2

ACCESS AND BENEFIT SHARING UNDER BIOLOGICAL DIVERSITY ACT, TRADITIONAL KNOWLEDGE AND IP MANAGEMENT

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ABSTRACT

The research paper is an attempt to understand the concept of the Access and Benefit Sharing mechanism provided under the Convention of Biodiversity, 1992 in the context of India wherein, the Biological Diversity Act, 2002 incorporates the same spirit. The purpose of this benefit-sharing is to enable the indigenous people, who are the guardians of not only the biological resources but also their related traditional knowledge. Therefore, there is no ambiguity in the fact that the indigenous people are also the stakeholders and stands to benefit from this mechanism. Further, on the other end is the novel concept of Intellectual Property Asset Management which seeks to aim at adducing maximum profits out of the planned utilization of various intellectual property assets. There are various ways of successfully managing such assets and the same shall be elaborately discussed here. The objective of this paper is to bring together all these three concepts and analyze it in context i.e. to amalgamate them to reach a harmonious collaboration of all. The solution to the problem of how intellectual property asset management principles can be used to access and benefit-sharing agreements that seek to benefit holders of traditional knowledge is sought to be obtained through this paper. Various issues like what clauses should be incorporated into such agreements to ensure maximum benefit sharing and protection of the rights of the providers are attempted to be addressed through the paper. The research methodology is a combination of doctrinal method as well as empirical method to find out the gap in awareness amongst the indigenous people about the benefits of the access and benefit-sharing mechanism. The result of the empirical study conducted by way of a field survey in Subankhata Reserve Forest in Baksa District of Assam was that there is a total lack of awareness amongst the indigenous people about the value of their traditional knowledge as well as the benefits of the Biological Diversity Act, 2002 and the access and benefit-sharing mechanisms therein. Even the Forest Range Officer who is supposed to be the Member-Secretary of the Biodiversity Management Committee of the jurisdictional forest range was not aware of the proper functioning of the Act. The uniqueness of this paper lies in the improbable integration of intellectual property asset management principles into the access and benefit agreement as well as into the various provisions of the Biological Diversity Act, 2002, and especially the role of the Biodiversity Management Committees. This research paper will make a valuable contribution to developing a better understanding of the interplay of various principles, which while at the onset, might appear to be totally opposite, can actually be successfully integrated into another mechanism that has a completely different objective.

Keywords: access and benefit sharing, biological resources, indigenous people, intellectual property asset management, traditional knowledge.

1) Introduction:

a) Intellectual Property Asset Management

The concept of Intellectual Property Asset Management (hereinafter referred to as IPAM) is a concept which centers around identifying data, which when organized gets transformed into information that may be useful and form a part of the knowledge bank of any organization and becomes an asset. IP Asset is a collection of various intellectual properties such as Patents, Trademarks, Copyrights, Industrial Designs, Geographical Indications amongst others that are "*strategically chosen for their business value.*"[159] Managing such intellectual assets carefully and in a strategic manner that maximizes its value is the key to generating wealth.[160] In the 20th Century, there have been numerous organizations that have been successful by successfully employing their intellectual assets and intellectual property rights effectively. IBM is one such brand who which has through its robust intellectual property management regime, has been able to generate annual revenue of 1.8 Billion Dollars only by way of royalty out of their portfolio of over 25,000 patents.[161] IPAM is a process that "*addresses the explosive growth of intangible assets and their impact on the company's strategic market and shareholder value.*"[162] This has benefitted not only large companies who generate huge royalty amounts by way of licensing of their IP assets to other parties but also universities and small and medium-sized enterprises. For instance, universities in Canada and the United States have been able to sustain their budgets as well as

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[159] IP ASSET DEVELOPMENT AND MANAGEMENT: A KEY STRATEGY FOR ECONOMIC GROWTH 7 (WIPO), https://www.wipo.int/edocs/pubdocs/en/intproperty/896/wipo_pub_896.pdf.

[160] SUNITA K. SREEDHARAN, AN INTRODUCTION TO INTELLECTUAL ASSET MANAGEMENT 3 Wolters Kluwer (India) Pvt. Ltd., New Delhi).

[161] *Id.* at 3.

[162] IP ASSET DEV., *supra* note 1, at 8.

education and research programs by licensing their self-generated patents. Stanford University was able to generate a gross royalty of 49.5 million dollars in the fiscal year 2004-2005 by managing around 1,100 inventions licensed to companies all over the world.[163] The trend in developing countries is also encouraging as they see the increased potential of indigenous development and accumulation of IP Assets in vital areas of business through the instruments of technology transfer agreements, by attracting joint ventures and expanding into new regional markets. Mergers and Acquisitions are another way to increase the corporate value of companies as the merging of different IP Assets into the new entity increases the actual and perceived market values.[164] According to the WIPO, IPAM involves IP Assessment and Planning that requires "*IP Auditing, strategic IP Plans, clustering target areas, human capital development, incentives, policies addressing brain drain, IP policies to benefit SMEs, institutional IP policies in research institutions and regional cooperation and markets*."[165]

One of the most important and the first step towards managing one's IP is to go for an audit. IP Audit refers to "*systematic review of all the intellectual assets owned, used or acquired by a company.*"[166] Its main purpose is to create an inventory of all the IP Assets and IP licensed-in or licensed-out that are owned by a Company. The idea behind an audit is to figure out IP assets that are under-utilized, identify and respond to any threats to a company's bottom line and accordingly plan and device appropriate and informed strategies to deal with the same in a way that improves the market position of the concerned company.[167] The benefits of having a vigilant IP regime can be witnessed from the successful campaign that was led by the Council for Scientific and Industrial Research (CSIR) against the granting of a patent on "*use of turmeric in wound healing*" by the U.S.A. in 1995. The CSIR in the re-examination proceedings were able to show around 32 references in Sanskrit, Urdu, and Hindi some of which were over a century old that established that the healing properties were well-known in India prior to the filing of the patent. As a result, the United States Patent and Trademarks Office (USPTO) revoked the patent on grounds of lacking novelty and 'anticipated references'.[168] This case became the first case ever to have successfully challenged a patent based on traditional knowledge of a developing country and getting the patent revoked. As a result of this, Traditional Knowledge Digital Library (TKDL) and Traditional Knowledge Resource Classification were set up. Further, Traditional Knowledge (*hereinafter referred to as TK*) was included in the International Patent Classification System.[169] This case along with the *Basmati case* also triggered amendments in the existing Patent Act, 1970, and enactment of the Geographical Indications (Registration of Goods) Act, 1999.

b) *Traditional Knowledge*

Traditional Knowledge according to the World Intellectual Property Organization (*hereinafter referred to as WIPO)*, "*a living body of knowledge that is developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.*"[170] It further states that "*knowledge, know-how, skills, innovations or practices that are passed between generations in a traditional context; and that form part of the traditional lifestyle of indigenous and local communities who act as their guardian or custodian*"[171] is also included in TK.

The particular focus of this paper is, however, on a sub-category of TK which is called Traditional Ecological Knowledge (TEK) which "*consists of a body of knowledge, beliefs, traditions, practices, institutions, and worldviews developed and sustained by indigenous, peasant, and local communities in interaction with their biophysical environment*".[172] TEK is stated to encompass the accumulated knowledge concerning the environment, practices of resource management, and its related social institutions along with a worldview of the indigenous and local people. Such knowledge is enabling in nature owing to the vital human resource it can guide adaptive management and accordingly shape human-environment interactions and has already been recognized for its critical role in conservation planning.[173] Moreover, disciplines such as anthropology and ethnobiology to systems ecology and resilience theory have successfully demonstrated that TEK contributes to improving livelihoods along with building resilience in the social-ecological systems.[174]

WIPO believes that defensive as well as positive protection measures should be taken to secure Intellectual Property Rights (*hereinafter referred to as IPR*) in TK. Defensive Protection is sought to so that there is no misappropriation of the same and its use is limited to the customary holders of TK.[175] Similarly, Positive Protection is needed to give the holders the right to protect and promote their own TK and also includes the creation of a *sui generis* legislation by the concerned member states.[176] According to *Sara Bannerman*, although the WIPO and its predecessors have been "*building and expanding*" the IPR laws of the West and

[163] IP ASSET DEV., *supra* note 1, at 10.
[164] IP ASSET DEV., *supra* note 1, at 13.
[165] IP ASSET DEV., *supra* note 1, at 13.
[166] SUNITA, *supra* note 2, at 69.
[167] SUNITA, *supra* note 2, at 69.
[168] SUNITA, *supra* note 2, at 72.
[169] SUNITA, *supra* note 2, at 73.
[170] INTELLECTUAL PROPERTY AND GENETIC SOURCES, TRADITIONAL KNOWLEDGE AND TRADITIONAL CULTURAL EXPRESSIONS: AN OVERVIEW 34 (World Intellectual Property Organization, 2012, https://www.wipo.int/edocs/pubdocs/en/tk/913/wipo_pub_913.pdf
[171] *Id.* at p. 8.
[172] Erik Gomez-Baggethun, Esteve Corbera and Victoria Reyes-Garcia, *Traditional Ecological Knowledge and Global Environmental Change Research Findings and Policy Implications*, 18.4 ECOLOGY AND SOCIETY 1, 2 (2013), https://www.jstor.org/stable/26269385?seq=1&cid=pdf-reference#references_tab_contents
[173] Ruifei Tang and Michael C. Gavin, *A Classification of Threats to Traditional Ecological Knowledge and Conservation* Responses,14.1 Conservation & Society 57, 57 (2016), https://www.jstor.org/stable/26393228.
[174] Eric Gomez, *supra* note 14, at 2.
[175] *Traditional Knowledge*, WORLD INTELLECTUAL PROPERTY ORGANIZATION (Mar. 31, 2020), https://www.wipo.int/tk/en/tk/.
[176] *Id.*

thereby focusing primarily on western works and subject-matter, WIPO has also been engaged in debating on the protection of other subject-matter such as folklore since 1970s and TK since 1998.[177] *Bannerman* states that though the WIPO has since then been involved in a lot of "*norm setting*" activities in fields of TK, some indigenous people who are the stakeholders were not very enthusiastic about such regulations as they felt that it was preferable to adopt a "*bottom-up approach based directly on local and customary laws.*"[178]

The answer to the question of whether, if at all, TK can be protected under the existing IPR regime can never be answered in a single approach. According to Dr. Kongolo, one approach states that the trying to protect TK as an IPR may do more harm than good to TK holders as "*it could lead to alienation and/or deterioration of culturally sensitive subject matter*".[179] According to some commentators, TK possesses such attributes that prevent it from being a part of the conventional IP system such as in the case of TK the authorship is difficult to determine the right holder over it as often it is owned by the community as a whole.[180] Another challenge is the limitation in terms of the duration of protection afforded by conventional IP systems which are relatively brief.[181]

The *sui generis* system of TK protection may be considered appropriate as it "*illustrates a diversity of approaches to different issues*" and is also open to being either restricted to specific areas of policymaking or be extended to a more general sense.[182] According to the scholar, "*rights under sui generis TK systems are typically held in a collective manner by indigenous and local communities, defined in various ways according to national law and circumstances*."[183] It has also been commented that the range of rights afforded under *sui generis* TK system though varies considerably may be considered as "*copyright-style rights*" as it enables the right to "*prevent and authorise reproduction and rights of attribution*".[184] This system also allows rights to be acquired automatically without the need for any registration or examination procedure as well as varied legal sanctions such as civil and criminal measures. Even the duration of the protection of such TK may be provided as infinite.[185]

In 2004 the *Geneva Declaration on the Future of the World Intellectual Property Organization*, a document was signed by various non-profit organizations, scientists, academics, etc. urging the WIPO to focus their IPR legislations on the needs of developing countries and to "*view IP as one of many tools for development- not as an end in itself.*" which was subsequently adopted by its General Assembly.[186] The Declaration states as follows: *"Enormous differences in bargaining power lead to unfair outcomes between creative individuals and communities (both modern and traditional) and the commercial entities that sell culture and knowledge goods. WIPO must honor and support creative individuals and communities by investigating the nature of relevant unfair business practices, and promote best practice models and reforms that protect creative individuals and communities in these situations, consistent with norms of the relevant communities"*.[187] Some of these recommendations were incorporated in the Development Agenda in 2007 which recommended "*to accelerate process on the protection of…traditional knowledge…without prejudice to any outcome, including the possible development of an international instrument or instruments*".[188]

In the context of TEK specifically, there was a great decline in traditional lifestyles and associated knowledge, and in the 1980s, when the academia re-discovered it, there was doubt of its survival past the millennium. However, such knowledge and experience of managing a local ecosystem and the services it produced, were safely stored and transmitted in *pockets of social-ecological memory* despite the changes in the surrounding environment. This led to increasing recognition of the value of such knowledge in environmental policy.

In the same year of the establishment of the Development Agenda in 2007, the United Nations General Assembly adopted the *United Nations Declaration on the Rights of Indigenous Peoples* (hereinafter referred to as UNDRIP).[189] Article 31 therein provided that Indigenous people "*have the right to maintain, control, protect and develop their Intellectual Property over their…cultural heritage, traditional knowledge and traditional cultural expressions*".[190] The Declaration, therefore, encouraged national governments to in effect also protect TEK owing to importance as cultural heritage. The Declaration further provides for the indigenous people's right to participate in decision making powers in matters that tend to affect their rights by way of choosing their representative for such a purpose in accordance with their own procedure.[191] Apart from that they also have the right to maintain and develop their

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[177] *'What is WIPO?'*, WORLD INTELLECTUAL PROPERTY ORGANIZATION (Mar. 31, 2020), http://www.wipo.int/aboutwipo/en/.
[178] MATTHEW RIMMER, INDIGENOUS INTELLECTUAL PROPERTY: A HANDBOOK OF CONTEMPORARY RESEARCH 83 (Edward Elgar Publishing 2015).
[179] DR. TSHIMANGA KONGOLO, UNSETTLED INTERNATIONAL INTELLECTUAL PROPERTY ISSUES 42 (Kluwer Law International 2008).
[180] *Id.* at 43.
[181] KONGOLO, s*upra* note 21, at 43.
[182] KONGOLO, s*upra* note 21, at 43.
[183] KONGOLO, s*upra* note 21, at 43.
[184] KONGOLO, s*upra* note 21, at 43.
[185] KONGOLO, s*upra* note 21, at 44.
[186] *Geneva Declaration On The Future Of The World Intellectual Property Organization*, CONSUMER PROJECT ON TECHNOLOGY (Mar. 31, 2020, 9:00AM), http://www.cptech.org/ip/wipo/futureofwipodeclaration.pdf.
[187] *Id.* at 3.
[188] *The 45 Adopted Recommendations under the WIPO Development Agenda 2007*, recommendation 18, WORLD INTELLECTUAL PROPERTY ORGANIZATION, https://www.wipo.int/ip-development/en/agenda/recommendations.html
[189] UNGA, *United Nations Declaration on the Rights of Indigenous Peoples*, Sep 13 2007, A/RES/61/295, https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf
[190] *Id.*at Art. 31.
[191] UNGA, *supra* note 31, at Art. 18.

indigenous institutions of decision-making.[192] However, in spite of such a progressive provision, there have been allegations that the implementation of Article 18 is inadequate and the *United Nations Permanent Forum on Indigenous Issues* has urged the WIPO to improve implementation of the same.[193]

Over the years the Intergovernmental Committee (IGC) has tried to accommodate the opinions of its member states to conclude an international instrument that seeks to concretely protect TK. However, it has also acknowledged that "*working out the details is complex and there are divergent views on the best ways forward, including whether IP-type rights are appropriate for protecting traditional forms of innovation and creativity*".[194]

The Convention on Biological Diversity, 1992 (*hereinafter referred to as CBD*), too, in Article 8(j) provided for respecting, preserving, and maintaining of TEK, recognizing its role in the conservation and sustainable use of biodiversity along with promoting its wider application in resource management and biodiversity conservation.[195] This call was taken up by the Parties to the Convention by the creation of national legislations to give legal effect to the same. It was hoped that such establishment and emergence of policies will lead to the implementation of programmes to wisely tap the potential of TEK.[196] The innovation of the CBD i.e. Access and Benefit Sharing (*hereinafter ABS*) therefore also naturally applies to TEK more specifically whenever any TK is sought to be accessed.

c) Access And Benefit Sharing Under Biological Diversity Act, 2002

India ratified the CBD, 1992 in the year 1994 and after numerous consultations, enacted the Biological Diversity Act, 2002 (*hereinafter referred to as BDA*) and notified the Rules in 2004, "*to give effect to the provisions of the provisions of CBD, including those relating to its third objective on Access and Benefit Sharing (ABS).*"[197] Further, it is pertinent to mention that India was one of the first countries to enact such legislation which seeks to implement the Act using a three-tiered institutional structure: the National Biodiversity Authority (NBA), State Biodiversity Authority (SBA), and the Biodiversity Management Committee (BMC) at the local level. This structure is set up in sync with the model of decentralization of powers contained in the Constitution of India.[198]

The BDA in its Preamble recognizes that the main objective underlined by the CBD was "*conservation of biological diversity and equitable sharing of benefits arising out of its components and fair and equitable sharing of the benefits arising out of utilization of genetic resources.*"[199] In the Act, the term used is "*fair and equitable benefit sharing*" to refer to access and benefit-sharing. The sharing of benefits thereunder shall be determined by the NBA as per Section 21.[200] However, as a prerequisite, it is pertinent to appreciate the approval mechanisms set under Section 19 and 20 which Section 21 seeks to regulate by imposing fair terms and conditions. Section 19 lays down the substantive law concerning the approvals mandated to be taken from the NBA by any person "*who intends to obtain any biological resource occurring in India or knowledge associated thereto for research or for commercial utilization or for bio-survey and bio-utilization or transfer the results of any research relating to biological resources occurring in, or obtained from, India,…*".[201] This is to be done by making an application to the NBA in the prescribed form and manner provided[202] under the Rules. It is also required by the provision that approval shall be taken in the case where a person seeks to apply for IPR in or outside India, which is otherwise prohibited under Section 6(1) of the Act.[203] It may be noted that the direct reference to Section 6(1) was later inserted into the Bill by way of an amendment.[204] to Sub-Section 3 gives discretionary powers to the NBA to accept or reject such applications after making suitable enquiries including the constitution of an expert committee to review the same. Any approval, if made, would be subject to appropriate Regulations made on that behalf and other terms and conditions which according which including the imposition of royalty charges. Any rejections, if made must be recorded in writing.[205]

Section 20 adds a further qualification upon Section 19 as it acts as a *non-obstante* clause. It states that notwithstanding the approval granted by the NBA under Section 19, no biological resource or associated knowledge related to the subject-matter being approved, can be transferred by any person except by further permission by the NBA.[206] An application in the prescribed form may be made to the NBA in such manner prescribed.[207] Upon receiving such applications the NBA may reject or approve it after making such enquires as it may deem fit to make including the constitution of an expert committee for such purpose if found necessary. Such applications if approved, would be subject to such terms and conditions as the NBA may deem fit to impose including royalty charges. No rejection shall however be made, without affording an opportunity of hearing the

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[192] UNGA, *supra* note 31 at Art. 18.
[193] MATTHEW, *supra* note 20, at 95.
[194] IP & GEN. SOUR., *supra* note 12, at p. 45.
[195] UNEP, *Convention on Biological Diversity, 1992*, art. 8(j).
[196] Eric Gomez, *supra* note 14, at 3.
[197] Convention on Biological Diversity, https://www.cbd.int/countries/profile/?country=in#measures (last visited Mar. 30, 2020)
[198] *Id.*
[199] The Biological Diversity Act, 2002, Preamble, No. 18, Acts of Parliament, 2003 (India).
[200] TBDA, *supra* note 41, Sec. 2(g).
[201] TBDA, *supra* note 41, Sec. 19(1).
[202] TBDA, supra note 41, Sec. 19(1).
[203] TBDA, *supra* note 41, Sec. 19(2).
[204] Lok Sabha Debates, *Consideration of the Biological Diversity Bill, 2001*, http://loksabhaph.nic.in/Debates/Result_Archive.aspx?dbsl=1304790 (last visited Mar. 30, 2020)
[205] TBDA, *supra* note 41, Sec. 19(3).
[206] TBDA, *supra* note 41, Sec. 20(1).
[207] TBDA, *supra* note 41, Sec. 20(2).

applicant and the reasons for rejection must be stated in writing.[208] It may be interesting to know that the discretionary power of the NBA to conduct enquiries under this provision was only granted by way of insertion of the words "*may deem fit*" by an amendment in the Lok Sabha. The older Bill contained the words "*deemed fit*" which made it compulsory for the NBA to conduct such an enquiry before grant of approval leaving no room for flexibility at all.[209]

Having taken cognizance of the above-mentioned provisions, it would now be appropriate to appreciate the ambit of Section 21. As per Clause 1 of Section 21, the NBA is authorized to ensure that the terms and conditions, subject to which the approval is granted for the use of biological resources, their by-products, innovations, and practices associated with their use and applications and its related applications and knowledge "*secures equitable sharing of benefits*". Such terms and conditions must be as a result of mutual agreement between the person who applies for such approval, the concerned local bodies, and the benefit claimers.[210] i.e. the traditional knowledge holders.

Before proceeding with the other Clauses, it is important to look into certain definitions relevant in this context. The term "*local bodies*" have been given the meaning of Panchayats and Municipalities within the meaning of Article 245B(1) and 243Q(1) of the Constitution of India, 1950 or in its absence, whatever self-government bodies are being constituted under any other provisions of the Constitution or Central or State Act.[211] Further, the term "*benefit-claimers*" refers to "*the conservers of biological resources, their byproducts, creators and holders of knowledge and information relating to the use of such biological resources, innovations and practices associated with such use and application.*"[212]

Clause 2 of Section 21 prescribes the manner in which the NBA shall, subject to relevant Regulations made in this behalf, determine benefit sharing to be given effect to. Either of any or all of these methods may be used to achieve the stated purpose by the NBA.[213] These involve the a) joint ownership of IPR to NBA, or to benefit claimers where they are identified[214]; b) transfer of technology; setting up of production[215]; c) research and development units in such areas where it will facilitate better living standards for the benefit claimers[216]; d) developing an association between the Indian scientists, benefit claimers and the local people in the fields of research and development in biological resources, bio-survey, and bio-utilization[217]; e) benefitting the benefit claimers by aiding them by setting up of venture-capital funds[218]; f) the NBA may instruct the payment of monetary compensation as well as non-monetary benefits to the benefit claimers as it may deem fit.[219]

Clause 3 further lays down that the NBA may direct that, where any amount of money is ordered to be paid, such money is to be deposited in the National Biodiversity Fund created for such purpose. An exception is however created in cases where any biological resource or knowledge was directly accessed from a specific individual or a group of individuals or organizations. In such a case, the NBA may direct that such amount of money so directed to be paid, must be paid directly to such individual, group of individuals, or organizations, according to the terms of the agreement so entered for such purpose and in the manner as NBA deems fit.[220] Appropriate guidelines shall be framed for the purposes of this Section by the NBA in consultation with the Central Government by regulations.[221]

Therefore, it is clear from these provisions in Chapter V that there is an adequate mechanism set up to ensure that there is benefit accruing, monetary, or otherwise for the accessing of biological resources or related knowledge. The provisions not only put a check against the illegitimate securing of IPR over any biological resources occurring in India, but it also provides a mechanism for identification of the benefit claimers who are the true guardians of these resources and seeks to benefit them.

d) Link Between Access And Benefit Sharing With Traditional Knowledge In Turn With IP Management

Access and Benefit-sharing "*refers to the way in which genetic resources may be accessed, and how the benefits that result from their use are shared between the people or countries using the resources (users) and the people or countries that provide them (providers)*".[222] This mechanism has been adopted in the Convention on Biodiversity and Article 15 therein lays down the Rules which is to govern the access and benefit-sharing. The Governments of countries party to this Convention have been assigned two key responsibilities under these Rules:

- "*To put in place systems that facilitate access to genetic resources for environmentally sound purposes.*
- *To ensure that all the benefits resulting from their use are shared fairly and equitably between users and providers.*"[223]

The users have been identified to be various research institutes or companies seeking access to biological resources or related knowledge for purposes of scientific research or product development. To have an access to such resources or knowledge,

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[208] TBDA, *supra* note 41, Sec. 20(3).
[209] LS Deb., *supra* note 46.
[210] TBDA, *supra* note 41, Sec. 21(1).
[211] TBDA, *supra* note 41, Sec. 2(h).
[212] TBDA, *supra* note 41, Sec. 2(a).
[213] TBDA, *supra* note 41, Sec. 21(2).
[214] TBDA, *supra* note 41, Sec. 21(2)(a).
[215] TBDA, *supra* note 41, Sec. 21(2)(b).
[216] TBDA, *supra* note 41, Sec. 21(2)(c).
[217] TBDA, *supra* note 41, Sec. 21(2)(d).
[218] TBDA, *supra* note 41, Sec. 21(2)(e).
[219] TBDA, *supra* note 41, Sec. 21(2)(f).
[220] TBDA, *supra* note 41, Sec. 21(3).
[221] TBDA, *supra* note 41, Sec. 21(4).
[222] *Introduction to Access and Benefit Sharing*, Convention on Biodiversity 1, 3 (2010), https://www.cbd.int/abs/infokit/brochure-en.pdf
[223] *Access and benefit-sharing*, CONVENTION ON BIODIVERSITY 1, 3 (Aug. 22, 2011, 4:28PM), https://www.cbd.int/abs/infokit/revised/print/factsheet-abs-en.pdf

firstly the users need to obtain permission from the provider country. This is known as Prior Informed Consent (PIC). In addition to such a consent being obtained, it is also necessary for both the user and the provider to negotiate an agreement on Mutually Agreed Terms (MAT) creating an obligation upon the former to share the benefits arising out of such access equitably with the latter.[224]

In order to understand why access and benefit-sharing is important or relevant in the case of TK, the meaning and importance of genetic resources must be understood. Genetic resources refer to all living organisms: plants, animals, and microbes carrying a genetic material that could be useful to human beings. These resources may be occurring in natural environments (in-situ) or preserved by humans in collections such as botanical gardens, gene banks, seed banks amongst others (ex-situ).[225] There lie significant potential benefits from accessing these resources and using the same as they are a source for not only understanding this natural world in a better way but for the development of products such as medicines, agricultural and environmental practices that are sustainable, etc. for the greater benefit of humans.[226] It has been recognized by the State Parties to the CBD that a lot of the current understanding of these genetic resources is derived from the TK of preserved and practiced by indigenous and local communities and passed down over generations.[227] It has also been recognized that these communities are responsible for the conservation of our biodiversity through their sustainable practices and hence it is important to understand and value their contribution by bestowing upon certain rights. This can be done by ensuring their welfare by way of accrual of benefits, monetary or otherwise during negotiations to arrive at MAT for access and use of such genetic resources of which these communities stand as guardians.[228] This will not only incentivize conservation and sustainable use efforts but also pave the way for "*a fairer and more equitable economy to support sustainable development*".[229]

It is a known fact, that various IPR may be obtained out of genetic resources. A patent may be obtained out of a research project based on genetic resources that may have been intended to lead to the discovery of a patentable invention, its subsequent licensing and commercial development, etc.[230] In this context parties to the ABS agreement can contain clauses deciding the specific conditions such as joint ownership of the patents, how to apportion the monetary/non-monetary benefits arising out of commercial exploitation of patent[231], notification to the provider by the recipient upon the filing of patent applications[232], confidentiality clause on R&D[233], amongst others agreed upon on MAT.[234]

Trademarks (*hereinafter TM*) can also be obtained to distinguish the genetic resources themselves, their associated TK, or R&D outcomes based on their use if the same is sought to be applied commercially. The owners of the TM are able to distinguish their products in the marketplace, marketing, and building of a brand name and reputation and can further be used to earn royalty by way of licensing.[235] Through ABS Agreements, details may be chalked out concerning whether permission needs to be obtained by the user from the provider to use the TM and the concerned MAT, any limitations, if any to the use of the TM, ownership of the TM and its maintenance, assignment or licensing terms as well as apportionment of benefit-sharing out of profits arising from the use of TM.[236]

Copyright may also subsist in written down or recorded accounts of genetic resources and its associated TK, organized in a systematic or methodical manner, either by virtue of they being a part of a database or compilation having a specific arrangement of the contents, qualifying as an intellectual creation.[237] Ownership to such written accounts, databases, etc. initially vests with the author, who might nor might not be the holder of the TK. Such an author could even be a person who merely provided information about genetic resources. "*Such a copyright owner has the right to give, assign or license some or all of the economic rights*"[238] which includes a reproduction of the protected work in printed form or sound recording, etc., public performance as a play, adaptation into a movie amongst others.[239] An ABS Agreement in this context lays down the terms and conditions such as who what be the owner of the copyright in literary works that contain TK associated with genetic resources and related information, what shall be the responsibilities of the user and provider in case of joint authorship and whether such works can be licensed to third parties and how shall the monetary and non-monetary benefits flowing from such copyright be apportioned.[240]

Trade secrets are a form of non-disclosure of confidential information that provides the holder of such information with a competitive advantage. The unauthorized use of such trade secrets is considered an unfair competitive practice and enjoys

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[224] *Id.* at 3.
[225] ABS, *supra* note 65, at 2.
[226] ABS, *supra* note 65, at 2.
[227] *Traditional Knowledge*, CONVENTION ON BIODIVERSITY 1, 3 (Nov. 11, 2011, 4:26PM), https://www.cbd.int/abs/infokit/revised/print/factsheet-tk-en.pdf
[228] TK, *supra* note 69, at 4.
[229] Intro. to ABS, *supra* note 59, at 2.
[230] *A Guide to Intellectual Property Issues in Access and Benefit-sharing Agreements,* WIPO 1, 29 (2018), https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1052.pdf
[231] Guide, *supra* note 72, at 33.
[232] Guide, *supra* note 72, at 32.
[233] Guide, *supra* note 72, at 31.
[234] Guide, *supra* note 72, at 30.
[235] Guide, *supra* note 72, at 35.
[236] Guide, *supra* note 72, at 36.
[237] Guide, *supra* note 72, at 38.
[238] Guide, *supra* note 72, at 39.
[239] Guide, *supra* note 72, at 38.
[240] Guide, *supra* note 72, at 40.

different protection standards depending on the legal system of the country.[241] There is no procedural formality and registration is involved in its protection.[242] Very often those in possession of TK concerning the utilization of various genetic resources are inclined to limit it's disclosure to certain individuals within the community for specific purposes or under certain circumstances, owing to its sensitivity[243], cultural significance, economic or other reasons.[244] This leads to trade secrets amongst the providers. Similarly, users wishing to access such resources or knowledge might want to restrict further dissemination by way of trade secrets. ABS Agreements in such context might lay down confidentiality clauses "*on how to handle and provide protection to prevent the unwanted disclosure of such information*."[245]

Having dealt with various IPRs that can subsist over IPRs and how ABS Agreements are the means to ensure a free flow of access to information and resource on one hand and monetary and non-monetary benefits on the other, it is now important to know how to manage these resources. Clearly, the patents, TM, copyright, etc. are an IP asset that needs to be exploited and managed properly so that the desired outcomes are achieved. Within the ambit of IPAM, the first question that is to be settled in the context of ABS agreement involving TK is whether or not such agreement shall be of commercial nature.[246] Very often, such is the case that the users seek access to the resources or related TK merely for academic purposes. In such, it is convenient to include a clause in the ABS agreement that no IP rights shall be sought without the PIC of the provider.[247] Very often, when there is uncertainty over whether the R&D would necessarily lead to the germination of new ideas, products, or processes that have the potential of being commercially exploited. In such cases, a clause may be inserted into the ABS agreement stating that in a situation where such a change of intent appears, there needs to be a separate agreement on MAT.[248] The accommodation of these flexibilities is an inherent character of IPAM. Similarly, IPAM also ensures that IP assets are transferred under fair conditions to third parties in a manner that they too are bound by the same obligations as the first user as agreed under MAT. Sometimes, the provider may condition the transfer of subject-matter of the contract to a third party by the user upon entering into a direct agreement by the provider and the third party promising the compliance of the same standards applicable to the transferor.[249]

IPAM focuses on using IP assets in a manner that gives the most beneficial outcome. Companies like IBM have by using far-sighted IPAM strategies involving their patent portfolios been able to earn huge royalties merely by licensing their inventions with the appropriate licensee. A licensing agreement can be an effective IPAM strategy to deal with situations where the user of a genetic resource or associated TK may not want to obtain an IPR owing to its cost and commercial risk. Entering into such an agreement with another party who has the resources and experience, ensures successful management especially when done on MAT through an ABS agreement.[250] Though the providers are not a direct party to such licensing agreements, in cases where any potential benefit-sharing obligations seem to be accruing, the permissible terms of such licensing activities should be pre-determined between the user and provider. Hence, it is a good IPAM strategy to clearly mention the terms and conditions for licensing an IPR as IP clauses in the ABS agreement along with clauses on permitted uses of the genetic materials of associated TK.[251]

IPAM also comes into play to decide on what type of license may be granted by a licensor- an exclusive license, which only allows the licensee to use the licensed IP or technology; a sole license which makes him the sole user or a non-exclusive license which enables innumerable licenses to be granted by the licensor.[252] IPAM ensures that the licensing agreement contains the exact and appropriate rights granted or restrained as well as how much fees or royalty rate is to be charged etc. It is very difficult to value the worth of an IP asset and various considerations come into play such as possible delays in regulatory approvals, realistic pricing, estimated time to be taken for the licensee to see the returns on his investment materialize, etc.[253] Only a properly analyzed IP strategy can achieve this balance. Hence, in the context of the ABS agreement, the MAT should be very balanced and not unduly favoring the user or the provider.

The final role of IPAM is in ensuring an amicable settlement to any dispute that might arise pursuant to the implementation of the ABS agreement. The dispute settlement clause in the ABS agreement must clearly specify when certain obligations may arise against each other[254], what shall be the recourse upon the impossibility of execution of the agreement, and on what circumstance shall these impossibilities of performance be justified. Further, what is the performance standard expected from the user, and the grounds on which such agreement shall stand terminated must be clearly mentioned. Lastly, the dispute resolution mechanism such as arbitration, mediation, or litigation, and which method shall apply in which situations must be clearly laid out along with the mutually agreed jurisdiction.[255]

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[241] Guide, *supra* note 72, at 40.
[242] Guide, *supra* note 72, at 41.
[243] Guide, *supra* note 72, at 45.
[244] Guide, *supra* note 72, at 44.
[245] Guide, *supra* note 72, at 45.
[246] Guide, *supra* note 72, at 46.
[247] Guide, *supra* note 72, at 46.
[248] Guide, *supra* note 72, at 49.
[249] Guide, *supra* note 72, at 50.
[250] Guide, *supra* note 72, at 51.
[251] Guide, supra note 72, at 51.
[252] Guide, supra note 72, at 53.
[253] Guide, supra note 72, at 54.
[254] Guide, supra note 72, at 55.
[255] Guide, supra note 72, at 55.

In the upcoming parts of this research paper the focus would be in identifying the gap in the implementation of the BDA, 2002, and the contribution of the lack of awareness of the intended beneficiaries to the arising of this gap.

2) Identifying The Gap Relating To Lack Of Awareness In Communities Having The Traditional Knowledge To Protect It Using IP Law:

For an excellent IPAM portfolio to exist, it is very important that the stakeholders are fully aware of the significance of creating such a database. This awareness is again linked to the awareness of the value of the IP assets or TK that are being guarded by the indigenous peoples and local communities. The BDA, 2002 though envisions the creation of an IP database in the form of People's Biodiversity Register (*hereinafter referred to as PBR*), has done precious little in the form of raising awareness about the same. Not only the PBR, but even fundamental concepts like ABS also have not been made aware to the masses.

It is important that the gap is identified and solutions to address the same be explored to empower the often marginalized peoples who despite being the caretakers and guardians of precious natural resources and TK are often left to the brink of poverty. Therefore, the researcher chose to conduct an empirical study to assess the gaps and find out the reasons for the lack of awareness amongst the stakeholders i.e. the TK holders.

In order to assess the gap in the awareness of the indigenous communities concerning the ABS provisions in the BDA Act, 2002, an empirical study was conducted in the Subankhata Reserve Forest in Baksa District of Assam. This Reserve Forest is a part of the Manas Wildlife Sanctuary which has been designated as a World Heritage Site by UNESCO.[256] The reason for choosing the area for the study was the existence of a TEK in the *Dong Bund System*, which is almost a century-old indigenous and community-managed irrigation system. This knowledge system has ensured irrigation and drinking water in an otherwise water-deficient geology i.e. a *bhabar* region.[257] Numerous indigenous tribes inhabit the area peacefully and equally contribute to the conservation of the TEK and its management. Some of the tribes involved are *Modahi, Nepali, Rabha, Adivasi, Koch-Rajbongshi* as well as people from the general castes.

For assessment of their awareness, a questionnaire was being prepared and read to them in Assamese to obtain their responses. A sample size of 72 was taken, all of whom were male, the youngest respondent being 28 years of age (Dipen Boro), and the eldest being of 86 years (Dhaneshwar Das). These respondents were members of the ***Dong Bund Management Committees*** in charge of the maintenance, day to day management, and coordination of the working of the irrigation system. As these Committees had no representation of women, all respondents were male. At present, 13 Dongs, each with their own Committee meet the requirement of 95 villages in the periphery benefitting around 36,468 people.[258] Out of these, only three committees i.e. no. 3, 4, and 8 were surveyed considering the huge area and limited time and resources at hand.

AGE GROUP	**NO. OF RESPONDENTS (SAMPLE SIZE 72)**
20-50	52
51-70	19
71 and above	1

Table: Age group of the respondents who are in charge of the management of the ***Dong Bund***

Since all of the Respondents were belonging to the rural area, all conversations of interview and gathering responses to questionnaires were carried out in the Assamese language. While having a conversation with Dhaneshwar Das, a farmer, and an Adviser to the No. 3 Dong Committee, he recounted how much the TEK had changed their lives and it was a gift of their forefathers to them so that they could sustain in the otherwise *Bhabar* region. According to him, the ***Dong Bund*** has not only been the source of irrigation but also household purposes like bathing, washing clothes, maintaining the cattle and until few years, the people used to use the Dong water directly for drinking purposes. Though a PHE water filtration plant has been set up, it is mostly dysfunctional. It was also highlighted how the flowers and other plants grow abundantly wherever the water is diverted through the smaller channels up to the fields of the households. There is also an abundance of various birds and wild animals who come to drink the water from the Dongs. The elder man also informed how at one time, indiscriminate fishing was prevalent in the *Pagla-Dia* river which is the source of the Dong water. However, after a point of time, the Committee decided to prohibit any kind of fishing activities to preserve the indigenous species sustaining in the river water. The economic impact of the TEK in providing a good yield of crops and making families financially stable by selling the surplus crops has also been acknowledged. He reminisced how at one point in time, there used to be regular fights amongst the different communities for water but the TEK of ***Dong Bund*** gave them a reason to maintain community harmony and work together in the spirit of cooperation to effectively and efficiently manage the water resource. However, he lamented that the upcoming youth no longer wants to enter into the agriculture sector and is moving to urban areas in search of jobs and hence the future of the TEK's maintenance is uncertain. There is no involvement of the youth in the activities of ***Dong Bund*** construction and repairs and the middle-aged men struggle with the forces of the river current to carry out construction. Many other respondents echoed the same views. He also commented that despite being a reserved forest, the Forest Department does not have a working

[256] Manas Wildlife Sanctuary, UNESCO & World Heritage Site Convention, https://whc.unesco.org/en/list/338/ (last visited on Mar. 31, 2020).

[257] MURTI, R. AND BUYCK, C. (ED.), SAFE HAVENS: PROTECTED AREAS FOR DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION 56 (IUCN 2014)

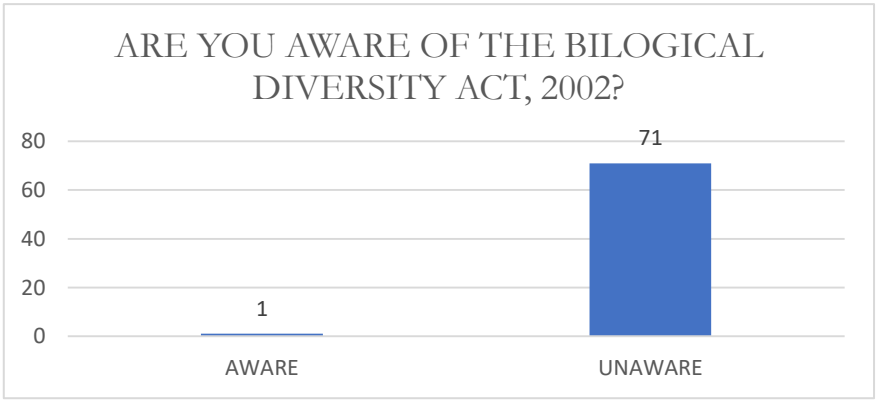
[258] *Id.* at 60.

relationship with the community people and where there once used to a Forest Beat Office, the same is not abandoned and as a result, the issues cannot be immediately taken up with the authorities. In reply to the questionnaire, Das stated that he was not aware of the existence of the BDA, 2002, and if the law could extend any helping hand to the community. It was also brought to notice how, once the irrigation department constructed an embankment system on the *Pagla-Dia* river without consultation with the indigenous peoples and as a result, the structure was washed away in the ensuing floods. In the next venture to construct another dam too, the engineers never bothered to take into account the changing course of the river and hence the embankment lies un-operational as the river course has changed since its construction. These anecdotes go on to throw light on how the law as well as its implementation on the ground suffers from serious handicaps as the TK as well as their knowledge holders are totally ignored by the State resource managers and institutions and dismissed as unscientific. This colonial mindset needs a revolutionary change taking a cue from other countries who have institutionalized TK in their natural resources management approach.

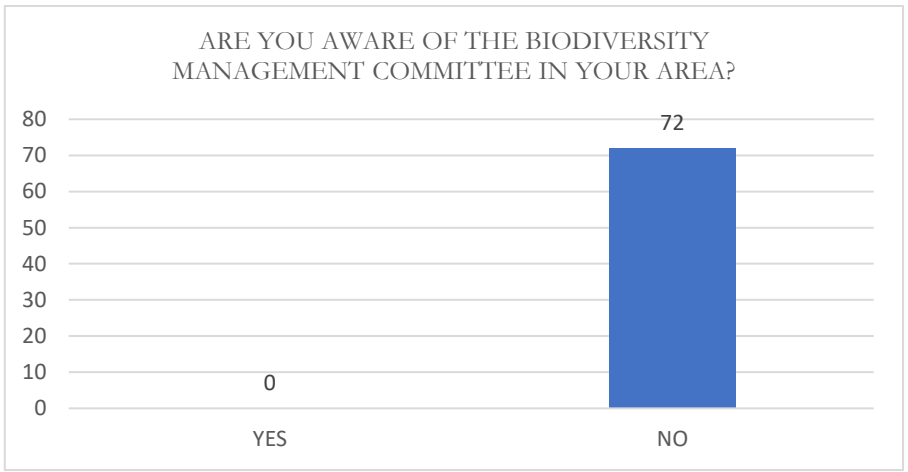
The researcher in the course of his stay and interaction with the indigenous communities and local people felt a warmth of brotherhood among each other as they sat together at night around a bonfire and discussed various issues. On one of the days of the stay, there was also a meeting held by one of the Committees concerning the distribution of water to different households. Owing to logistical issues, the same could not be attended. It was also observed that despite being guardians of such valuable TEK, the people seemed ignorant about its sustainability and relevance to the biological resources conservation and the biodiversity of the whole area. They have been petitioning the government for a concrete dam to channelize the water instead of the natural raw materials like bamboo, boulders, etc. currently used for the construction of the ***Dong Bund***. The locals feel that a concrete structure would forever relieve them from their perils of reconstructing and repairing the TEK periodically owing to damage from floods. However, despite repeated petitions, no work has been initiated as of now. Upon enquiring whether concretizing was a good move, Bipul Das, an expert from *Aaranyak*, who accompanied the researcher, stated in negative. According to Das, concretization would prevent water seepage, which *prima facie* seem to enable more water flow to the households and fields without loss, would cause the other biological resources which sustain from the water passing through the channels to die. This was an important observation that has to be informed to the people of the area so that these sustainable and biodiversity-friendly resource management practices are carried on. The SBBs and the BMCs have a big role to play in this scenario.

DATA ANALYSIS

The responses received on the questionnaire along with their analysis are hereby graphically represented:

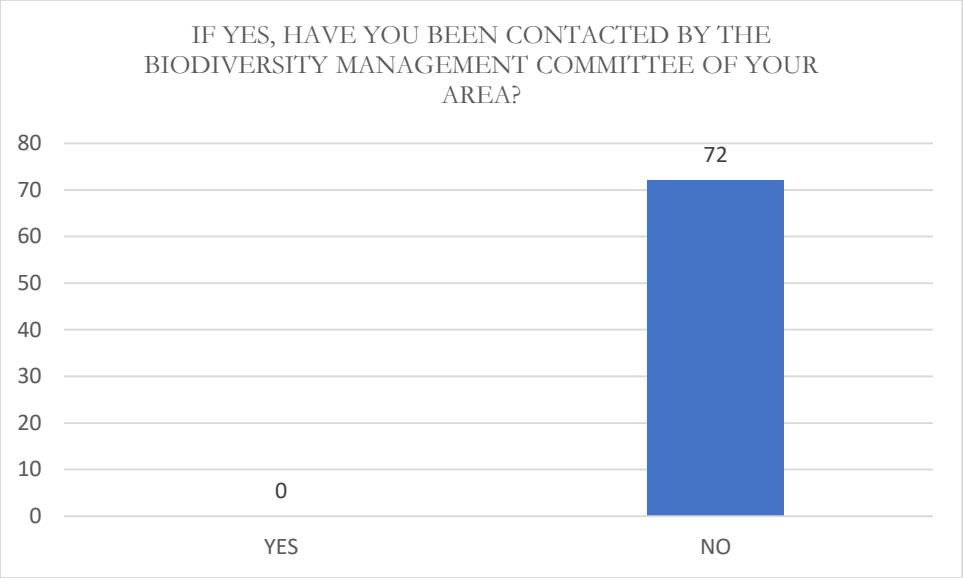


Data Analysis: All of the respondents except one admitted to being unaware of the BDA, 2002. The respondent who claimed to have been aware of the Acts existence had only heard of it and were not aware of the details.

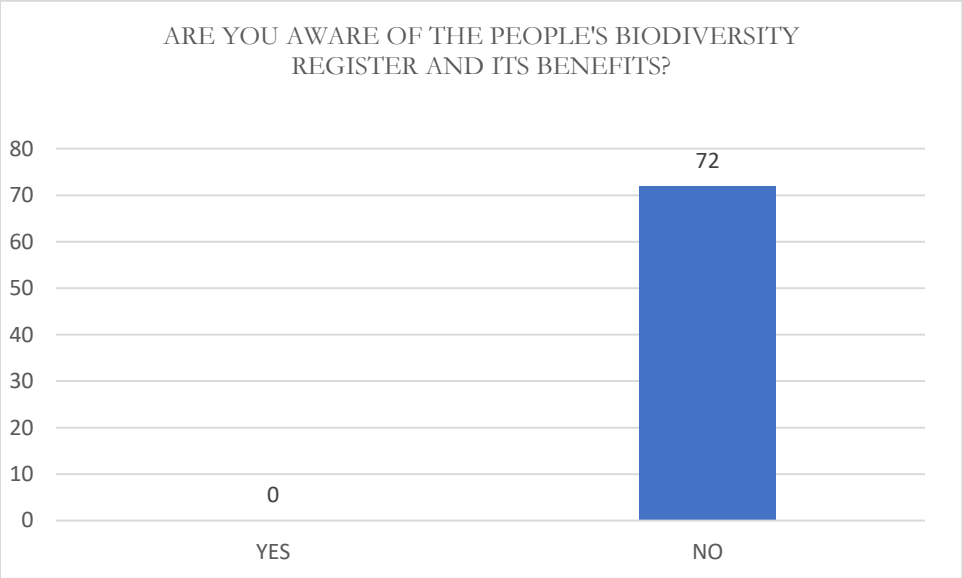


Data Analysis: All the respondents were unaware of their local BMC, which is unsurprising considering that only one claimed awareness of the BDA, 2002 itself. Even the respondent who claimed to be aware of the BDA, 2002 did not know about the

what is a BMC, how is it constituted, what are its functions and powers, let alone being aware of the existence of the local BMC in their area. It was later informed by the researcher that their area falls under Batabari BMC.



Data Analysis: On enquiring whether the respondents have ever been contacted by the Batabari BMC, it was replied in negative by all of them. Later on, it was informed to them that already two meetings of the BMC have been held at least on paper and that the Locals of *Subankhata* must also seek membership of the same to have a say in decision making.



Data Analysis: None of the respondents were aware of the PBR and its potential benefits, which according to the BDA, 2002 were envisioned for the purposes of documenting biological resources and their associated TK, which meant that the TK holders had to be made part of the PBR documentation process. In light of such revelations, it is doubtful as to how representative would the local PBR prepared by the Batabari PBR be as such important stakeholders were excluded. When enquired in the ASBB office, the researcher was informed that so far no management practices or associated TK have been identified in the Batabari BMC area to be documented in the PBR so far.

These data go on to show how ignorant these indigenous communities are about the law regulating biodiversity as well as its beneficial aspects. These people were not even aware that their irrigation systems qualify as a TK and is recognized and sought to be conserved through the BDA, 2002. The people were not aware of the potential benefits that lie from the possible commercial use of their sustainable irrigation system by way of the ABS agreement. They had complained that the BMC has never contacted them and they were not aware of the existence of such a committee until the question was asked. They also stated that no awareness regarding the benefits and protection under the BDA Act had ever been communicated to them to create awareness about the same. It is pertinent to note that this area is a part of the Baksa District which falls under the Bodoland Territorial Council. Since these areas do not have the Panchayati Raj system, the BMC at the local level has been set up in the level of forest ranges.[259] The Forest Range Officer is the member-secretary in such BMC.[260] The *Subankhata Reserve*

[259] *Constitution of Biodiversity Management Committees (BMC)*, Assam State Biodiversity Board, http://asbb.gov.in/constitution.html (last visited Mar. 31, 2020).

Forests come under the territorial jurisdiction of the Batabari Forest Range and hence the jurisdictional BMC is the Batabari BMC.

Upon interviewing the Forest Ranger Officer, about this total lack of awareness amongst the residents of *Subankhata*, he admitted that it has not been possible to reach out to that area. When spoken about the existence of a TEK in *Subankhata*, he expresses ignorance about the same. It was also discovered that while the procedure laid down under for constitution of BMC required a Forest Range Officer or above ranked forest officer, there was a delegation of this duty to his subordinate- a forester, who when asked had no clue about the working of the BMC or the purpose served by the same. It was informed that till the time of taking of the interview, two meetings of the BMC have taken place but no representation in the committee is found from the *Subankhata* area, despite having experience in maintaining almost a century-old TEK.

After being exposed to the ground realities, appointments were attempted to be sought with the top management of the ASBB and after a few failed attempts, the Scientific Officer responsible for the creation of BMCs and preparation of the PBR was interviewed and it was made known that as per Rule 25(9) of the ABDR, 2010, the creation of such PBRs is to be facilitated and developed by the BMCs at different levels. The Scientific Officer stated that even now, the process of creation of BMCs and PBRs are in progress and it shall continue for some time as there is a dearth of funds. Apart from that, though the ASBB has conducted a lot of awareness programs, it has not been able to cover all districts and BMCs at local levels. After having made aware of the existence of a TEK at *Subankhata*, the Officer agreed to conduct an awareness program over there. As of 17/03/2020, a total of 2549 BMCs have been constituted in Assam[261] and 2489 PBRs have been created[262] at different levels.

In addition to that, in reply dated 29/02/2020 to the Right to Information (RTI) filed by this researcher dated 06/02/2020, the following details were divulged by the ASBB[263] pertaining to the scope of this research paper:

1. Methods devised to ensure protection of Intellectual Property Rights over Biological Resources and associated Traditional Knowledge including systems of maintaining confidentiality of such information under Rule 14(xvi) of the Assam Biodiversity Rules, 2010.

Ans. The registered information regarding traditional knowledge and IPR in the PBR are confidential and are kept in safe custody with the Board and respective BMCs only.

2. Training programs planned and organized for personnel engaged for likely to be engaged in programs for the conservation of biological diversity and sustainable use of its components as per Rule 14 (xviii) of Assam Biodiversity Rules 2010.

Ans. Training and capacity building workshops and awareness generation activities of BMC members have been organized from time to time since 2012.

3. Grants-in-aid and grants sanctioned to the Batabari Biodiversity Management Committee for specific purposes as mentioned under Rule 14 (xxviii) of Assam Biodiversity Rules, 2010.

Ans. Financial assistance for strengthening and capacity building of Batabari BMC provided during January, 2019.

4. Number of Biodiversity Heritage set up under the Batabari Biodiversity Management Committee and the role assigned to the concerned Biodiversity Management Committee.

Ans. Until now, one Biodiversity Heritage Site has been declared by the Government of Assam i.e. "Majuli Biodiversity Heritage site.

5. Details on the constitution of the Technical Support Group set up to lend support to Batabari Biodiversity Management Committee.

Ans. The Technical Support Group of Baksa District has been formed by the District Administration during July, 2018, which will assist the Batabari BMC.

Hence, through the empirical study, it has been concluded that there is still a lack of awareness about the benefits of the BDA, 2002, let alone the highlight of the ABS provisions. It is the foremost duty of the National Biodiversity Authority and the Assam State Biodiversity Board to create awareness programme at the local level and also ensure that adequate representation of indigenous people who are the guardians of TEK and other TK are included as members of the BMCs. While there is no doubt that the authorities are working pro-actively in this whole process, much more needs to be done before the common citizenry is able to appreciate the benefits of this legislation. It must be noted that much of the land that is controlled by these indigenous and local peoples are characterized by ecological intactness and high biodiversity value and the source of this value lies in the stock of biodiversity rather than individual plants. And TEKs such as the *Dong Bund* maintain such as stock in a very innovative manner and that's where the excellence of such systems lies.[264]

Apart from identifying the gaps and reasons for their existence, the empirical study also enabled the researcher to gain a first-hand experience of the plight of the indigenous peoples and the local communities who reside in the remotest areas. Though

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[260] *Step: Procedure for formation of Biodiversity Management Committee (BMC) at local level.*, Assam State Biodiversity Board, http://asbb.gov.in/pdf/BMC%20formation%20steps.pdf

[261] *Biodiversity Management Committees*, National Biodiversity Authority (Mar. 17, 2020), http://nbaindia.org/content/20/35/1/bmc.html.

[262] *People's Biodiversity Register*, National Biodiversity Authority (Mar. 13, 2020), http://nbaindia.org/content/105/30/1/pbr.html.

[263] RTI No. ABB/RTI/2012/42/394 filed by Shri. Arindam Baruah (Feb. 29,2020).

[264] PETER DRAHOS AND SUSY FRANKEL, *Indigenous People's Innovation and Intellectual Property: The Issues*, INDIGENOUS PEOPLE'S INNOVATION 24, ANU Press (2012), https://www.jstor.org/stable/j.ctt24hfgx.7.

they are self-sufficient, they desire to better their living conditions, and leveraging their TK can help them achieve the same. The researcher in the course of the survey attempted to raise awareness amongst people about the economic and cultural potential that their TK holds and how the BDA, 2002 can empower them. The people were also made aware of the obligations of the Government and the biodiversity bodies towards them and how that can approach them for the law's enforcement. It is hoped that the people would be more aware of the law and press for its enforcement before the appropriate authorities.

After gaining an insight into the gap in the law's implementation, we shall now look into the role that BMCs are envisioned to discharge as an IPAM database.

3) **Role Of Biodiversity Management Committee As IPAM Database***:*

Before, delving into this concept of looking into BMCs as an IPAM database, it is important to remind ourselves that the objective of the BDA, 2002 is not trade-oriented but conservation and sustainable development-oriented.[265] The provision of ABS is of a totally voluntary nature is its main focus is never on reaping commercial benefits. The only aim is that, is at all access to biological resources and its associated is permitted, and any IPR is generated on it or profits are reaped thereupon, the contribution of these indigenous people, who have been the guardians and sustainers of these resources and TK should also be commensurately benefitted. Hence the reason for enabling payment of monetary and non-monetary benefits under the BDA, 2002.[266]

Provisions within the BDA which provide for Environment Impact Assessment (EIA)[267], registration of TK relating to biological diversity[268], notification of Biodiversity Heritage Sites[269], notification of threatened species, and creation of repositories for the safe custody of biological materials[270], amongst others, goes on to show that ABS is an only small part of the huge conservation objectives behind this Act.

It is in this context that even the concept of IPAM is to be looked into pertaining to the role of the BMCs. The BMCs, it is submitted, performs many roles of IPAM without really focusing to commercially profit from the IP assets generated therein within its territorial jurisdiction.

It has been seen in the previous chapters, how various IPR can be acquired out of genetic resources and their associated TK. What IPR arises in which context, and how the same can be regulated by way of ABS agreements as well as the issues therein have been elaborately discussed. *Rachna Singh Puri*, an IP expert comments that "*another often ignored aspect towards IP management is to look at all the different IP forms, the Patents, Trademarks, Designs, Copyrights, IC layout, Designs, Geographical Indications, Plant Varieties, and Trade Secrets in a holistic manner and use all the ones that may be applicable to a particular organization in sync to extract the maximum business benefit and value from them.*"[271] If the business benefit aspect is set aside, the BMCs assigned role is no different. Under the BDA, 2002, the BMCs are tasked with the task of "*documentation of biological diversity including preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals and microorganisms and chronicling of knowledge relating to biological diversity.*"[272] Therefore, in essence, the BMC is tasked with the prime responsibility of documenting ancient plants specifically bred for purpose of cultivation[273] as well as their conservation as a *landrace*, which was grown by ancient farmers and their successors.[274] Apart from plant varieties, even documentation of stocks of animal breeds is to be ensured by the BMCs. However, from an IP perspective, the BMC is tasked also with the documentation of various microorganisms and associated TK on which numerous IPRs may result as previously discussed. From the conservation point of view, all of these are assets that are to be managed and the documentation of the same in a literary form by the BMC will generate copyrights amongst others. Therefore, an IP portfolio can also result from such documentation, the creation of PBRs is one classic example which is a portfolio currently kept in secret by the BMCs and the State Biodiversity Boards. In case, any user is interested in accessing any of the resources or knowledge from the BMCs, these PBRs shall act as an IP portfolio which can then be effectively used under the ABS agreement to enter into MAT reaping huge benefits to the indigenous people amongst others.

Further, it may be noted that the BMCs role in the management of biodiversity resources and TK is recognized by the NBA and SBBs who "*shall consult*" them in taking any decisions involving the use of any biological resources and knowledge if the same lies within the said BMCs territorial jurisdiction.[275] The BMCs have also been given the power to levy charges as collection fees pursuant thereto.[276] All of this is a part of IP Strategy which "*involves a sustained effort to ensure returns in the investments towards IP assets and these involve any or all forms of intellectual property rights.*"[277] The collection fees which the BMCs are empowered to levy can be an IP Strategy in this sense as such fees enable the maintenance of assets so documented.

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[265] *Lecture by Dr. Shashikala Gurpur* (Mar. 31, 2020).
[266] TBDA, *supra* note 41, Sec. 21(2)(f).
[267] TBDA, *supra* note 41, Sec. 36(4).
[268] TBDA, *supra* note 41, Sec.36(5).
[269] TBDA, *supra* note 41, Sec. 37.
[270] TBDA, *supra* note 41, Sec. 39.
[271] RACHNA SINGH PURI, IP MANAGEMENT- ROLE OF AN EFFECTIVE IP STRATEGY, READING MATERIAL FOR LL.M. (2016-2017) 5 (2016).
[272] TBDA, *supra* note 41, Sec. 41(1).
[273] TBDA, *supra* note 41, Sec. 41(1),Explanation (a).
[274] TBDA, *supra* note 41, Sec. 41(1),Explanation (c).
[275] TBDA, *supra* note 41, Sec. 41(2).
[276] TBDA, *supra* note 41, Sec. 41(3).
[277] RACHNA, *supra* note 113, at 6.

The Assam Biodiversity Rules, 2010 clearly lays down the key mandate of the BMCs in the state of Assam. Amongst others, the BMC at the Zila Parishad level is tasked with the development of a district-wide network of PBR database.[278] Further, the BMCs are also required to maintain a database of local Vaids, Bez, Ojha, and practitioners using biological resources.[279] This clearly reflects IPAM characteristics wherein a database of IP assets are recorded in the form of a portfolio and is constantly subject to audit to find out the effectiveness of the assets. The scope for IP audit might also be relevant for the PBRs maintained by these BMCs to know which asset has the potential to fetch greater benefits for the community and accordingly ABS agreement can be entered into.

Another interesting aspect of IPAM that is sought to be related to the functioning of BMCs is having an IP Policy. In the context of an institution, the IP Policy contains ownership details of IP created by the personnel of that institution, mandatory disclosures to be made of all potential IP generated by members in due course of employment, technology license/transfer options, etc.[280] Similarly, the BMCs role in maintaining the record of various biological resources and related TK as well as various practitioners of TK can be seen as the creation of an IP policy as well wherein its documentation ensures that the BMC is aware of all potential IP assets in such resources or knowledge and also is prepared to enter into any ABS agreements with any user on behalf of the provider, akin to technology transfer/licensing as seen in a typical IP policy of an organization.

In the light of these comparisons, it is humbly submitted by the researcher that BMCs under the BDA, 2002, too discharge the IPAM role, though its objective may not always be purely commercial and profit maximization.

4) <u>Conclusion</u>:

The CBD, 1992 is a niche piece of international legislation that provides priority to the conservation of biodiversity, which is facing rapid destruction in human hands. It had as its objectives the anticipation, prevention, and attacking the causes of serious reduction or loss of biodiversity at source.[281] The Convention also recognized "*the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.*"[282] It was in this context that ABS was instituted as a novel method to ensure that benefits keep flowing to the indigenous people when any resources or TK which they are in possession of is accessed for commercial purposes.

The BDA, 2002 imbibed that spirit only a decade later. Nevertheless, the Act clearly stated its objective to give effect to the intentions of the CBD especially recognizing that the main objective is anything but commercialization of these resources and TK. Hence, the ABS mechanism was not to play a pro-active role in commercialization but only to safeguard and recognize the contribution of the indigenous people in the whole process of conservation and sustainability. It was only appropriate to ensure that if any of the natural resources or their TK was sought after by users who wanted to access them to innovate something new or productive, these custodians of the resources and knowledge also got some dues- monetary or otherwise.

IPAM on the other hand is a totally commercial concept that has as its goal profit maximization by appropriate utilization of IP assets by way of proper strategies and policies. Though an emerging concept, the need for IPAM has been increasingly felt in today's knowledge economy. Therefore, it is felt that it is the need of the hour to infuse IPAM principles into the veins of BDA, 2002 in through the existing institution of BMC and PBR. It is not sufficient to merely record the information pertaining to biological resources and TK and keep it in the PBR. There must be developed an IP strategy on how the database of such TK and biological resources can be utilized at its best value- not only economically but also culturally.

It was interesting to analyze characteristics of IPAM into the role of BMCs under the BDA and while it cannot totally fit, it is hoped that the pulse of the comparison can be felt. The researcher submits that the purpose of BMCs is totally different in terms of its documentation responsibilities, however, the concepts of IPAM comes into play in various roles in this process. There is a need to hand-pick the IPAM principles to fit the objectives espoused by the BDA, 2002 keeping in mind the sensitivities that are attached to such resources and TK for those who consider them more than just assets with potential of economic exploitation. There is scope for further research to see how such a transition can be made to make the BDA, 2002 more vibrant and implementable to the benefit of different stakeholders especially the indigenous peoples and local communities who will be most affected by it.

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[278] The Assam Biodiversity Rules, 2010, R. 25(9).
[279] TABR, *supra* note 120, R. 25(10).
[280] SUNITA, *supra* note 2, at 91.
[281] UNEP, *supra* note 37, at Preamble.
[282] UNEP, *supra* note 37, at Preamble.

ANNEXURE 1

Figure 1 Researcher during Field Visit with Mr. Bipul Das (conservationist) and Mr. Sanju (indigenous local person).

Figure 2 Researcher interviewing an indigenous person.

Figure 3 Researcher in a group picture with the Dong Committee members at the irrigation field.

ANNEXURE 2

Note: The questionnaire avoids any personal questions and keeps the responses confidential. The dissertation ensures that the Guidelines issued by the University Grants Commission and Symbiosis International (Deemed University), Pune, with respect to the research ethics and academic integrity have been strictly adhered by the researcher while carrying out this empirical study and in consonance with the same, identities of responders who have opted for the non-disclosure of their personal details, will not be disclosed at any point of time in this and post this research.

SPECIMEN QUESTIONNAIRE RESPONSE

(1)

Questionnaire for the traditional knowledge holders

Name: Shri Kendra Modahi

Age: 47

1. What is your occupation?

3 No. Dong Bund Committee Member, Adviser. (presently), Business, Social Work.

2. Have you been benefitted by the Dong Bund system in the Subankhata reserved forest?

a) YES b) NO

3. What are the benefits of the Dong Bunds?

1645 people, 16 villages for 3 No. Bund.
(1) No boring, so drinking water by filter
(2) Irrigation
(3) Kitchen Garden / Fields
(4) Rotation system to distribute water to each village based on hour / day system.

4. What value does this irrigation system have for the community (cultural/economic etc.)?

Modahi, Nepali, Rabha, Adivasi in 3 No. Bund.
Koch - Rajbongshi, General
(1) Post Flood cooperation.
construction of 25 bunds after being destroyed by floods.
(2) Compromise of disputes.
(3) Dong Puja (Animal sacrifice) - tradition to worship Pagladia by Deuri.
(4) Economic value - sustenance of community - drinking water, irrigation.

5. What kinds of biodiversity resources (birds, plant varieties, animals) exists near the Dong Bunds?

(1) Lots of Fish varieties.
(2) Migratory birds - hornbill
(3) Pigs, Tiger, Elephant, sometimes Rhino drink water
(4) Betelnut garden, golden rice.

6. How do you carry out the construction and management of the Dong Bunds?

(1) Three Trees are tied together
(2) A wooden sheet is laid down below it
(3) The above two are then tied together

④ Boulders are fitted inside it so that the structure is solidly placed in the bottom which comprises of sandbed.

⑤ Trees, branches etc. are piled upon the structure and then the river course is diverted.

⑥ The water then flows through the channels dug for the purpose of irrigation, drinking etc.

7. Do you feel the Dong Bund help in sustenance of those biodiversity resources in the region?

a) YES b) NO

8. Are you aware of the Biological Diversity Act, 2002?

a) AWARE b) UNAWARE

9. Are you aware of the Biodiversity Management Committee in your area?

a) AWARE b) UNAWARE

10. If yes, have you been contacted by the Biodiversity Management Committee?

a) YES b) NO

11. Are you aware of the People's Biodiversity Register and its benefits?

a) AWARE b) UNAWARE

12. Are there any kinds of challenges that the community is facing in preserving your traditional ecological knowledge?

① Flooding,
② Land Slides.
③ Compelled to fell trees in order to construct the Dong repeatedly as it is washed away by floods every time.

13. Do you want the Government to be involved with your efforts in preserving your traditional knowledge? If yes, what kind of assistance do you want?

① Police Station in the local area absent.
② Medical Hospital is not there
③ School (ME & High) only, no better education available
④ Bridge is broken, needs to be repaired.
⑤ Forest Beat office required to check illegal felling of trees, fishing etc.

ANNEXURE 3

RTI APPLICATION FORM

Online RTI Request Form Details

RTI Request Details :-

RTI Request Registration number	NBDAT/R/E/20/00003
Public Authority	National Biodiversity Authority

Personal Details of RTI Applicant:-

Name	ARINDAM BARUAH
Gender	Male
Address	Flat No. 301, Kazi Mansion Boys Hostel , Survey No. 235, Lane No. 6, Sanjay Park,, Viman Nagar, Pune, Maharashtra.
Pincode	411032
Country	India
State	Maharashtra
Status	Urban
Educational Status	Literate
	Above Graduate
Phone Number	+91-6363304789
Mobile Number	+91-6363304789
Email-ID	arindam[dot]ronie[at]gmail[dot]com

Request Details :-

Citizenship	Indian
Is the Requester Below Poverty Line ?	No

(Description of Information sought (upto 500 characters)

Description of Information Sought
1. Number of Expert Committees constituted by the Assam Biodiversity Board as per Rule 14 (vi) of the Assam Biodiversity Rules, 2010 and their sitting members. 2. Methods devised to ensure protection of Intellectual Property Rights over Biological Resources and associated Traditional Knowledge including systems of maintaining confidentiality of such information under Rule 14(xvi) of the Assam Biodiversity Rules, 2010. 3. Training programs planned and organized for personnel engaged for likely to be engaged in programs for the conservation of biological diversity and sustainable use of its components as per Rule 14 (xviii) of Assam Biodiversity Rules 2010. 4. Grants-in-aid and grants sanctioned to the Batabari Biodiversity Management Committee for specific purposes as mentioned under Rule 14 (xxviii) of Assam Biodiversity Rules, 2010. 5. Biodiversity Heritage sites set up in consultation with the Assam Biodiversity Board under Rule 24 of Assam Biodiversity Rules, 2010 and role assigned to the concerned Biodiversity Management Committees where such sites have been set up. 6. Number of Biodiversity Heritage set up under the Batabari Biodiversity Management Committee and the role assigned to the concerned Biodiversity Management Committee. 7. Details on the constitution of the Technical Support Group set up to lend support to Batabari Biodiversity Management Committee. 8. Details of the traditional knowledge of the Subankhata Reserved Forest recorded in the Peoples Biodiversity Register prepared by Batabari Biodiversity Management Committees as per Rule 25 of Assam Biodiversity Rules, 2010.
Concerned CPIO Nodal Officer
Supporting document ***(only pdf upto 1 MB)*** Supporting document not provided

Print Close

ANNEXURE 4

RTI REPLY FROM ASBB

ASSAM STATE BIODIVERSITY BOARD
ARANYA BHAWAN, 2nd FLOOR
PANJABARI, GUWAHATI-781037
www.asbb.gov.in

Tel- 0361- 2332278; Fax: 2333788
Email: assambioboard@gmail.com

No: ABB/RTI/2012/42/ 394

Date: 29/02/2020

From: **Public Information Officer**
Assam State Biodiversity Board,
Aranya Bhawan, Panjabari.

To: **Shri Arindam Baruah**
Flat No. 301, Kazi Mansion Boys Hostel,
Survey No. 235, Lane no.6,
Sanjay Park, Viman Nagar, Pune,
Maharashtra, PIN-411032

Sub: Request for Information under Right to Information Act, 2005.

Ref: Your online registration no. NBDAT/R/E/20/00003 dated 06/02/2020 received on 14/02/2020 by Assam State Biodiversity Board.

Dear Sir,

In inviting a reference to the above, please find the information with respect to the Assam State Biodiversity Board:

Para-1: So far, 7 (seven) Expert Committees has been constituted for various technical works of the Board.

Para-2: The registered information regarding local biological resources, traditional knowledge and IPR in the People's Biodiversity Register (PBR) are confidential and kept in safe custody with the Board and respective BMCs only.

Para-3: Training and capacity building workshops and awareness generation activities of Biodiversity Management Committee (BMC) members have been organized time to time since 2012.

Para-4: Financial Assistance for strengthening and capacity building of Batabari BMC provided during January 2019.

Para-5: The Government of Assam notified Majuli as "Majuli Biodiversity Heritage Site" during March 2017. Accordingly, a Management Committee of Majuli Biodiversity Heritage Site has been constituted during May 2017.

Para-6: Until now, 1 (one) Biodiversity Heritage Site has been declared by the Government of Assam i.e. "Majuli Biodiversity Heritage Site".

Para-7: The Technical Support Group of Baksa District has been formed by the District Administration during July 2018, which will assist the Batabari BMC.

Para-8: Refer above Para-2 and Rule 14 (xvi) of Assam Biodiversity Rule, 2010.

Thanking you,

Yours faithfully,

29/02/2020

(Public Information Officer)
Assam State Biodiversity Board