



## The legal protection of intellectual property rights toward the maritime scientific researches in Indonesian seas

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**Abstract.** Indonesia is one of the maritime nations that have a vast diversity of marine natural resources, both mineral and genetic resources. With this predicate, Indonesia has always been one of the destinations and the axis of maritime-based research. This matter attracts attention from other countries and foreign agencies to carry out scientific research activities in Indonesian sea territories. If reviewed as a whole, the implementation of scientific research is not accompanied by adequate supervision and ineffective legal regulations. Scientific research results are often used for business activities or commercial purposes of other countries with no benefit for Indonesia. The legal issue that arises here is the legal protection of intellectual property rights in maritime scientific research in Indonesia. The results of this research will provide an overview of the legal protection of intellectual property rights issues related to maritime genetic resources in Indonesian sea.

**Key Words:** legal protection, intellectual property rights, scientific research, maritime genetic resources.

**Introduction.** Indonesia is a maritime nation where two-thirds of its territory is the sea, which comprises marine resources such as marine genetic resources and marine industry (Hardyanto 2016). Nowadays, in the global era, the maritime sector plays an essential and strategic role, both in political, economic, social, and security, as well as activities related to inter-island and inter-state relations, particularly concerning national and international trade (UNCTAD 2019). Growth in the volume of international trade has demanded the development of the maritime sector to operate effectively and efficiently to compete with other countries.

Marine Scientific Research (MSR) can be defined as “a variety of scientific disciplines, such as biology, biotechnology, geology, chemistry, physics, geophysics, hydrographic, physical oceanography, and ocean drilling and coring, which are dedicated to the study of oceans, marine flora, fauna, and physical boundaries with the solid earth and the atmosphere” (Pavliha & Gutierrez 2010). This kind of research is carried out in the purpose of “to observe, to explain, and eventually to understand sufficiently well how to predict and explain changes in the natural (marine) world” (Wegelein 2005) that is important and affect in many fields of the relationship between man and the sea.

MSR was not regulated under any international law instruments until the 1950s. But due to the increasing development in scientific research in the oceans and technology after World War II, the international community then started to develop and codify the international legal framework in the matter of scientific research in the oceans (United Nations 2010). Then in the Convention on the Continental Shelf (one among the four 1958 Geneva Conventions concerning the Sea), there is a specific section that regulates marine scientific research. This specific section is in Article 5 Paragraph (8) that states: “the consent of the coastal State shall be obtained in respect of any research concerning the continental shelf and undertaken there. Nevertheless, the coastal State shall not normally withhold its consent if the request is submitted by a qualified institution with a

view to pure scientific research into the physical or biological characteristics of the continental shelf, subject to the proviso that the coastal State shall have the right, if it so desires, to participate or to be represented in the research, and that in any event the results shall be published". This provision became the basis of the development of the regime for maritime scientific research contained in the 1982 United Convention on the Law of the Sea. Thus this research intended to analyze the legal protection of intellectual property rights (IPR) towards the Maritime Scientific Researches in the Indonesian seas.

**Material and Method.** This normative juridical research used a statute approach and conceptual approach. The statute approach used to research, explore, and analyze various international and national legal instruments governing the legal protection of IPR towards maritime scientific researches in the Indonesian seas. Furthermore, a conceptual approach is used to better understand the concepts of the doctrines and teachings that develop in the legal regime of IPR protection so that they can become a foothold in resolving the legal issues at hand. These doctrines and teachings will clarify and provide legal understandings, legal concepts, and legal principles relevant to the problem being discussed. A conceptual approach was used in this research to be able to understand various legal doctrines and concepts that developed in the IPR protection legal regime, both in the realm of international law and national law (Ibrahim 2006).

Data studied in this research is secondary data consisting of primary and secondary legal material. Primary legal material consists of various legal instruments, both internationally and nationally, concerning IPR and maritime scientific researches. And the secondary legal material consists of books, documents, research results, and journal articles concerning the research topic. The data compiled through library research, in order to select secondary data, is then arranged systematically and logically so that the legal material linkages appear to provide a general picture of the research results (Fajar & Achmad 2010).

**Results and Discussion.** The constellation of legal protection for the results of maritime research or marine-based research in Indonesian territory is more prioritized for the protection of genetic resources or by-products (Hubert 2015). Optimizing the legal protection of the research is more emphasized on the protection of the form of genetic resources themselves as well as the conservation of environmental protection settings (Hubert 2015). Concrete forms of research in the field of maritime almost all have a relationship with genetic resources. Many of these uses of maritime scientific research are aimed more at pharmaceuticals and biotechnology. The axis of protection is more emphasized on the element of IPR and the element of environmental policy.

Legal protection from the perspective of IPR is more focused on protection in the form of Patents and Protection of Plant Variety. This matter is used to protect and suppress the bio-piracy of genetic resources and traditional knowledge carried out by foreign parties when conducting maritime research in Indonesia (Hubert 2015). The fact that the existence of bio-piracy and misappropriation of genetic resources is evidenced by the registration of inventions (patents) by some countries such as in Japan for some genetic resources over the property of Indonesia (Sardjono 2006). The urgency of protection in the corridor of IPR is qualified in legal instruments both at international and national levels.

Below are the legal instruments at the international levels:

1. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Article 27 Paragraph (3) on the TRIPS Agreement stated that microorganisms that either already exists in nature or are genetically modified are patentable subject matter. In this article, it is alleged that TRIPS emphasizes that it is possible to grant patents for all forms of genetic material (including derivative products). This legal instrument is still considered weak and does not provide integral protection, or in other words, only provides partial protection. This means that TRIPS does not regulate technical points that do not regulate discovery protocols (inventions) originating from genetic resources but only accommodate scientific findings, which in this case are categorized as a patent. The

weakness of this TRIPS is that it does not provide technical arrangements for how patents on plant varieties and genetic resources are obtained.

But on the other side, Article 27 Paragraph (1) regulates with regard to the granting of patents for each invention, both products and processes in all fields of technology insofar as the invention can be applied or applied in industry. Article 27 Paragraph (1) of this TRIPS is then revoked into the Indonesian National Legal Order, precisely applied to the Law Number 14 of 2001 on Patents.

2. World Intellectual Property Right Organizations (WIPO). WIPO does not explicitly regulate the protection of maritime research results based on genetic resources. The axis of legal protection in this WIPO is emphasized more on the definition and character elements of material genetic. This emphasis on material genetic is more concentrated on material genetic resources of plants both on land and at sea (WIPO 2020). WIPO defines what is meant by material genetic here is "any plant material, animal, microbial or other origin containing functional units of heredity". The wider "functional units of heredity" is clarified as "all organisms and biochemical extracts from tissues containing deoxyribonucleic acid (DNA) or for certain cases of ribonucleic acid (RNA) such as genes, plasmids and so on (Setyowati et al 2005).

In technical terms, WIPO provides general limitations related to the definition of a patent. According to Article 27 of the Agreement on Trade-Related Aspects of Intellectual Property Rights patent is defined as a patent is legally enforced right granted by virtue of the law to exclude, for a limited time, other than from act in relation to describe new invention; the privilege is granted by a government authority as a matter of right to be the person who is titled to apply for it and who fulfills the prescribed conditions. The point of legal protection that can be drawn in WIPO is that basically the results of maritime-based research products will contain scientific findings where it can be qualified as an invention (scientific findings); therefore a preventive measure is needed in the form of registration of inventions using the patent method.

3. Convention on Biological Diversity, 1992 (CBD Convention). The axis of protection at the CBD convention emphasizes more on the sovereignty of a state that is legitimately enforcing and managing genetic resources originating from its state. The legal basis found in Article 3 of the CBD explains: "states have, in accordance with chapter of the United Nations and the principles of International law, the sovereign right to exploit their own resources pursuant to their own environmental policies and the responsibility to ensure activities within their jurisdiction".

The element of Article 3 of the CBD further legitimizes that the state has the authority to utilize natural genetic resources. Furthermore, in Article 8 point (j) of this convention, it also establishes and determines that each state, whether a participating state or not, must respect and participate in preserving traditional knowledge, habits that live in local communities in a state to maintain conservation and sustainability of biological resources.

Furthermore, based on Article 15 Paragraph (1), the CBD provides recognition of the sovereignty of the state as an authority to determine access to genetic resources in the state's territory based on the laws and regulations in force in the state where these genetic resources originate. CBD also created the concept of Access Benefit Sharing, which is an appropriate and fair profit-sharing system for the use or joint management in processing of genetic resources between owner countries, and countries that have conducted maritime research within the owner country. This relationship was allegedly able to provide balanced benefits. The essence of legal protection, according to Article 15 Paragraph (1) shows that the full authority of the state to determine the granting of research access to genetic resources is in the hands of the government and depends on the applicable state law. This arrangement does not mean limiting access but rather making requirements that facilitate access to genetic resources for sustainable and environmentally friendly use (Stoll 2009; Glowka 1999).

Based on Article 15 Paragraph (4) the CBD further explains that the granting of access to genetic resources is in consensus or mutually agreed to regulations. The

concrete form in Article 15 Paragraph (4) is further projected into a conventional form in the form of a joint access agreement between the state parties.

On a national scale, the Government of Indonesia has also ratified the CBD, which implemented in Law No. 5 of 1994 on the Ratification of the United Nations Convention on Biological Diversity.

4. Nagoya Protocol on Access to Genetic Resources and the Fair Equitable Sharing of Benefits Arising from Their Utilization to the Convention Biological Diversity, 2010 (Nagoya Protocol). Nagoya Protocol is an embodiment and refinement of manifestations of Article 15 Paragraph (1) of CBD, where this protocol is more conceptualized with regard to the mechanism points of the utilization of biological resource wealth originating from plants, animals, and microbiology for industrial products, cosmetics, medicines, and other needs. This instrument is very protocol in applying the principle of balanced distribution of benefits arising from the use of the CBD.

The core of this protocol provides rules that open access to biological resources to be used together. This collective agreement in the management of biological resources is expected to be realized transparently so that piracy of biological resources (bio-piracy) can be prevented or suppressed as much as possible.

Article 6 Paragraph (2) and Paragraph (3) of this protocol states the sovereign right of the state to take legislative, administrative and policy actions in accordance with national law to regulate access to genetic resources and traditional knowledge. The Nagoya Protocol imposes an obligation on a state to give recognition of the existence of indigenous peoples, their rights, and customary law, which regulates access to traditional knowledge related to genetic resources as long as they are in accordance with national legal instruments. The application points of this article are more empathetic to the certainty of Information-Based Consent or Prior Informed Consent.

Based on Article 7, it is stated that the state is obliged to take legislative, administrative, and other policies taken accordingly to ensure that traditional knowledge is accessed based on the Prior Informed Consent and Mutual Agreed Terms.

Pursuant to Article 12 further explains the detailed points regarding the mechanism of utilizing traditional knowledge and granting access to biological resources. Article 12 further instructs the state in managing arrangements regarding Access and Benefit Sharing.

The legal instruments at the national levels are as follows:

Law No. 13 of 2016 on Patents. Legal protection for maritime research on a national scale is projected in the majority in the Patent Law. As a state is known as mega biodiversity labeling, the design and construction of the Law No. 13 of 2016 also accommodate IPR protection based on genetic resources and their derivatives. The new regulation on patents in this instrument also adopts basic provisions in TRIPS and CBD, which have the motivation to provide protection and recognition for indigenous peoples, traditional knowledge, and genetic resources.

Law No. 13 of 2016 clearly regulates the requirement for disclosure in a clear, true, and correct manner regarding genetic resources and/or traditional knowledge in the Patent description. Based on Article 26 Paragraph (1) of the Law No. 13 of 2016 on Patents states that "If the invention relates to and/or comes from genetic resources and/or traditional knowledge, it must be clearly and correctly stated the origin of genetic resources and/or traditional knowledge is in the description."

Based on this description, this shows that Indonesia established regulations on the sovereign rights of states over ownership of genetic resources as mandated in the 1992 Convention on Biological Diversity. Furthermore, the explanation of Article 26 Paragraph (1) of the Law No. 13 of 2016 on Patents states that the reason for mentioning the origin of genetic resources and/or traditional knowledge in the description so that genetic resources and/or traditional knowledge are not recognized by other states and in the context of supporting Access Benefit Sharing (ABS). This provision was born in line with the Nagoya Protocol as a follow-up to Article 15 of the CBD. The Nagoya Protocol is an "Access and Benefit Sharing Regime" to determine arrangements regarding how genetic

resources can be accessed and what benefits are generated and can be shared between individuals, states or other bodies, arrangements at the national, regional and global institutions.

Article 132 Paragraph (1) of the Law No. 13 of 2016 on Patents states that "Elimination of Patents based on court decisions as referred to in Article 130 letter b shall be made if: "... (b) Patents originating from genetic resources and/or traditional knowledge do not meet the provisions referred to in Article 26." This means that patents that have been registered can be written off through a court decision if the patent relates to and/or comes from genetic resources and/or traditional knowledge, which does not clearly and correctly state the origin of genetic resources and/or traditional knowledge mentioned in the description.

Law No. 18 of 2002 on the National System of Research, Development, and Application of Science. Article 17 Paragraph (4) of this act stated that in conducting research in Indonesian territory, foreign researchers who wish to conduct research must obtain written permission from the Governmental Authority. The full sentence of Article 17 Paragraph (4) of the Law No. 18 of 2002: "Foreign universities, foreign R&D institutions, foreign business entities, and foreigners who are not domiciled in Indonesia who will conduct research and development activities in Indonesia who will carry out research and development activities in Indonesia must obtain written permission from the authorized government agency."

The explanation of Article 17 Paragraph (4) of the Law No. 18 of 2002 states: the purpose of the special permit of this foreign researcher is to avoid doing: (a) activities that result in the state's biological and non-biological assets being used irresponsibly by foreign parties, and (b) activities which has the potential to cause epidemics, damage environmental functions, social disturbances, or other harmful disturbances. Every permit application requested to the competent government agency must go through an assessment that takes into account and considers the benefits of science and technology, foreign relations, environmental sustainability, politics, and defense, as stated in Article 4 Paragraph (2) of the Government Regulation No. 41 of 2006 on the Licensing for Research and Development Activities for Foreign Universities, Foreign Research and Development Institutions, Foreign Business Entities, and Foreigners. In terms of research included in the high-risk and hazardous category in the field of maritime affairs and fisheries, government agencies authorized is the Ministry of Maritime Affairs and Fisheries (the explanation of Article 3 Paragraph (2) of Government Regulation No. 48 of 2009 on Licensing for the Implementation of Research, Development and Application of Science and Technology which is at High Risk and Dangerous).

Furthermore, Article 22 of the Law No. 18 of 2002 clearly explains that the Government regulates licensing for the implementation of research, development, and application of high-risk and dangerous science and technology by taking into account national standards and internationally applicable provisions.

Law No. 5 of 1990 on the Conservation of Biological and Ecosystem. This act enacted to ensuring sustainable use of biological resources which requires first and foremost the recognition of the fact that biological resources must be exploited in ways that allow them to maintain their productive capacity and protective function. Article 36 stated that "utilization of wild species of plants and animals may be carried out in the following forms: a. species analyzing, research and; b. breeding; c. hunting, d. marketing; e. exhibition, f. species exchange; g. culture of medical plants; h. hobby". Further provisions related to the utilization of wild species of plants and animals regulated in Article 4 Government Regulation No. 8 of 99 on the Utilization of Wild Species of Plants and Animals that "assessment, research and development can be done to protected and not protected species plants and animals. Protected animals used for research and development must obtain an official permit from Indonesian authority (Ministry)".

Free trade encourages rapid technology development that makes inter-countries interconnected, integrated, and harmonious to increase the competitiveness of each

country in the global area. Indonesia is certainly one of the countries that have often been used by domestic and foreign inventors to produce discoveries, as a country that has a wealth of marine genetic resources. Such research programs can result in the transfer of Indonesian genetic resources abroad. This is more felt after the international world echoes patents, and it is seen that some genetic resources belonging to Indonesia have developed and are owned by other countries.

Initially, genetic resources were public property, so every state or researcher could be accessed freely without any legal rules or standards regarding the protection of genetic resources. After Indonesia ratified The Convention on Biological Diversity through the Law No. 5 of 1994 concerning Protection of Genetic Resources which is regulated in Article 8 paragraph (j)) and Article 15 paragraph (1) regarding "recognizing the state's power over its natural resources," the power to determine access to genetic resources rests with the government and depends on the applicable state law.

The existence of genetic resources as national assets has been reflected through various national provisions, such as the Law No. 5 of 1960, the Law No. 6 of 1995, the Law No. 41 of 1999, the Law No. 18 of 2004, the Law No. 31 of 2004, the Law No. 4 of 2006 and the Law No. 32 of 2009. In this regard, the genetic resource is a national asset that has economic values and benefits for Indonesia in the future, and its existence will be vital for the national resilience framework.

Researcher(s) from other countries are welcome to do research in Indonesia. Following the Indonesian regulation (Government Regulation No. 41 of 2006), all foreign researchers doing research activities in Indonesia must obtain an official permit from the Indonesian authority in advance.

Ministry of Research, Technology, and the Higher Education Republic of Indonesia stated that the number of foreign research permits was increased significantly in 2000 and 2010 for 547 permits, 2013 for 546 permits, 2012 for 544 permits, and October 2016 for 422 permits. The highest numbers of foreign researchers come from the United States, Japan, Germany, France, England, China, Australia, Netherland, Canada, and Swiss. Foreign researchers are interested in researching some areas, including marine (LIPI 2014).

In order to respond to this phenomenon, the Indonesian government directed to publish policies related to the use of technology in the production sector to improve the national economy and respect for domestic technology. The strength of Indonesia as a country with a wealth of marine genetic resources makes Indonesia have a powerful bargaining position. For this condition, the implication for Indonesia is the implementation of an appropriate system of IPR to provide clear boundaries for domestic and foreign inventors to use marine genetic resources to produce discoveries.

At this time, Indonesia already had IPR regulation regarding the protection of marine genetic resources; it is the Law No. 13 of 2016 on Patents that are sufficiently adequate with the provisions as required in the TRIPs Agreement.

Under Law No. 13 of 2016, the invention is the main point for the protection. The invention can be defined as a term which refers to the activity of creating new forms, compositions of matter, devices, or processes, or to the products of its activity. Law No. 13 of 2016 clearly regulates the requirement for disclosure in a clear, true, and correct manner regarding genetic resources and/or traditional knowledge in the Patent description. Article 26 Paragraph (1) of the Law No. 13 of 2016 on Patents states that "If the invention relates to and/or comes from genetic resources and/or traditional knowledge, it must be clearly and correctly stated the origin of genetic resources and/or traditional knowledge is in the description." Based on that, it shows that Indonesia established regulations on the sovereign rights of states over ownership of genetic resources as mandated in the 1992 Convention on Biological Diversity in Article 3 of the CBD explains: "states have, in accordance with the chapter of the United Nations and the principles of International law, the sovereign right to exploit their own resources pursuant to their own environmental policies and the responsibility to ensure activities within their jurisdiction."

In addition to regulations, Indonesia should have an integrated system in protecting marine genetic resources such as Material Transfer Agreement to facilitate the

exchange of materials and associated data between researchers as well as to protect the interests of researchers and their institutions (Bubela et al 2015). The material transfer agreement is a contract that governs the transfer of tangible research materials between two organizations when the recipient intends to use it for his or her own research purposes. The material transfer agreement defines the rights of the provider and the rights and obligations of the recipient with respect to the materials and any progeny, derivatives, or modifications.

**Conclusions.** Based on the research, it can be concluded that Indonesia already provides protection on the intellectual property rights of maritime scientific research in Indonesia sea. On the other hand, legal protection is still spread in various legal regulations. Therefore, in order to provide clearer and more comprehensive protection, it is recommended that the Indonesian Government conduct codification and unification of the various regulations regarding protection on the intellectual property rights of maritime scientific research results owned by Indonesia. Furthermore, Indonesia should have the Material Transfer Agreement to facilitate the exchange of materials and associated data between researchers as well as to protect the interests of researchers and their institutions.

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