclusion of this IPRs provision in the BBA appears to be a strategic move, likely designed to align with and benefit from the flexibility afforded to intellectual property regimes under Article 15(5) of the CBD. By enforcing this approval process, Bangladesh acknowledges the use of its local biological resources for intellectual property regime and at the same time, the country maintains control over

⁵⁷ Ibid sec 4

⁵⁸ David. J. Faye, 'Bioprospecting, Genetic Patenting and Indigenous Populations', (2004) 7 Journal of World Intellectual Property 401

⁵⁹ Bangladesh Biological Diversity Act (2017) sec 6

those resources and ensures that any such use must be in accordance with international principles of prior approval, fair access and benefit sharing.

5.5 Challenges and Limitations of BBA

In response to international legal developments on biological diversity Bangladesh has successfully enacted BBA with a framework for governance which is particularly significant for its access and benefit sharing mechanism. However, one concerning downside of the BBA is that the NCB is composed by bureaucrats who lack capacity preparing biodiversity registers and TK documentation. Although a Technical Committee is there to support the NCB, it has no say in decision-making. Therefore, to implement the object of the BBA is a practical challenge for bureaucrats in NCB. At the same time, the legal validity of the NCB's decisions is not subject to any judicial or other independent review as the law provides that an appeal against the decisions of NCB goes to the NCB itself.⁶⁰

6. Conclusion

Bangladesh is enriched with biodiversity and diverse traditional heritage. Therefore, the protection and equitable management of traditional knowledge (TK) in Bangladesh requires special attention. The Bangladesh Biological Diversity Act (BBA) of 2017 reflects the nation's commitment to the Convention on Biological Diversity (CBD) by providing a legal framework designed to conserve biological diversity, promote sustainable use, and ensure fair sharing of benefits derived from biological resources and traditional knowledge. The BBA while aligning with CBD's goal, gave special emphasis on addressing misappropriation of TK. The mechanisms of the Act for prior informed consent, access and benefit-sharing, and documentation are essential in addressing the misappropriation of TK. However, challenges remain in the practical implementation of these provisions. The effectiveness of the BBA in safeguarding TK from misappropriation requires further scrutiny. The oral and evolving nature of TK poses difficulties for formal documentation and protection, and the risk of commercial exploitation continues to threaten the preservation of this invaluable knowledge. To fully realize the objectives of the BBA and the CBD, it is crucial to enhance efforts in preserving and documenting TK, thereby safeguarding the cultural and ecological heritage of Bangladesh for future generations.

⁶⁰ Bangladesh Biological Diversity Act (2017) sec 48

