

Intellectual property right and farmer protection in accessing genetic resources

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Abstract. Intellectual Property Rights (IPR) in the field of agriculture are regulated under the Patent Law, the Plant Breeder's Right Act and the Plant Cultivation System Act. The decision Number 99/PUU-X/2012 of the Constitution Court granted the right of farmers to access genetic resources (GR). The study aims to assert an application relevance of the law on the events in concreto complying with the provisions of law or contract. This is normative law research. This study revealed that if the Plant Breeder's Right Act and the Patent Act are linked to access to GR, they are not adequately regulated of how fair its benefit-sharing from the use of genetic resources, especially to local communities or farmer which had traditional knowledge (TK). The benefits of IPR are, a form of legal protection against the TK of the population over local varieties, it can utilize GR, and as conservation. IPR has progressively been incorporated into agriculture, namely Law Number 4/2006 concerning the Ratification of the International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA) and Law Number 11/2013 on the approval of the Nagoya Protocol on access to GR and the fair and equitable benefit-sharing arising from their utilization to the Convention on Biological Diversity. Based on this, it is essential to consider equal and balancing protection between breeder rights and farmer rights.

Keywords: farmer protection, genetic resource, intellectual property right.

1. Introduction

In the last decade, Access and Benefit-Sharing (ABS) issues had increasingly become part of the international and national policy and legal agendas related to biodiversity in general and genetic resources (GR) in particular. Approximately 18 countries have developed long-distance access and ABS, which are well summarized and covered by regulations on biodiversity. Some countries that have developed national laws include the Philippines, Brazil, Peru, India, Ethiopia and others. Indonesia is still in the process of discussing the Genetic Resources Bill, which provides Access and Benefit-Sharing arising from the utilization of GR.

In Indonesia, the National Law on GR has not yet been regulated, however Article 33 paragraph 3 of the Indonesia Constitution which said that any natural resources, including GR, are under the authority of the Government and should be used as much as possible for the people welfare, can be the base for any law and regulation on GR. Other law related to GR management are Law Number 32/2009 on Environmental Protection and Management, Law Number 12/1992 on Plant Cultivation Systems, Law Number 29/2000 on Plant Variety Protection and Law Number 4/2006 on the



Ratification of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). Law Number 1/2014 which amendmended Law Number 41/1999 on Forestry, Law Number 5/1990 on Conservation Natural Resources and Ecosystems, Law Number 41/2014 on Amendment to Law Number 18/2001 on Animal Livestock and Health and Law Number 45/2009 on the Amendment to Law Number 31/2004 on Fisheries.

National laws on ABS arising from the utilization of GR, are still sectorial or partial in nature, such as Law Number 12/2012 on Plant Cultivation Systems, Law Number 5/1994 on Ratification of the United Nations Convention on Biological Diversity (CBD), Law Number 29/2000 on Plant Variety Protection, Law Number 21/2004 on the Ratification of the Cartagena Protocol on Biodiversity, Law Number 4/2006 on Ratification of ITPGRFA and Law Number 11 of 2013 on the Adoption of the Nagoya Protocol of the United Nations CBD. So far, those laws have yet been able to mine the economic potential of GR and prevent its misappropriation or biopiracy.

Developed countries that have technology in the field of biotechnology are very dependent on GR from developing countries that do not have sufficient ability, both in terms of human resources, technology and funds for the development of research and technology. Research and development in the biotechnology field, which is at risk, is inseparable from the lack of financial support or investment. It is technological progress need rewards [1] and incentives [2] from the findings of the technology.

One form of reward given to the invention must at least be protected with intellectual property rights (IPR) such as patent or plant variety protection. Commercialization of technology products will generate income that can be used to fund future research and technology development. Pharmaceutical companies closely related to biotechnology are based their research and development of pharmaceutical products from GR, coming from developing countries.

The process of accessing GR is often done by biopiracy. Biopiracy is essentially the act of taking valuable resources from a country's traditional knowledge (TK) that is packaged and redeveloped without giving contribution to the holders of TK's. Some people view biopiracy as the act of stealing valuable resources for the commercial gain of developed countries and multinational corporations [3]. To those with this view, biopiracy represents a disingenuous repackaging of TK to secure monopoly rents for the biopirate excluding the original innovator from a claim to these rents. The fact that the potential returns from investing in modern biotechnology accrue only to those who hold IPR biased in favours of contemporary biotechnology and against TK raises significant inequity concerns.

While the definition of bioprospecting is an umbrella term describing the discovery of new and useful biological samples and mechanisms, typically in less-developed countries, either with or without the help of indigenous knowledge, and with or without compensation. In this way, bioprospecting includes biopiracy and the search for previously unknown compounds in organisms that have never been used in traditional medicine [4]. TK, the questions of how IPR can protect benefit farmers in accessing GR should be answered. Therefore, this study aims to ascertain whether the application of the law on the events complies with the provisions of law or contract.

2. Materials and methods

The study is carried out by using normative legal research. Normative legal research examines the implementation of the provisions of positive law and contracts factually on any particular legal events. According to Mertokusumo [5], the target of the research is legal norms (rules) to gain: *das sollen* through research librarianship, as well as events or behaviour in the sense of the fact or the *das sein* through field research. On the other hand, Soekanto Soerjono [6] argues that legal research includes "normative legal research" that consists of examination of the role of law, the principle of synchronization of law, legal history, comparative law, as well as "empirical legal research" which consist of identification and effectiveness of the regulation.

A qualitative method and juridical analysis are conducted in this study. A descriptive research specification which provides data or image, may be detailed about the people, circumstances and other facts, with the author's descriptive methods can only compare certain phenomena. The specification is

used with the goal of obtaining an overview of farmer protection in accessing the global resource. Data collection was performed through interviews and selection in the form of documents which is sourced from literature, legislation, official documents and other documents. The respective documents could be research results, scientific articles/papers, scholarly journals and scientific papers. This evaluation can generate an overview of the implementation of the IPR and farmer protection in accessing GR.

3. Results and discussion

Patents are one type of IPR that are most closely related to the use of GR. Provisions in the patent system related to the use of GR are as follow: Patents granted for each invention, both products and processes, in all fields of technology throughout the invention are new, have inventive steps and can be applied in the industry (TRIPs Article 27 [1] and Law Number 14/2001 on Patent). Microorganisms found in nature or the results of genetic engineering are patentable (see TRIPs Article 27 [3]).

The distributive justice approach is a balance in seeing the excess of IPR protection, especially in the commercialization, access and utilization of GR carried out through biopiracy. The principle of distributive justice is the concept of justice [7] which is closely related to the issue of human dignity, commons good and human rights. The basic question of this distributive justice approach is: what exactly constitutes a "fair", "just" or "equitable" distribution? In the context of using GR, is biopiracy a good thing? Is the utilization and commercialization of the product taken without permission, without the contribution can be justified? How should ABS (www.cbd.int/abs) be carried out (equitable distribution)? This approach brings a different perspective, especially from the angle of protection of the interests of indigenous people, who are holders, guardians of GR that have been utilized without proper contributions and rewards. Differences [8] in the protection of the interests of the private sector (pharmaceutical companies) and the interests of the state as well as in the use of GR also have a major influence on how the problem of using these GR is solved.

Some countries have formulated disclosure requirements in the patent law, steps which are called transparency, which aims to ensure the proposal from the patented of GR. These countries include:

- 1) Belgium; Patent Law; Project: Law Number 2005-04-28/33: *Loi modifiant la loi du 28 mars 1984 sur les brevets d'invention, en ce qui concerne la brevetabilité des inventions biotechnologiques.*
- 2) Bolivia; Supreme Decree Number 24676, Article 2, Final Provisions VII-Seventh.
- 3) Brazil; Provisional Measure Number 2.186-16 (23 August 2001).
- 4) China; Patent Law Amendment (2008), Article 5(2), 26(5).
- 5) Costa Rica; Biodiversity Law 7788, Article 80; Rules on Access (2003) Art. 25.
- 6) Denmark; Act 412, 31 May 2000 Amending Danish Patent Act, paragraph 3; Danish Penal Code 163.
- 7) Egypt; Egyptian Law Number 82 of 2002 on the Protection of Intellectual Property Rights, Art. 13.
- 8) New Zealand; Patent Bill 2009 and section 17 Patent Act (1953).
- 9) Norway; Patent Law Amendment 2004, section 8b.
- 10) Panama; Executive Decree Number 25 (28 April 2009) Art. 19.
- 11) Portugal; Biodiversity Law (10 August 2002) Ar. 4c.
- 12) Romania; Patent Law 64/1991, rule 14.1.c) source shall be indicated.
- 13) South Africa; Patent Law Amendment (7 December 2005).
- 14) Swiss; Amendment of Patent Law of 22 June 2007, RO 2008 2551, Art. 49 a.
- 15) Thailand; Act on Protection and Promotion of Traditional Thai Medicine Intelligence B.E. 2542.
- 16) Venezuela; Biodiversity Law 2009.

Ratification of the Nagoya Protocol through Law Number 11/2013 by the Indonesian Parliament is one of the opportunities for Indonesia to obtain benefit-sharing arising from of GR. ABS provision is a means offered by the Nagoya Protocol to protect biodiversity, including for Indonesia. The application of ABS provisions in Indonesia can prevent biopiracy. The Nagoya Protocol recognizes state sovereignty in protecting their GR. These GR are not freely traded, but in accessing must meet the

provisions set out in the protocol, namely based on Prior Informed consent and Mutually Agreed Terms (MAT), as well as the involvement of indigenous/traditional communities and for preventing theft of biodiversity (Table 1).

Table 1. Differences between law and policy about GR on sovereignty rights.

State	Right of sovereignty			
	Accessing	Benefit-sharing	Farmer right	Traditional Knowledge
Brazil	Depend on outsider variety	Good access mechanism; must permit from the government; benefit-sharing is not transparent; joining in Multilateral System (MLS)	No specific regulation	Provide protection through national legislation and regional cooperation
USA	<i>Ex situ</i> collection majority	Good access mechanism; submit profit sharing to the parties	No specific regulation	No regulation
Germany	Can meet their own needs but use more modern varieties	There is no further mechanism at the national level; access on PGR controlled privately is done through contractual relations; join the MLS	No specific regulation	No regulation
China	Very rich in PGR, but many of them are not monitored by state management programs, although there are investments	There are bilateral mechanisms, but have not ratified ITPGRFA so that they are not joined into the MLS	No specific regulation	No regulation
Indonesia	Abundant PGR, but many of them are not monitored by state management programs, although there are investments	The access mechanism is still in the process; profit-sharing is still unclear	No specific regulation	No regulation

The effectiveness of the application of ABS provision sharing is not enough by only ratifying the Nagoya Protocol, but should be further detailed with regulations at the national level. Then, in the policy in the field of IPR regulation, the government has also prepared a draft amendment to the Patent Act with a draft amendment to patents, specifically in article 25 of the change to the Law states that "if the invention relates to and, or originates from GR and or TK, it must be clearly and correctly stated the origin of GR and/or TK in the description". By applying the Sources of Origin Country principle, eating is an aspect of dampening the onset of biopiracy. Thus, biopiracy is a form of bioprospecting, where both actions are characterized by two main characteristics: first, the absence of permission to access, and the absence of compensation/rewards that can be given to GR holders related to TK.

Government policy by giving authority to local communities in managing biodiversity is the right choice to avoid community conflict. This authority is a form of appreciation for the contribution of the community for conserving biodiversity. Management must also be in line with the mandate in Article 33

of the Constitution and the fifth principle of Pancasila. Conceptually, regulation of the existence of Nagoya Protocol has provided a way for Indonesia to protect abundant biodiversity through ABS.

The international regulation through the Nagoya Protocol stipulates specific guidelines and conditions to access to genetic or biological resources. For example, access should be subject to prior informed consent of the party or country providing the resources (state of origin of the resources or a party that has acquired the resources following the CBD). Further, the so-called TK plays a vital role in local communities through constant development and exchange. Access to this knowledge is also subject to similar procedures, but with the participation of the holders of such knowledge. Hence, the benefits from the utilization of biological resources are supposed to be shared in a fair and equitable way through MAT, including non-monetary gain. For example, the French Centre for Agricultural Research for Development (CIRAD) promotes advantages, such as research collaboration, training, transfer of technology, co-publication, co-ownership of results, and hence the regulatory mechanisms on ABS may represent a useful tool to stimulate research cooperation. A MAT can be signed without reference to the ABS provision in the CBD or the Nagoya Protocol. However, as more than 30 countries are parties to these treaties, there are several advantages of referring to the Nagoya Protocol ABS-components in the MTA, there is a higher degree of security as the legal basis for the MTA improvements. Therefore, legal sanctions may be avoided and the capacity to obtain a Certificate of Origin to publish increases. IPR may also be easier to agree, and the ethical basis of the MTA will be ensured.

There are many reasons why MTAs are growing its importance. The informal exchange among farmers built upon TK is less typical today than it was before. Knowledge creation and innovation increasingly take place in the context of systematic research and research cooperation across countries. In this process transfer of biological or genetic materials is not only common, but also grows in volume and importance in line with the increasing importance of the bio-economy and attention given to biodiversity, climate change, food security and other challenges. The frontier between basic and commercially oriented research is becoming blurred, and the global organization of, e.g. drug development induces complex divisions of labour in clinical trials with implications for the transfer of GR. One of the purposes of these international treaties is to create conditions to facilitate access to GR. However, today MTAs cannot be understood without the context of international treaties and national regulations. They may amount to restrictions impeding research and development. This is a continuous balancing act. Therefore, these are necessary to ensure that developing countries, typically being the providers of materials and biodiversity, can benefit from the exchange and transfer of biological materials.

4. Conclusions

Patents can be used as economic support and utilization of GR. However, the license also opens up opportunities for abuse from its use. Legal protection for the usage of GR and TK is to provide a foundation for their recognition TK with easy-access permits and fair distribution of the benefits TK. Equitable benefit-sharing is then implemented in MAT. The rights of farmers include the right to store, use and exchange and sell seeds, protection of TK, participation in making decisions and fair ABS. The utilization and access of GR and TK involve the participation of indigenous peoples in granting permits. TK Fair distribution of benefits is based on contractual relations, of which, the role of government as a legal subject of international agreements becomes crucial to guarantee rights indigenous peoples and farmers in terms of the use of GR and TK.

5. References

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