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Protection of traditional knowledge: A perspective on Intellectual Property Law in Indonesia

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Traditional knowledge (TK) has historical, cultural, scientific and economic value. Its community ownership characteristics differ from law dealing with traditional intellectual property (e.g. the TRIPS Agreement), which is characterized as individualistic, materialistic and exploitative. Such differences leave the TK possessed by developing countries, including Indonesia, unprotected. TK is often exploited by companies in developed countries to obtain an economic benefit and recognition of the knowledge as an intellectual property right (IPR) (in particular, through patents and copyright), without respect for the original community owner or considering it as within the public domain. Indonesia must protect its wealth of TK in two ways, namely: (i) starting with non-legal protection through activities tracking, preserving, promoting, documenting and digitizing TK in a manner that is easily accessible, both nationally and internationally, and establishing cooperation with the intellectual property offices of developed countries so that the documentation and digitization of Indonesian TK can become one of the comparators in examining patent and other intellectual property petitions and (ii) legal protection of such intellectual property through new *sui generis* regulations (currently being discussed in the draft law on Traditional Knowledge and Traditional Cultural Expressions).

KEYWORDS

Indonesia, protection, traditional knowledge

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1 | INTRODUCTION

In an increasingly globalized world, human relations are no longer hindered by distance, time or location. Information and knowledge technological advances are always double-edged, having both positive and negative impacts—although, if calculated, more positive than negative. One of the positive impacts of the globalization of communication is that it links individuals more easily, quickly and even instantly, without having to meet in person. Various exchanges of such information occur quickly. The interplay between nations and individuals is no longer unidirectional, but multi-directional and complex. One of the negative impacts that is occurring in Indonesia is the increasing erosion of public awareness of cultural values that have been a part of the traditional knowledge (TK) of the nation or region. However, Indonesia's cultural diversity has great potential, if it is able to be actualized, to provide a competitive advantage that could be further developed into one of the country's sources of knowledge and income.

TK is part of the cultural community. Anthropologists Alfred Kroeber and Clyde Kluckhohn posited six basic definitions of culture, namely:

- 1) Descriptive definition. Culture as a comprehensive totality of the whole arrangement of social life.
- 2) Historical definition. Culture as a legacy passed from one generation to the next.
- 3) Normative definition. There are two views, first culture is a rule or way of life that shapes patterns of behavior and concrete actions. Second, culture emphasizes the role of group values without referring to the behavior.
- 4) Psychological definition. Tends to emphasize the role of culture as a troubleshooting tool that allows people to communicate, learn or meet their material and emotional needs.
- 5) Structural definition. Wants to show the relationship between aspects apart from culture, while highlighting the fact that culture is an abstraction that is different from the concrete behavior.
- 6) Genetic definition. Seeing how the origins of that culture can exist or remain lasting. Culture is born and viewed from the interaction between humans and survives because it is transmitted from one generation to the next (Sutrisno et al., 2005, p. 9).

The cultural and intellectual heritage of traditional communities (indigenous peoples) in Indonesia consists of traditional practices and lifestyles that are unique to the general public. Various information, arts, common practices, beliefs and philosophy that are unique to each indigenous culture comprise the TK. Most TK is intellectual work that has evolved in the past and may grow in the future and be used by, and passed on to, subsequent generations (Avonina, 2006). In general, TK is passed down from generation to generation orally, through stories, legends, folklore, rituals, songs and even law (Acharya & Shrivastava, 2008, p. 440). TK refers to innovations and creations about tradition based work resulting from intellectual activity in the industrial, scientific, academic, artistic and literary contexts. Most TK has been overlooked by wealthy intellectual communities until recently. Now, it is recognized that the value of TK can be more enhanced by the use of the Intellectual Property Law regime (Idris, 2005, p. 27). WIPO, 2013 summarizes the proposed definition that is agreed upon by experts internationally:

Traditional knowledge (TK) is knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity. While there is not yet an accepted definition of TK at the international level, it can be said that: (1) TK in a general sense embraces the content of knowledge itself as well as traditional cultural expressions, including distinctive signs and symbols associated with TK, (2) TK in the narrow sense refers to knowledge as such, in particular the knowledge resulting from intellectual activity in a traditional context, and includes know-how, practices, skills, and innovations. Traditional knowledge can be found in a wide variety of contexts, including: agricultural, scientific, technical, ecological and medicinal knowledge as well as biodiversity-related knowledge (p. 4).

TK is one of the legal issues that got the world's attention, especially the developing countries. TK came into legal problems due to the lack of domestic legal instruments capable of providing optimal legal protection when such TK is widely used by parties who are not responsible for its origination. For example, the use of turmeric (*kunyit*) as a treatment by research and development institutions in India has resulted in lawsuits based on patents registered at the United States Patent and Trademark Office (USPTO). In Indonesia, some non-governmental organizations (NGOs) have questioned the validity of some patents, such as the Shiseido patents registered in Japan (some of which have been canceled by Shiseido himself, that are allegedly no different than existing TK in Indonesia (Sigit, 2002, p. 1). Due to limited data and a lack of documentation of the TK information held by Indonesia, the Japanese Patent Office (JPO) lacked a comparative document (indicating the state of the art and prior art) that would invalidate the patent for lack of novelty, and the JPO consequently granted Shiseido patent rights.

Many instances of bio-piracy have been committed by developed countries of the traditional medicine of developing countries. Through modern medical research, foreign companies conduct research to isolate and sell drugs. These foreign companies see that there are opportunities to make a profit from the commercialization of drugs that have already been discovered in developing countries and are part of their TK by conducting research to "rediscover" the drugs, and, in some cases, by rebranding the traditional drugs and selling them at higher prices (Stiglitz, 2006, p. 125). In the United States, half of the 4,000 plant patents granted by the USPTO derived from TK obtained from developing countries (Stiglitz, 2006, p. 126).

In addition, because of the concept of collective ownership in traditional Indonesian society, communities do not mind others using their TK and are highly open in providing information to any party that conducts research and development. Traditional works are created by groups in traditional communities, so there are many people who contribute labor and knowledge. The principle thus adopted is that the works belong to the public and social function. So, the creators in traditional societies do not intend to prioritize an individual's right to work it (Zen Umar Purba, 2001, p. 8).

TK can be a highly economical, valuable source of intellectual works and therefore should be protected according to international standards using Intellectual Property laws in accordance with the TRIPS Agreement, namely: copyrights and related rights, trademarks, geographical indications, industrial designs, patents, layout-designs (topographies) of integrated circuits and control of anti-competitive practices in contractual licenses.

Developing countries want to amend the WTO TRIPS Agreement to incorporate TK, but such an amendment was rejected by the developed countries who want adequately discussed at WIPO and still regarded TK as within the public domain (UNCTAD-ICRSD, 2005, p. 399). So, TK remains vulnerable to abuse by certain parties (especially individuals or companies from developed countries) that may obtain economic benefits, regardless of the interests of the community owners of the TK, because it is in the public domain, and the first creator/inventor/designer is unknown and the knowledge is collectively owned. This condition is exploited by foreign parties that can take the quintessence of TK, modify it, or specify it and mix it into a new innovation so that it can be registered as an individually owned IPR (Purwaningsih, 2015, pp. 217–218). It is no secret, many IPRs registered in developed countries originate from TK in developing countries, including Indonesia, among others:

- 1) The case of John Hardy, Ltd. (a jewelry company) centrally based in Hong Kong, versus I Ketut Deni Aryasa (a jeweler) from Bali. John Hardy had a jewelry-making factory in Bali named Karya Tangan Indah Ltd., Deni Aryasa previously worked for John Hardy but then became the head designer and share-owner of a company called Bali Jewelry. Deni Aryasa was detained in Bali and accused of copying two motifs of John Hardy jewelry, namely Batu Kali ("river stone") and Fleur ("flower"), that were designed by Deni Aryasa for Bali Jewel. Deni Aryasa and the majority of the people of Bali protested the copyright claims arguing that the motifs are part of Balinese traditional art, having been used for generations by the Balinese community. Although the motifs have never been documented or data compilation, both motifs are commonly used for decorating temples and the entrances to buildings in Bali and are present in various other pieces of Balinese artwork. During the trial, the court found that

John Hardy also already owned the copyrights for approximately 800 traditional Indonesian motifs registered in Indonesia and the United States. Denpasar District Court found Deni Aryasa not guilty in this case on the grounds that the motif that Deni Aryasa made differed in shape and texture from the motifs of John Hardy (Kusumadara, 2011, p. 556).

- 2) There were 33 foreign-party recognitions of Indonesian TK: Ancient manuscripts from Riau by the Government of Malaysia; Manuscript of West Sumatra by the Government of Malaysia; Manuscript of Sulawesi South by the Government of Malaysia; Manuscript of Southeast Sulawesi by the Government of Malaysia; Rendang from West Sumatra by Person WN Malaysia; Rasa Sayang song Sayange of Maluku by the Government of Malaysia; Dance Reog Ponorogo of East Java by the Government of Malaysia; Songs Soleram of Riau by the Government of Malaysia; Songs Injit-injit Semut from Jambi by the Government of Malaysia; Musical Instruments Gamelan of Java by the Government Malaysia; Kuda Lumping Dance from East Java by the Government of Malaysia; Piring Dance from West Sumatra by the Malaysian Government; Kakak Tua Songs of Maluku by the Government of Malaysia; Anak Kambing Saya Song of Nusa Southeast by the Government of Malaysia; Batik Parang from Yogyakarta by the Government of Malaysia; Badik Tumbuk Lada by the Government of Malaysia; Musik Indang Sungai Garinggiang of West Sumatra by Malaysia; Kain Ulos by the Government of Malaysia; Alat Musik Angklung by the Government of Malaysia; Jali-Jali Songs by the Government of Malaysia; Pendet Dance of Bali by the Government of Malaysia; Batik of Java claimed by Adidas; Sambal Bajak of Central Java claimed by a citizen of the Netherlands; Sambal Petai of Riau by a citizen of the Netherlands; Sambal Nanas claimed by a citizen of the Netherlands; Tempe of Java by a few foreign companies; Chair Park With Ornaments Typical Carve Jepara in Central Java by a citizen of the France; Frames With Typical Ornaments Jepara Carving of Central Java by a citizen of the England; Silver Craft Design Urges Suwarti of Bali by a citizen of the America; Based Products Spices and Medicinal Plants First Indonesia by Shiseido Co. Ltd.; Gayo in Aceh by multinational corporations (MNCs) of the Netherlands; Coffee Toraja of South Sulawesi by Japanese companies and Songs Bengawan Solo claimed a citizen of the Netherlands (Darisandi, 2014).

In Indonesia, TK is not specially regulated. The legal instrument on this subject is partially set in article 38 law No. 28 of 2014. To date, the article has not followed up with government regulations, however these issues need treatment soon.

The issues surrounding the protection of TK are one aspect of intellectual property championed by the developing countries, including Indonesia, that have the potential for legal protections in this field. Theoretically and practically, TK is actually very possible to protect. There are two mechanisms that can be implemented to provide legal and non-legal protection (WIPO, 2002, p. 2). A form of legal protection that efforts to protect TK is through the use of a rule of binding law, through regulations governing genetic resources, TK, recognition of indigenous peoples and customary law.

Protection of TK through the IPR regime would protect the results of intellectual creations derived from TK, which are not protected because they are often regarded as a part of cultural heritage and consequently open and accessible to anyone.

Seeing the importance of legal protection of TK for Indonesia makes it have a strategic value. The strategic value can be viewed in cultural, economic and social terms. Indonesia has a rich, diverse culture that is well-known internationally, through its works of art, customs, social systems, medicine and so forth. Examples these works include the Special Region Yogyakarta's famous batik and wayang, Madura's science drug, or Bali's with exotica engraving. Such works need legal protection in order for the national culture, which is a national asset, to be preserved and become a legacy handed down to the next generation, and to be utilized for the benefit of the nation and the state. In regard to social protection of TK, the protection of TK naturally maintains and preserves social values. The government can no longer be indifferent to the existence of TK possessed by the people of Indonesia. It is precisely this that further spurred the government to further explore and continue to identify the existence of TK that exists throughout Indonesia. In terms of economic value, in addition to maintaining and preserving cultural and social values that arise from TK, the value is in something (the information) that cannot be separated from the TK, thus requiring

legal protection. The optimum utilization would have added value to the community and increase prosperity. It is quite logical considering that the exploitation of TK has not worked in a professional and yet provide economic benefits for the community owners (Riswandi & Syamsudin, 2004, pp. 39–40).

Articles like to explain the concept of legal protection and utilization of Indonesian TK through the perspective of Intellectual Property Law, where there is a contradiction between the traditional culture of the community, which is collective/communal (wealth together) and the characteristics of Intellectual Property Law which tend to be individualistic (private) and exploitative (economic).

2 | PROTECTION OF TK IN NON-LAW PERSPECTIVE

Non-law protection of TK is non-binding in nature. Examples include, among others, the code of conduct adopted by international convention and defined by a particular community, made up of both the professional community and the public who are concerned about the existence of the TK. Protection of the TK and cultural heritage of Indonesia is not sufficient simply through legislation. Processes for documentation, compilation of a database and preservation are more important to Indonesia to protect TK from extinction. If already extinct and no longer practiced by the community, then the TK and heritage has also lost the opportunity for legal protection.

Indonesian culture is in the public domain (Kusumadara, 2011, pp. 28–29). Consequently, Indonesia cannot prevent others from using the TK and cultural heritage of Indonesia. Non-legal safeguards consist of:

1) Tracking of TK

TK can be tracked by central and local governments, universities and NGO. Local government can more properly undertake tracking efforts (search, research) due to the wealth of TK owned by each region. The results are then compiled nationally by certain institutions (e.g. Ministry of Education and Culture, Ministry of Tourism and Creative Economy). However, this has never been done. The province of Bengkulu produced 137 ordinances on traditional medicine in the form of manuals, but to date have not compiled them nationally and have not done the digitization (Ministry of Education and Culture, Directorate General of Culture, the Directorate of History and Traditional Values, 1986/1987). In the draft law, Protection and Utilization of Intellectual Property Traditional Knowledge and Traditional Cultural Expressions, tracking activities have been accommodated in article 5. The government is obliged to conduct data collection and documentation of TK and traditional cultural expressions throughout Indonesia, which can be organized by universities, research institutes and other concerned parties (Republic of Indonesia, 2015).

2) Preserving of TK

Conservation of TK is an important part of embedding social relations and establishing the existence of a community or region. Owners of TK necessarily identify things that are unique, valuable and considered important in order to determine the TK that must be defended and practiced in social life. Preservation also means maintaining the existence of the TK as well as acting as a public announcement that the TK is owned by the community concerned. Preservation of TK is actually the protection of TK itself. There are at least three reasons for the importance of TK utilization among other things: (i) TK has economic value that will bring benefits if used appropriately and correctly; (ii) utilization aimed at preventing the further actions undertaken misappropriation biopiracy and developed countries and (iii) TK is the cultural identity of a nation, so utilizing TK means to preserve the culture of Indonesia (Aryanto, 2014, p. 306).

3) Promotion of TK

As a legacy of the past, a lot of TK is lacking relevance today. Therefore, it needs to be developed through research and used as an initial step in creating/finding how to make the information work better, be more useful, and have a positive impact on the owner community and Indonesia. The promotion and utilization of TK can be conducted in cooperation with the local community, companies, researchers and the central and local governments. Indonesia could model its system on the New Zealand Maori's cooperation with the Cancer Genetics Research Team from the

University of Otago. Maori communities provided information about traditional drug knowledge to the researchers, and the researchers were able to find and patent a drug formula to treat cancer. The Maori received an economic gain (benefit sharing) and were supported by the New Zealand Gastroenterologist Association and New Zealand Health Research Council (Sardjono, 2006, pp. 23–24).

4) Documentation and Digitization of TK

Documentation as a form of defensive protection is a database of TK that can serve as prior art. As Indonesia has done that with its digital library (Traditional Knowledge Digital Library [TKDL]), the digital library can be used to prevent the granting of patents based on observations of prior art (Zen Umar Purba, 2011, p. 163). Documentation (in the form of books, articles, movies, audio, images, photographs, manuscripts, writings scientific or notes made by the public or the government) is very important for the Indonesian NGO community and for those opposing a patent or other type of intellectual property application, as the documentation can serve as a prerequisite filed to allege a patent's invalidity if it is believed to have used Indonesian TK illegally (Sardjono, 2006, p. 285). The downside of the Indonesian documentation system is that the country has not yet completed the data collection (documentation) on TK, cultural expressions and genetic resources. The downside of Indonesia, is not yet completed the surveys (documentation) on TK, cultural expressions and genetic resources, so that it becomes an excuse for developed countries to not acknowledge ownership of TK. The reason is, how other countries are required to admit the existence of TK, cultural expressions and genetic resources of Indonesia, whereas no complete documentation (database) and can be accessed internationally. Brazil and India have made a complete documentation and used as a comparison (prior art, state of the art) for other nations in processing an application for IPRs (the Permanent Representative of the Republic of Indonesia [PTRI], 2004, p. 4). In 2001, the Government of India built the TKDL as a repository of 1,200 various formulas in the Indian system of medicine, such as Ayurveda (500 formulas), Unani (500 formulas) and Siddha (200 formulas), as well as 1,500 yoga postures (asanas). It has been translated into five languages (English, German, French, Spanish and Japanese) (CSIR-Traditional Knowledge Digital Library Unit, 2001). India also has, in cooperation with the European Patent Office (EPO), the United Kingdom Intellectual Property Office (UIPO) and the USPTO, the German Patent and Trade Marks Office (GPTMO), IP Australia, the Federal Department of Economic Affairs of Switzerland on Intellectual Property, attempted to prevent the granting of unauthorized IPRs by giving international patent office examiners access to use the TKDL database as comparative data in the examination of the registration application (IP India, 2016). While the intellectual wealth of Indonesia may be seen on websites including <http://budaya-indonesia.org>, <http://www.wisatamelayu.com>, <http://databudaya.net>, <http://indoplasma.or.id>, documentation must be completed again, be compiled in a government website and be disseminated nationally and internationally. Documentation obligations of the government have been accommodated in article 5 (Republic of Indonesia, 2015).

3 | PROTECTION OF TK ON THE INTELLECTUAL PROPERTY OF LAW PERSPECTIVE

Intellectual property protection is based on positive law, which attempts to protect TK in a legally binding form, for example: IPR law; the rules governing the issue of genetic resources, in particular TK; treaties; recognition of indigenous peoples; and customary law once customary rights. Protection of TK through the IPR regime is intended to protect the rights of the results of intellectual creations. The purposes of this effort are as follows:

- 1) To encourage the creation of new intellectual works (based on the law copyrights, patents and industrial designs).
- 2) To disclosure new intellectual works (based on patent law and industrial design).
- 3) To facilitate market order through the elimination of confusion (policy based on the law of trademark and geographical indication) and unfair competition actions.

- 4) To protect closure of information from users who are not acting in good faith (Riswandi & Syamsudin, 2004). Some countries have made laws to protect TK. Pattern settings used, include setting and enacting legal protection for the TK of indigenous peoples, such as medicinal knowledge. In the world, there are three patterns done in protecting TK. First, protection through law protection of indigenous peoples, including medicinal knowledge. Implemented by the Philippines. Second, the protection of TK is part of the biological protection legislation. Implemented by India, Portugal, Peru and Malaysia. Third, a special law on the protection of TK of medicines, implemented by China and Thailand (Daulay, 2011, pp. 109–110).

Currently in Indonesia, normative TK has been arranged in part in several laws, among others:

- 1) In the Copyrights laws (Republic of Indonesia, 2014), article 38 which reads:
 - (a) Copyright on traditional cultural expressions held by the State.
 - (b) The State shall inventory, maintain and preserve cultural expressions traditionally referred to in number (1).
 - (c) The use of traditional cultural expressions as referred to in number (1) shall pay attention to the values that live in the community.
 - (d) Further provisions regarding Copyright that are held by the State on traditional cultural expressions as referred to in number (1) shall be Government regulations.
- 2) In the Protection of New Varieties Plants Laws (Republic of Indonesia, 2000), articles 7–8. Article 7, Paragraph (1) reads: Local varieties belong to the people ruled by State, and are controlled by the State referred to in paragraph (1) implemented by the Government.
- 3) In the Conservation of Biological Resources and Ecosystem Law (Republic of Indonesia, 1990), articles 21–22, related to the prohibition for anyone issuing a protected plant or its parts alive or dead from somewhere in Indonesia to other places inside or outside Indonesia, except for the purposes of research, science and or rescue of flora and fauna is concerned. Including the setting of usage for plants and wildlife through (i) study, research and development; (ii) breeding; (iii) hunting; (iv) trading; (v) demonstration; (vi) exchange; (vii) cultivation medicinal plants and (viii) maintenance for pleasure.
- 4) In the Trademarks and Geographical Indication (Republic of Indonesia, 2016a), referred to under article 53–71. Geographical indications are protected after enrollment, through a petition may be filed by: (i) an institution that represents the community in a given geographic region that seek goods and/or products; (ii) the provincial government or the district/city. Geographical indications are protected for the maintenance of the reputation, quality, and characteristics that form the basis of protection given geographical indication on a product. The law also regulates the indication of origin. Indications of origin are protected without registration obligations (declarative) and taken as a sign that shows the origin of goods and/or services properly and used in trade which is characteristic of the origin of goods and/or services that are not directly related to natural factors. article 70 obliges the central government and/or local governments conducting activities to protect geographical indications, such as: (i) preparation for the fulfillment of the requirements to enter geographical indications; (ii) apply for registration of geographical indications; (iii) the utilization and commercialization of geographical indications; (iv) socialization protection of geographical indications to the public; (v) the mapping and inventory of potential products of geographical indication; (vi) training and mentoring; (vii) monitoring, evaluation and development; (viii) provide legal protection and (viii) facilitate the development, processing and marketing of goods and/or products of geographical indication.
- 5) In the Patents Law (Republic of Indonesia, 2016b), contained in article 26 states that if the present invention relates to and/or derives from the genetic resources and/or TK, it should be clearly stated, and the true origin of genetic resources and/or TK should be in the description of the patent application (disclosure of origin [DO]). Additionally, the inventor shall share the results and/or access to the genetic resources and/or TK in accordance with the

legislation and international agreements in the field of genetic resources and TK. This provision also seeks that the genetic resources and/or TK held by Indonesia are not recognized by other TK countries while supporting Access Benefit Sharing (ABS).

Such arrangements are not yet strong enough to protect such wide-ranging TK. Some form of IPR legislation should regulate this issue, whether it be from the aspects of patent, trademark (geographical indications), industrial design, protection of plant varieties and trade secrets, or *sui generis*. According to the Authors, Indonesia should use a *sui generis* regulatory model (through legislation on the protection of TK. Provisions should adopt the principles of Access and Benefit Sharing (ABS), DO and Prior Informed Consent (PIC) as intellectual property filing requirements for registration if it relates to TK, genetic resources and Indonesian cultural expression (Irawan, 2011, pp. 304–307).

The concepts of ABS, DO and PIC are not derived from the concept of intellectual property; even the TRIP Agreement does not mention anything about them. The concepts instead come from conventions and international institutions associated with the environment, health, food and agriculture and IPRs, among others: the Convention on Biological Diversity (CBD) in 1992; the UN Convention to Combat Desertification (UNCCD) in 1994; the Primary Health Care Declaration of Alma Ata in 1978 which was adopted by the WHO, in particular the WTO Doha Declaration of 2001; the UNCCD Conferences on Development (UNCTAD) in 2000 and 2004; the International Undertaking on Plant Genetic Resources (IUPGR) 1983; the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, TK and Folklore 1998–2000 and the International Union for the Protection of New Varieties of Plants (UPOV).

ABS is the concept of the sovereignty of a country concerning the ownership, management and utilization of genetic resources that are within its jurisdiction. A country has the authority to determine access to genetic resources within its jurisdiction, has the obligation to take appropriate measures regarding the purpose in using genetic resources, and to decide whether to share the benefits of genetic resources. Genetic resources include plants, animals and micro-organisms that can be used for some purpose (e.g. basic research, product commercialization), while users of genetic resources (user) include: research institutes, universities and private companies (e.g. venture pharmaceuticals, cosmetics, agriculture, horticulture and biotechnology). Examples of the benefits derived from genetic resources include research results and genetic resources development, the transfer of technology which utilizes the genetic resources, participation in biotechnological research activities and/or the economic benefits of commercialization of genetic resources (e.g. patent royalties from products) (CBD COP VI/24, 2002). When TK is used as a guide in conducting research, it saves substantial cost for the company because the company does not start from zero, and it also shortens the time for profiting from an intellectual property product. The concept is reasonable if the owners of the TK get the benefit sharing of the companies (Tustin, 2006, p. 131).

DO is a necessity for those who apply for IPRs by requiring them to uncover the source initially associated with the genetic resources and TK (WIPO, 2004). The concept of PIC is used in research activities in which researchers interact with community leaders or individuals in traditional communities who act as informants to get information or data. This concept then evolved from an informal to formal nature as a result of the many activities of bioprospecting and access to genetic resources, and fair compensation for the public owner/keeper of genetic resources. The Convention Biological Diversity of 1992 (CBD) set in article 15 that anyone who wishes to gain access to previous genetic resources must obtain the consent of the parties providing access to the genetic resources, which was reaffirmed in the Conference of the Parties (COP, 05.06.1997). The United Nations said access to TK and customary practices of local communities should be subject to the approval of the owner (Berlin & Berlin, 2002). Protection of TK and fulfillment of economic and social rights of owners also relate to the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights. This is true both in the context of defensive protection that aims to prevent claims of third-party rights, and in the context of positive protection aimed at keeping outsiders from making commercial products out of materials derived from TK (Haugen, 2005, pp. 66–77; Haugen, 2014, p. 87).

The concept becomes important when a number of intellectual property applications (particularly patents) that are filed in developed countries are originally derived from TK (WIPO, 2001, p. 25) and genetic resources originating from developing countries—actions that can be categorized as theft (biopiracy) and utilization cheating (misappropriation) of TK and genetic resources, including those emanating from Indonesia. For example, forty patents listed by Shiseido in Japan use medicinal plant materials that originated in Indonesia, such as brotowali, gondopuro breadfruit leaves, bitter, chili Java and others (although a portion of the patents were canceled by Shiseido himself, despite no objections from Indonesia) (Subagyo, 2002, pp. 2–7). One possible reason is that TK, genetic resources and cultural expressions have yet to be recognized internationally and nationally as prior art or as stating the art (as in literature and non-literature Intellectual Property) in the Intellectual Property legal system, except in the Copyright Act.

Indonesia can make all the rules in Intellectual Property Law rules to establish TK, genetic resources and literary cultural expressions as IPR/non-IPR literature to be used as a comparison document (defensive protection) in the examination of applications. The purpose of the arrangement is: (i) prevention of erosion and loss of tradition (the preservation of traditions); (ii) prevention of unauthorized exploitation; (iii) encouragement of innovation and creativity based on TK; (iv) protection from abuse, distortion and other adverse actions; (v) protection of cultural and biological diversity conservation and (vi) protection against dignity and moral rights of traditional innovators and creators (WIPO, 2001, p. 70). Indonesia has incorporated the principles of ABS, PIC and DO. The ABS and PIC principles, contained in article 7, require each party seeking to take advantage of the TK and expressions of Indonesian culture to apply for permission by writing, in an Indonesian language, to the government. The application shall be to: (i) permit access utilization; (ii) the utilization of the agreement between the applicant and the custodian of knowledge traditional and traditional cultural expressions; (iii) description/explanation utilization load (TK and traditional cultural expressions that will utilized, custodians of TK and/or traditional cultural expressions, utilization in place and/or abroad, utilization purpose, shape and concept of utilization and period of utilization); (iv) evidence citizenship applicants; (v) proof of the validity of a legal entity, in case the application filed by a legal entity; (vi) a special power of appointment power to apply and (vii) proof of payment of the fee (Republic of Indonesia, 2015). Article 14 requires that the parties share some of the mandatory utilization the results of the use of the custodians of TK and expressions of culture traditional. Utilization of revenue sharing is determined by agreement, paying attention to decency and fairness. The DO principle contained in articles 3 and 20 paragraphs (2) and (3), threatens any person or entity utilizing the knowledge without access permissions or a utilization agreement, as well as those not clearly stating the origin of the area or communities that are the source of the TK and traditional cultural expressions, with a conviction and imprisonment of two years and/or a maximum fine of Rp. 3,000,000,000 (three billion rupiah). Any person or legal entity who deliberately uses the information in an inappropriate, distorted and untrue manner, or that makes the community feel offended, humiliated or despicable, shall be punished by a maximum imprisonment of two years and/or fines of at most Rp 3,000,000,000 (Republic of Indonesia, 2015).

4 | CONCLUSION

In accordance with the characteristics of TK in the communities, TK should be protected first from a non-legal standpoint, namely: through tracking activities and the preservation, promotion, documentation and digitization of TK, which is easily accessible nationally and internationally. Indonesia also should establish cooperation with the intellectual property offices of developed countries to use the documentation and the digitization of Indonesian TK Indonesia as one of the comparisons in examining patent applications and other intellectual property before granting rights to the applicant. From the perspective of Intellectual Property Law, the most appropriate choice is *sui generis*. As a first step, the government has proposed the bill on TK and Traditional Cultural Expressions. It is the author's hope that this draft legislation will soon be discussed by the Council Representatives of the Republic of Indonesia and will be passed into law and implemented consistently.

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