

THE INDONESIAN PLANT VARIETIES PROTECTION ACT: THE DILEMMA OF MEETING INTERNATIONAL AND BILATERAL OBLIGATIONS AND PROTECTING TRADITIONAL FARMERS

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ABSTRACT

Plant variety protection is a relatively new concept for many Indonesians. It was developed because of the patent regime's failure to provide appropriate protection for new plant varieties. This new *sui generis* legislation for the protection of plant varieties was enacted in response to Article 27.3(b) of the TRIPS Agreement, which requires WTO Members to provide an effective *sui generis* law for the protection of new plant varieties. This paper analyses the current state of plant variety protection in Indonesia. It covers the threshold of protection, the subject, scope, right and obligation of breeders, exceptions to infringement, farmers' rights and local varieties. It also analyses the current policy to revise the Plant Variety Protection Act and the underlying reasons for this, including Indonesia's national interest and its international and bilateral commitments. The main focus of the paper explores why such policy is not broadly compatible with the Indonesian agricultural tradition of seed sharing. Accordingly, this paper explores the tradition of seed sharing in Indonesian culture known as *adat*. In addition, it explores the likely implication of such protection for national agricultural innovation.

Keywords: *plant-variety protection, international and bilateral commitments, farmers' rights, seed sharing, adat, local varieties and agricultural innovation*

I. CURRENT STATE OF PLANT VARIETY PROTECTION IN INDONESIA

A year prior to the enactment of the new Patent Act of 2001¹, Indonesia enacted the Plant Variety Protection Act (hereinafter called the PVP Act).² Like other intellectual property rights, plant variety protection (PVP) is a relatively new concept for many Indonesians. It was developed because of the patent regime's failure to provide appropriate protection for new plant varieties, which were regarded as the most important outcome in the breeding process.³ The new *sui generis* legislation for the protection of plant varieties was enacted in response to Article 27.3(b) of the TRIPS Agreement, which requires Members to provide an effective *sui generis* law for the protection of plant varieties if not protected by patents.⁴

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¹ The Act of the Republic of Indonesia Number 14 of 2001 regarding Patents (State Gazette of the Republic of Indonesia Number 109 of 2001, Supplementary State Gazette Number 4130).

² The Act of the Republic Indonesia Number 29 year 2000 regarding Plant Varieties Protection (State Gazette of the Republic Indonesia Number 241 year 2000, Supplementary State Gazette Number 4130).

³ Andriana Krisnawati and Gazalba Saleh, *Perlindungan Hukum Varietas Baru Tanaman Dalam Perspektif Hak Paten and Hak Pemulia (Legal Protection on New Plant Varieties in the Perspective of Patent Rights and Breeder Rights)* (PT Raja Grafindo Persada 2004), 87.

⁴ The Indonesian Patent Act only protects the process for plant production by using biotechnology techniques, while the PVP Act provides protection of the product resulting from natural and biotechnology techniques in the form of new plants varieties or species through natural and induced mutation, soma clonal variation, individual crop selection, backcrossing and transformation from the original variety through genetic engineering. See Article 6(5)(c) of the Indonesian PVP Act (n 2).

A. THRESHOLDS OF PROTECTION

⁷² Under the PVP Act, plant varieties not protected by patent law fall within this regime. The scope of protection covers all categories of plants, whether they generatively⁵ or vegetatively⁶ reproduced, except microorganisms (protected by patent) such as bacteria, bacteroids, microplasm, virus, viroid, and bacteriophage.⁷

⁴⁶ The requirement of protection under this Act is similar to that in other States having ratified the International Convention for the Protection of New Varieties of Plants (UPOV Convention) 1991.⁸ Varieties that may be issued PVP must meet the threshold requirements of newness, distinctiveness, uniformity, stability and have a denomination (name).⁹ Both criteria of newness and distinctiveness are determined at the time of the approval of the PVP application.

A variety is regarded as new if the propagation material or the harvested products have not been traded, or may have been traded in Indonesia for less than a year, or been traded overseas for no more than four years for a seasonal plant and six years for an annual plant.¹⁰ A variety is unique if it can be clearly differentiated from other varieties, whose existence is already publicly known.¹¹ A variety is uniform if the main features are proven uniform although varied as a result of changes in planting methods and environment.¹² A variety is considered as stable if the plant's characteristic is unchanged when multiplied in large quantities through specific reproduction cycles and is not modified at the end of each reproduction cycle.¹³

However, this Act is seemingly not designed to provide protection for traditional varieties developed by farmers, as it is very difficult for such varieties to satisfy the threshold requirements of uniformity and stability.

B. RIGHT HOLDER, SCOPE, RIGHTS AND OBLIGATIONS OF THE BREEDER

The PVP right holder can be a breeder, or any person or legal body or other parties that receive further rights from the right holder.¹⁴ If the production of variety is based on a contract of employment, the employer is the right holder without compromising the right of the breeder,

⁵ Generative reproduction refers to plant reproduction through cross breeding of reproductive cells.

⁶ While vegetative reproduction refers to plant production that not occur through cross breeding reproductive cells.

⁷ Explanatory Memoranda of Indonesian Plant Varieties Act, Article 2(1) (n 2).

⁸ UPOV is the acronym of the original name in French *Union pour la Protection des Obtentions Vegetables*. UPOV was established by the International Convention for the Protection of New Varieties of Plants on 2 December 1961, and revised at Geneva on 10 November 1972, on 23 October 1978, and on 19 March 1991.

⁹ Article 2(1) of the Indonesian PVP Act (n 2).

¹⁰ *ibid* Article 2(2).

¹¹ *ibid* Article 2(3).

¹² *ibid* Article 2(4).

¹³ *ibid* Article 2(5).

¹⁴ *ibid* Article 5(1).

except if agreed otherwise.¹⁵ Similarly, if the production of a variety is the result of a commissioned work, the party commissioning the work is the right holder, unless otherwise agreed.¹⁶

While breeders have a right to receive a fair compensation and moral right in which their names are included in the PVP certificate¹⁷, PVP right holders are obliged to implement their PVP rights in Indonesia, to pay an annual fee, and to provide and present the sample of seed varieties.¹⁸ However, if technically and economically implementation of the rights is unfair in Indonesia, right holders may be exempted from the obligation to implement them in Indonesia, provided a written application to the PVP Office is filed, enclosing the reason and evidence from an authorized institution.¹⁹

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Article 6 stipulates that for the purpose of propagation, a PVP right holder has the right to use and consent to any parties' or other legal entities' use of the varieties, not only in the form of seeds, but also harvested products.²⁰ This Article applies to a wide range of varieties covering an essentially derived variety²¹, undistinguished varieties from protected varieties, along with a produced variety using a protected variety. The right to use a variety involves a number of activities: (a) the production and multiplication of seeds; (b) the preparation for propagation purposes; (c) advertisement; (d) offering; (e) selling or trading; (f) exporting; (g) and importing and preparation for any of the above activities.²² The scope of the right under this Act is similar to that established in Article 14(1) of the UPOV Convention 1991.

Article 6(4) obviously provides that harvested products for propagation purposes originating from protected varieties must be used with the consent of the PVP right holder. This provision aims to ensure that part of the harvested product is not used for seed multiplication.²³ Furthermore, Article 6(5) stipulates that the usage of new protected varieties requires the consent of the PVP right holders, which also applies to essentially derived varieties. This is consistent with Article 14(5) of UPOV 1991. As essentially derived varieties are eligible for PVP rights, the consent of the owner of the original variety is required to ensure that the PVP right holder or the owner of the denomination of the original variety continues to enjoy

15 *ibid* Article 5(2).

16 *ibid* Article 5(3).

17 *ibid* Article 8.

18 *ibid* Article 9.

19 *ibid* Article 9(2)-(3).

20 *ibid* Article 6(2).

21 Under Government Regulation Number 13 of 2004 concerning the *Penamaan, Pendaftaran dan Penggunaan Varietas Asal untuk Pembuatan Varietas Turunan* Essential (Denomination, Registration, and the Use of Original Varieties for Developing Essentially Derived Varieties), the 'essentially derived varieties' referred to in Article 1(6), signify varieties resulting from *perakitan* (engineering) of original varieties by selection, such that such varieties express essential features of their original varieties (minimum 70 per cent), but can be clearly distinguished from their original variety by the characteristic occurring as a result of derivation activities. Furthermore, Article 2(2) states that these essentially derived varieties result from certain selection methods, including natural mutation, induction mutation, individual selection of existing varieties, cross breeding (*silang balik*), soma clonal variations and genetic engineering. See also *ibid* Article 6(5)(a), (b) and (c) of the Indonesian PVP Act.

22 *ibid* Article 6(3) of Indonesian PVP Act.

23 *ibid* Explanatory Memoranda of Article 6(4) of the Indonesian PVP Act.

economic rights from the essentially derived varieties. Therefore, in terms of scope, ²⁹ Article 14 of UPOV 1991 is incorporated into Article 6 of the Indonesian PVP Act.

³⁵ The only plant variety which cannot be granted PVP is one whose purposes conflict with prevailing laws, social order, ethics or morality, religious norms, and the health and conservation of the environment.²⁴ The production of psychotropic plants is regarded as being contrary to the prevailing laws, public order, health, ethics and living environment. A plant variety deemed contrary to religious principles is, for instance, one that uses genes from animal sources, which goes against the norms of particular religions.²⁵

C. EXCEPTIONS FROM INFRINGEMENT

Article 10 provides three acts that are not regarded as infringing PVP rights: (1) use of the harvested crop of protected varieties provided it is not for commercial purposes; (2) use of protected varieties for research and plant breeding activities; and (3) government use of protected varieties in the light of food supply policy and medicine without infringing the economic right of the PVP right holder.

The requirement and procedure for the use of plant varieties by the Government are enshrined in Government Regulation Number 14 of 2004²⁶, which addresses the possibility of food insecurity and the threat of health in the public interest.²⁷ According to this Regulation, to use protected varieties the Government must consider the economic rights of right holders by providing fair remuneration to them; the amount of such remuneration is based on an agreement between the right holder and the Minister.²⁸ Furthermore, protected varieties can be freely used for the purpose of research activities, plant breeding and constituting new varieties as stock for cross breeding provided they are not used for original varieties in accordance with Article 6(5). The aforementioned Articles are consistent with Articles 15(1) and 17 of UPOV 1991.

D. BREEDERS' RIGHTS VERSUS FARMERS' RIGHTS

According to the PVP Act, the only right granted to the farmer is the use of part of the harvested crops from protected varieties, provided it is not for commercial purpose. The non-commercial purposes under this Article concern a farmer's individual activities, particularly those of small farmers for their own needs and do not include activities to meet the needs of their group.²⁹ This Act seemingly promotes an imbalance in protection between the general

²⁴ *ibid* Article 3 of the Indonesian PVP Act.

²⁵ *ibid* Explanatory Memoranda of Article 3.

²⁶ Government Regulation Number 14 of 2004 Regarding Requirement and Transfer Procedure for Plant Varieties Protection and the Use of Protected Varieties by the Government (State Gazette of the Republic of Indonesia 2004 Number 31, Supplementary State Gazette of the Republic of Indonesia Number 4376).

²⁷ *ibid* Articles 33(1) and (2).

²⁸ *ibid* Articles 33(3) and (4).

²⁹ *ibid* Explanatory Memoranda of Article 10(1) a.

public's interest and the PVP right holder.³⁰ In addition, this Act appears to refer to breeders' rights rather than farmers' rights.³¹

This aspect of the Act, on the scope of breeders' rights and offering a very limited exception for farmers' use, reflects the market-oriented commercial value of the system. For many generations, farmers in Indonesia have exchanged seeds amongst the larger farming community. It should be noted that they engaged in seed exchange activities not for commercial purposes, but rather out of friendship and solidarity with the community to achieve *kerukunan* or social harmony.³²

To a certain extent, it is argued that the PVP Act may have potential implications for the tradition of exchanging seed among traditional farmers. However, the PVP Act may not be an issue if farmers have been exchanging seeds for generations, as presumably the seeds they exchange are traditional seeds and not a new variety bought from the commercial market and thus not covered by the PVP Act.³³ The traditional seed can still be exchanged and distributed by traditional farmers to their neighbours without infringing breeders' rights. However, the exchange of seeds becomes an issue if someone acquires a PVP seed and exchanges it. However, if farmers maintain the use of traditional seeds, they may not obtain the agricultural advantages offered by a PVP seed and thus become less competitive, but they are likely to be involved with small-scale traditional markets rather than large-scale commercial seed markets where the PVP seed is used.³⁴

To be competitive, farmers are required to use PVP seeds, however, since the harvested varieties of these seeds cannot be exchanged and even certain types of seeds cannot be resown, the dependency of farmers on the seed industry is inevitable. The typical farmer in Indonesia is a small economically marginalized farmer with limited land. If farmers are forced to rely upon expensive purchased seed from seed industries, it may potentially destroy their livelihood.

³⁰ Nurul Barizah, *Intellectual Property Implications on Biological Resources; Indonesia's Adoption of the International Intellectual Property Regimes and the Failure to Adequately Address the Policy Challenges in the Area of Biological Resources* (Nagara 2010), 281.

²⁶ ³¹ Farmers' rights is a concept proposed by Mooney. This concept acknowledges 'the contribution farmers have made to the conservation and development of plant genetic resources, which constitute the basis of plant production throughout the world'. While Dutfield argued that farmer's right is one of the IP rights, 'but it is frequently suggested as a principle that could be introduced into an IP system for plant varieties as some forms of compensation or benefit sharing mechanism', see the discussion in Graham Dutfield, *Intellectual Property Rights and the Life Science Industries: A Twentieth Century History* (Ashgate 2003), 216. See also Resolution 5/89, which endorses the concept of farmers' rights. Under the Resolution, farmers' rights mean rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centres of origin/diversity. These rights are vested in the international community as trustee for present and future generations of farmers for the purpose of ensuring full benefit to farmers and supporting the continuation of their contributions, as well as the attainment of the overall purposes of the International Undertaking. This Resolution was adopted at the 25th Session of the FAO Conference in Rome, 29 November 1989.

³² Further analysis can be found in Nurul Barizah, 282 (n 30).

³³ *ibid.*

³⁴ *ibid.*

As mentioned earlier, Article 6(5) also stipulates that the use of new protected varieties, along with the use of essentially derived varieties, requires the authorization of the PVP right holder. This Article is another example of the emphasis on the commercial rights of breeders. Even though this Article essentially anticipates the development of modern biotechnology techniques of transferring genes with a high degree of certainty, this provision limits the scope for farmers to develop new seed based on their traditional breeding methods for protected new varieties bought from seeding industries.

In this context, the PVP system appears to favour researchers and commercial plant breeders rather than farmers.³⁵ Article 1(4) of the Act lays down the following condition in its definition of plant breeding (*pemuliaan tanaman*):

Plant breeding is a series of research activities and experiments or the discovery and development of a particular variety, in accordance with, *standard methods* for the production of new varieties while protecting the purity of the new seed that is produced.³⁶

This Article may be interpreted in a way that breeding processes developed by farmers and local communities will not be recognized as plant breeding pursuant to the above provision. Meanwhile, the new varieties developed by commercial plant breeders may be derived from the original plant developed by farmers, but the Act does not clearly spell out the compensation for farmers for developing local varieties used by commercial breeders for creating new varieties.³⁷

E. LOCAL VARIETIES

The Act provides that the State controls local varieties owned by a community.³⁸ The local varieties refer to already existing varieties that have been cultivated by farmers for generations and have become communal property.³⁹ The control of the State will be implemented by the Government.⁴⁰ This includes regulations on right to payment, the use of local varieties in relation to PVP and other efforts for the conservation of genetic resources.⁴¹ The Government is also responsible for giving a denomination to the local varieties.⁴²

Under Government Regulation No. 13 of 2004, the mayor of the city or regency, acting on behalf of the society in their region as the owner of local varieties, has the mandate to control local varieties (*bupati/walikota*) to.⁴³ As a result, a prior agreement with the mayor of the city is required by those intending to use local varieties as original varieties for developing essentially

³⁵ See Hira Jhamtani and Lutfiyah Hanim, *Globalisasi dan Monopoli Pengetahuan, Telaah tentang TRIPs dan Keragaman Hayati di Indonesia (Globalization and Monopoly of Knowledge, Analysis of TRIPS and Biodiversity in Indonesia)* (INFID, KONPHALINDO, Institute of Global Justice 2002), 101.

³⁶ Article 1(4) of Indonesian PVP Act (n 2) (emphasis added).

³⁷ See also Government Regulation Number 13 of 2004 (n 21).

³⁸ *ibid* Article 7(1) of the Indonesian PVP Act of 2000 above (n 2).

³⁹ *ibid* Explanatory Memoranda of Article 7(1).

⁴⁰ *ibid* Article 7(2) of the Indonesian PVP Act 2000.

⁴¹ *ibid* Explanatory Memoranda of Article 7(2).

⁴² *ibid* Article 7(3) of the Indonesian Plant Varieties Act of 2000.

⁴³ Government Regulation No. 13 of 2004, Article 5 (n 21), this role includes naming local varieties and then registering with the PVP office.

derived varieties.⁴⁴ This agreement also needs to spell out the economic benefit of the owner of local varieties for the purpose of increasing prosperity of the community and genetic resources conservation.⁴⁵

Through the PVP Act, the Government asserts controlling authority over plant varieties.⁴⁶ In these circumstances the Government may be seeking to exclude outside misappropriation. However, a local community that has developed these plants may reject excessive governmental control. This kind of provision is justified by the principle of sovereign control, but is contrary to the principles concerning farmers' rights embodied in the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)⁴⁷ and the effort in the Convention on Biological Diversity (CBD)⁴⁸- Bonn Guidelines to extend the control of biological resources to local farmers and communities.⁴⁹ In order to adhere to these principles, the state authority over local plant varieties may specify that it will obtain prior informed consent (PIC) and share benefits from local communities, if their varieties are sought for research and commercialization.⁵⁰

The PVP Act is not intended to bar small farmers from the opportunity to use new varieties for their own private use and permanently protects local varieties for the benefit and interest of wider society.⁵¹ In practice, the Act has the potential to limit significantly opportunities for small farmers.

II. CURRENT POLICY DIRECTION: A NEED FOR REVISION

Although most substantive parts of the PVP Act refer to UPOV 1991, including the guidelines for examination, the Indonesian Government has sought to revise the Act from 2007 until the present. The basis for the revision is driven by several motivations, including Indonesia's national interest, along with international and bilateral commitments.

In the context of national interest as an agricultural nation, the revision is motivated by (1) the need for a ready supply of distinct crops and plants for developing a progressive, efficient and strong agriculture;⁵² (2) the need to preserve germplasm resources to enhance the

⁴⁴ *ibid* Article 9.

⁴⁵ *ibid* Article 10(1)-(2).

⁴⁶ Daniel Robinson, *Exploring Components and Elements of Sui Generis Systems for Plant Variety Protection and Traditional Knowledge in Asia: A Study Commissioned by the International Centre for Trade and Sustainable Development* (ICTSD 2007), 29.

⁴⁷ International Treaty on Plant Genetic Resources for Food and Agriculture, opened for signature 3 November 2001 (entered into force on 29 June 2004). Official text available online at: <<http://fao.org/ag/cgrfa/UI.html>>.

⁴⁸ The United Nations Convention on Biological Diversity, done at Rio de Janeiro, 5 June 1992, 31 ILM 822, opened for signature 5 June 1992 (entered into force on 29 December 1993). Text and information on the CBD can be found at the site of the Secretariat of the CBD, UNEP, the Rio Declaration, UN.Doc.A/CONF.151/5/Rev.1 (1992). Available online at: <<http://biodiv.org>>.

⁴⁹ *ibid*.

⁵⁰ *ibid*.

⁵¹ The General Explanatory Memoranda of the Indonesian PVP Act (n 2).

⁵² *ibid* the Preamble of Indonesian PVP Act of 2000, point b.

development of seeding industries in order to obtain superior crops or plant;⁵³ and (3) the need to provide legal protection for individual and legal entities to promote and protect their interests and participation in producing new and superior varieties.⁵⁴

In the context of an international commitment, Indonesia needs to transform the international convention on plant varieties into a national legislative framework.⁵⁵ In other words, Indonesia is favourable to ratifying UPOV 1991, although there is no single obligation under international law for States, including Indonesia, to become a member thereof.

Under the TRIPS Agreement, WTO Members are obliged to provide protection for plant varieties either by patents or by an effective *sui generis* system or by any combination of both.⁵⁶ The TRIPS Agreement does not define the term '*sui generis*', and similarly, the history of the drafting of the treaty does not provide any further reference.⁵⁷ The term '*sui generis*' signifies 'of its own kind' or 'unique', but this understanding fails to identify what types of legal systems are permitted under the Agreement. Thus, UPOV may be regarded as a form of *sui generis* law providing protection of plant varieties as contemplated by TRIPS Article 27.3(b).⁵⁸ However, Members may choose to adopt the protection of plant genetic resources by choosing their own model as long as it is effective.⁵⁹ Accordingly, Members have no legal obligation to adopt the UPOV Convention, or in particular, the most controversial version, UPOV 1991.

Currently, there are two versions of the UPOV Convention which are in force, namely the 1978 and 1991 Acts.⁶⁰ In principle, both Acts provide a minimum standard of protection for

⁵³ *ibid* point c.

⁵⁴ *ibid* point d.

⁵⁵ *ibid* point e.

⁵⁶ Article 27.3(b) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) of 1994. Marrakesh Agreement Establishing the World Trade Organization, Annex 1 C, Legal Instruments – Results of the Uruguay Round Vol. 31; 33 I.L.M.1997, 1201, 15 April 1994 (Entered into force on 1 January 1995).

⁵⁷ Daniel Gervais, *The TRIPS Agreement: Drafting History and Analysis* (2nd ed, Sweet & Maxwell 2003), 147-151.

⁵⁸ Michael I Jeffrey, 'Intellectual Property Rights and Biodiversity Convention; Reconciling the Incompatibilities of the TRIPS Agreement and the Convention on Biological Diversity' in Burton Ong (ed), *Intellectual Property and Biological Resources* (Marshall Cavendish Academic 2004), 1885-225, 197.

⁵⁹ Based on a 1997 report, there are four elements that any national plant variety protection law must contain in order to qualify as effective under Article 27.3(b) of the TRIPS Agreement: (1) the law shall apply to all species and botanical genera; (2) it shall provide exclusive right to the plant breeder to control particular acts in relation to the protected varieties; (3) it shall provide national treatment and MFN treatment to breeders from other WTO Members; and (4) it shall consist of procedures for breeders to enforce their rights. See Laurence R Helfer, 'Intellectual Property Rights in Plant Varieties, International Legal Regimes and Policy Option for National Government', FAO Legislative Study 85, Food and Agriculture Organization of the United Nations, Rome (2004), 56-7.

⁶⁰ UPOV was first adopted on 2 December 1961 (hereinafter UPOV 1961). It was amended in 1972 and then it was revised again in 1978 (hereinafter UPOV 1978). UPOV 1978 was amended again in 1991 (hereinafter UPOV 1991). Interestingly, when UPOV 1978 entered into force, States could no longer accede to UPOV 1961. See UPOV 1978, Article 33(3). However, when UPOV 1991 entered into force, UPOV 1978 was closed to further accession except for those States that had already notified their intention to accede to UPOV 1978 and had started that process. See UPOV 1978 Article 37(3) (n 8). See also Nurul Barizah, 'TRIPs Plus on Plant Varieties Protection under Indonesia-Japan Economic Partnership Agreement (IJEPA) [2009] 24 Yuridika 90, 95.

plant varieties fulfilling the legal thresholds of protection (newness, distinctiveness, uniformity⁶¹ and stability).⁶² The UPOV Convention is distinct from the patent system because it provides two exclusions from protection, namely, farmer's rights⁶³, as mentioned earlier, and research and development (R&D) exceptions.⁶⁴ Having undergone several revisions, the 1978 and 1991 Acts have a number of differences. Under UPOV 1978, consent from the breeder is not required for 'the utilization of the variety as an initial source of variation for the purpose of creating other varieties or for the marketing of such varieties'⁶⁵, and farmers can also save seeds of protected varieties.⁶⁶ This farmer's privilege, according to Blakeney, is crucial for food security in a number of countries in which farmers can save their own seed for replanting and exchange.⁶⁷

³³ The 1991 Act of the UPOV Convention revised the two aforementioned exemptions and broadened breeders' rights to encompass all acts relating to the production and reproduction of seeds, including other planting material.⁶⁸ Accordingly, under UPOV 1991, farmers' privilege to save and reuse seed from protected varieties without the breeder's consent is no longer protected.⁶⁹ Furthermore, with regard to farmers, UPOV 1991 provides that:

Each contracting party may, within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder, restrict the breeder's right in relation to any variety in order to permit farmers to use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings, the protected variety.⁷⁰

In interpreting the term 'legitimate interest' under the above provision, Blakeney argues that it refers to 'royalties that should be paid to the breeder for reuse of seed'.⁷¹ Protected material can thus be reused by farmers under UPOV 1991 if they pay royalties.

⁶⁶ Moreover, 'essentially derived' varieties and certain other varieties' of the protected varieties⁷², are also secured by the 1991 Act of the UPOV Convention as the scope of the protection is extended to cover those varieties. This extension may be limited to varieties 'that

⁶¹ *ibid.* UPOV 1991 uses the word 'uniform', while UPOV 1978 uses the word 'homogeneous'.

⁶² See Article 5 of UPOV 1991; Articles 6-9 define these requirements (n 8).

⁶³ Graham Dutfield (n 31).

⁶⁴ Article 15 of UPOV 1991 (n 8).

⁶⁵ *ibid* UPOV 1978 Article 5(3). ³⁷

⁶⁶ According to Blakeney, under Article 5 of UPOV 1978, 'the rights of the breeder of a protected plant variety were restricted to commercial dealing in the *reproductive material* through (1) production for purposes of commercial marketing, (2) offering for sale, and (3) marketing. This meant that a farmer growing a first crop from purchased seed of the protected variety was legally free to save seed from the first harvest, which could be used for sowing a second and subsequent crops on his own farm'. Michael Blakeney, 'Intellectual Property Rights and Global Food Security', in David Vaver III (ed) *Intellectual Property Rights: Critical Concepts in Law* (Routledge 2006) 315-338, 318.

⁶⁷ *ibid.*

⁶⁸ Article 14(1) of UPOV 1991 (n 8).

⁶⁹ Michael Blakeney, 318 (n 66).

⁷⁰ Article 15(2) of UPOV 1991 (n 8).

⁷¹ *ibid.*

⁷² *ibid* Article 14(5).

take over virtually the whole genome of the protected variety'.⁷³ Interestingly, a research exception is permitted as Article 15(1) underlines the 'free of availability of protected varieties as a source of germplasm for the introduction of further variation'.⁷⁴ However, in the light of the wider range of plants to which UPOV 1991 applies and the abolition of farmers' rights, the Convention strengthens the protection of breeders and provides a broader approach for PVP to all forms of production at an international level.⁷⁵

Consideration should be given to concerns about the effect of the PVP system on developing countries. The greater width and higher thresholds of protection required under UPOV 1991 has led certain commentators to conclude that it poses certain obstacles for developing nations and may not be an appropriate model of PVP for those countries.⁷⁶ It is argued that farmers in developing countries may not be able to pay for protected seeds which could become more expensive due to the UPOV 1991 standard.⁷⁷ It is also argued that farming practices in developing countries are different in character to farming practices in developed countries, and that UPOV 1991 does not suit developing countries' practices.⁷⁸ The practice of farmers in developing countries usually involves small-land holdings and manpower or animal working, while in developed countries farmers have large farms and agribusiness and also use chemical substances.⁷⁹ Those problems are associated with UPOV 1991 and not UPOV 1978 because under UPOV 1978, farmers' rights are legitimate, while breeders' rights are not as strong as those enshrined under UPOV 1991.

It should be noted that although the UPOV Convention was originally designed for developed nations with the aim of providing exclusive rights for breeders of new plant varieties, many developing nations have also ratified it.⁸⁰ This is not merely because the UPOV Convention provides an alternative to patents as a *sui generis* system, as mentioned earlier, but is partly on account of the duress imposed by negotiations on bilateral trade agreements.⁸¹ As

⁷³ Michael Blakeney, 318 (n 66).

⁷⁴ *ibid.*

⁷⁵ Article 15 of the UPOV 1991 (n 8).

⁷⁶ Nurul Barizah, 97 (n 60).

⁷⁷ *ibid.*

⁷⁸ According to Marin, broadly speaking, farmers in developing countries use subsistence agriculture in small land holdings for their main sources of income. See Patricia Lucia Cantuaria Marin, *Providing Protection for Plant Genetic Resources: Patent, Sui Generis Systems and Biopartnerships* (Kluwer Law International 2002) 49-50; see farmers' privilege in Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: Seeds and Plant Varieties* (Earth Scan 2000), 33.

⁷⁹ Nurul Barizah, 97 (n 60).

⁸⁰ The first developing countries to join UPOV were Uruguay, Argentina and South Africa, followed by a number of developing countries after 1994. UPOV has 70 member countries (status on 22 October 2012). Available online available at:

<http://www.upov.org/export/sites/upov/members/en/pdf/pub423.pdf>

⁸¹ See, for instance, The Viet Nam - United States Trade Agreement which obliges both parties to become members of UPOV, in the Commission on Intellectual Property Rights (CIPR), *Integrating Intellectual Property Rights and Development Policy*, (Final Report 2002), 62. Available online at:

http://www.iprcommission.org/papers/pdfs/finals_report/CIPRfullfinal.pdf. See also Peter Drahos, 'Expanding Intellectual Property's Empire: the Role of FTAs' (ICTSD 2003). Available online at: http://www.bilaterals.org/IMG?doc?expanding_IP_empire_-_Role_of_FTAs.doc (last accessed August 2012). See also Linda Weiss (et al.) *How to Kill A Country: Australia's Devastating Trade Deal with the United States* (Allen & Unwin 2004), 113-138.

Correa argues, such an agreement can be used as an instrument for developing the highest global standards for IP protection.⁸²

Under the Indonesia-Japan Economic Partnership Agreement (IJEPA) for instance, Indonesia is obliged to seek to become a party to a number of international conventions for the protection of intellectual property; one of them is UPOV 1991 as stipulated under Article 106.⁸³ Furthermore, Article 116 provides that 'each party shall provide for the protection of all plant genera and species by *an effective plant varieties protection system which is consistent with the 1991 UPOV Convention*' (emphasis added). Consequently, Indonesia shall adopt UPOV 1991 and shall amend its national PVP Act in line with UPOV 1991'.

Some argue that it is potentially risky and may not be appropriate for developing nations to implement UPOV 1991, as the UPOV 1991 provision was actually designed for developed countries with commercial breeding industries.⁸⁴ Furthermore, UPOV 1991 may also not be appropriate for developing countries on the basis that the characteristics of their agricultural system, culture and technology are totally different from those of the original UPOV Members.

Furthermore, in the context of sustainable development, the application of UPOV 1991 may disadvantage a country⁸⁵ in which agriculture plays an important socio-economic role, as well as in those where the biological and cultural diversity in agriculture must be protected and rewarded for their commercial benefits. Accordingly, the application of UPOV 1991 for an agriculture-reliant country such as Indonesia may still be inappropriate for the time being.

III. TRADITIONAL FARMERS: ADAT ON SEED AND CULTURE OF SHARING

As mentioned earlier, the PVP Act prohibits farmers from sharing and exchanging purchased seeds of the protected varieties. In the context of Indonesia, the sharing and exchange of seeds are based on time-honoured principles of traditional wisdom⁸⁶ belonging to

⁸² See this analysis in Carlos M Correa, 'Bilateral Investment Agreement: Agents of New Global Standards for the Protection of Intellectual Property Rights?' A study commissioned by GRAIN, 2004. Available online available at: <<http://grain.org/briefings/?id1186>> (last accessed 2 October 2012).

⁸³ See Article 106 of the IJEPA.

⁸⁴ Maristela Basso and Edson Beas Rodriguez Jr, 'Free Trade Agreement, UPOV and Plant Varieties' in Christopher Heath and Anselm Kamperman Sanders (eds) *Intellectual Property and Free Trade Agreement* (Hart Publishing 2007), 196.

⁸⁵ *ibid.*

⁸⁶ This traditional wisdom is based on the following principles: (1) People's dependency on nature requires a harmonious relationship, in which people are a part of nature itself which should be kept in balance; (2) The right over certain *adat* territory is exclusive as right over and or communal property resources or collective resources known as *adapt* territory known as *ulayat* in most part of Sumatra, Petuanan in Maluku. This binds all *adat* people to keep and manage it for common justice and prosperity, and to secure it from exploitation by other parties; (3) The system of knowledge and the structure of Adat Governance provides the capacity to solve their problem related to the use of forest resources; (4) Allocation system and *Adat* law enforcement to secure communal property resources from over use whether by their own community or other parties outside the community; (5) Distribution sharing mechanism of harvest crop of communal property resources had able to eliminate social envy in the society, see Abdon Nababan, 'Pengelolaan Sumberdaya Alam Berbasis Masyarakat Adat, Tantangan dan

many collective communities. According to research conducted by Nababan, *adat* communities also have a distribution-sharing mechanism of harvested crop along with communal property resources, which has significant value for eliminating social envy within the society.⁸⁷ In addition, it has been shown that, through the traditional wisdom of Indonesian *adat*, the society has able to sustain and enrich biodiversity⁸⁸ because each ethnic group in Indonesia has its own measure to conserve genetic resources.⁸⁹

The *Dayak Kanayant* community located in West Kalimantan, for example, observes a traditional ritual related to rice called *Naik Dango*, which is usually conducted after harvest.⁹⁰ On that ceremonial day, according to Hira and Hanim, all neighbouring villages come together with their own seeds from their harvest, including their saving seeds.⁹¹ Those seeds are then exchanged among them and planted for the forthcoming session. This tradition enriches the varieties of rice genetic resources.⁹² The varieties developed by farmers also enrich the collection of International Rice Research Institutes (IRRI)⁹³, and become valuable material for further breeding processes and innovation.

This example shows that seeds and their related knowledge are not part of trading activities, as some ethnic groups believe that a seed is not part of commercial good. A seed, according to the *Dayak Kanayant* community, for example, is common property owned by all member of community, including the knowledge related to such seeds.⁹⁴ Those perspectives are not essentially in keeping with the notion of plant varieties protection in which seed is considered as a trade commodity.

Indonesian *adat* communities share similar principles with the majority of people living in developing countries. Possey observed that *adat* communities believe that sharing and not keeping resources will bring power.⁹⁵ They believe that 'wealth comes from giving attitude, not from keeping and taking'. In a similar vein, Manuwoto argues that the ratification of the TRIPS Agreement is another form of cultural imperialism of developing countries such as Indonesia.⁹⁶ This is because the TRIPS Agreement represents the cultural spirit of developed nations, which is unknown under Indonesian *adat* culture.

Peluang' (*Adat Society* -based Natural Resources Management) (paper presented at *Pelatihan Pengelolaan Lingkungan Hidup Daerah*, the Centre of Environmental Research, Bogor Institute of Agriculture – IPB, 5 July 2002), 2.

⁸⁷ *ibid.*

⁸⁸ *ibid.*

⁸⁹ *ibid.* This system differs from one ethnic group to another in accordance with social and cultural conditions and the local type of ecosystem. Such groups generally have a system of knowledge and management of local resources inherited and developed continuously from their ancestors. For example, the *Adat* communities in Kimaan Island, Merauke Regency and Irian Jaya have been developing 144 cultivars of sweet potatoes, while Dani Ethnic, in Palimo, *Lembah Baliem*, has been developing 74 cultivars of sweet potatoes.

⁹⁰ Jhamtani Hira and Lutfiyah Hanim, 70 (n 35). See also this analysis on Nurul Barizah, 355 (n 30).

⁹¹ *ibid.*

⁹² *ibid.*

⁹³ *ibid.*

⁹⁴ *ibid.*

⁹⁵ Possey in M. Baumann (et al.) *The life Industry: Biodiversity, People and Profit* (World Wide Fund for Nature and SwissAid 1996).

⁹⁶ As cited in Hira Jhamtani and Lutfiyah Hanim, 46 (n 35).

According to the Western conception, an innovation will flourish thanks to economic incentives provided through intellectual property protection. From the perspective of local communities, innovation appears to develop from the courage to fulfil the needs of life. This means that innovation is not only born in scientific laboratories, but can suddenly develop everywhere, including in land farms and villages.⁹⁷ In Indonesia for instance, farmers in Kawarang, one of the regencies in West Java, sought to make a unique innovation from hybrid rice they cultivated for the purpose of obtaining a uniform result of the IR64 type-derivative.⁹⁸ The resulting product was called *Muncul* rice. Similarly, farmers in Subang and Indramayu, both being regencies in West Java, did the same but this process resulted in different types of rice. The farmers used a similar name as the earlier innovation with no objection from Kawarang farmers. This knowledge was also shared with many other farmers without any compensation. Every person can cultivate it, can develop its derivatives and disseminate it. The attitude of these breeders was that it is unnecessary to monopolize knowledge and resources to innovate something new and useful.⁹⁹

Accordingly, the ratification of UPOV 1991 is contrary to the Indonesian *adat* on seed, including its agricultural tradition and culture.

IV. THE INDONESIAN PVP ACT AND NATIONAL AGRICULTURAL INNOVATION

Prior to the existence of the PVP Act, R&D in the agricultural sector in Indonesia was publicly funded, primarily by the Agency for Agricultural Research and Development (AARD) of the Department of Agriculture. Consequently, the resulting R&D activities constituted a public good that everyone could use and reproduce for their own use and for commercial purposes, although the Government could have claimed ownership.

Moeljonopawiro, from the National Commission of Germ Plasm, contends that such a situation is not conducive to the development of a private sector seed industry for producing high quality seeds in Indonesia.¹⁰⁰ Research has shown that R&D in agricultural industries is still limited to creating hybrid varieties.¹⁰¹ The richness of biological resources in Indonesia is not being optimally utilized for breeding new varieties because there is little activity in the breeding process.¹⁰² Moeljonopawiro points out that, on average, there are few breeding activities for the development of new varieties in Indonesia, primarily on account of limited research funding, and their being solely dependent on government funding, along with limited

⁹⁷ *ibid* 42.

⁹⁸ Since the green revolution started in the late 1960s, most farmers in Indonesia cultivated hybrid rice (IR 64 type), which was developed by a research institution, and gradually they stopped using traditional types of rice. However, they still maintain *ketan* (glutinous rice), as this rice is usually needed by the society for ceremonial food. Farmers did not cultivate it on special land, but in between an IR 64-type. This method is known as *clingrik*.

⁹⁹ Hira Djamtani and Lutfiyah Hanim, 42 (n 35).

¹⁰⁰ Sugiono Moeljonopawiro, 'Perlindungan Varietas Tanaman: Kaitannya dengan Pengelolaan Plasma Nutfah dalam Pengembangan Varietas', 1. Available online at: <http://anekaplanta.wordpress.com/2008/01/13/perlindungan-varietas-tanaman-kaitannya-dengan-pengelolaan-plasma-nutfah-dalam-pengembangan-varietas/> (last accessed March 2012).

¹⁰¹ *ibid*.

¹⁰² *ibid*.

skilled breeders, lack of involvement by national seed industries, lack of appreciation and low salary for breeder researchers, lack of perception of the importance of the economic role of breeding activities, and lack of guarantee for the legal protection of new varieties.¹⁰³

The enactment of the PVP Act is intended to assist advanced agricultural development in Indonesia.¹⁰⁴ However, while the PVP Act entered into force 12 years ago, there is little evidence to suggest that this Act has enhanced agricultural innovation and R&D in Indonesia. Equally, private sector participation in R&D in the agricultural sector is barely noticeable.

Interestingly, in 1999, prior to the enactment of the Government Regulation on Transfer Technology, requiring higher education and R&D institutes to establish special units responsible for the implementation, management and transfer of technology of intellectual property and other R&D results¹⁰⁵, the Department of Agriculture had already established the Office for the Management of Intellectual Property and Transfer of Technology, known as *KP KIAT*. This Office was intended to be a bridge between the AARD and agribusiness.¹⁰⁶ However, such transfer of technology is largely inexistent.

Furthermore, a positive correlation between the PVP Act and an innovative spirit in the agricultural sector has yet to be demonstrated in Indonesia. Toto Sutater, the Director of *KP KIAT*, contends that it is difficult to examine whether the existence of intellectual protection in Indonesia stimulates researchers to carry out research, because the average knowledge of researchers about intellectual protection is still limited and the awareness to protect their innovation is still lacking.¹⁰⁷ In addition, Sutater states that there is a mismatch between the career of researchers in public institutions and the need to protect innovation under intellectual protection.¹⁰⁸ Some researchers argue that the outcome of publicly funded research should be the public good and accordingly, it should not be protected under an intellectual property regime.¹⁰⁹

Although, corporations are obliged to allocate part of their income to R&D according to the National System on R&D Act, most local agribusiness companies lack a budget for research. The cooperation between publicly funded research and seed industries is relatively slight and limited to an examination fund. So far, there has been no single agribusiness that has provided funding for developing new varieties.¹¹⁰

¹⁰³ *ibid* 1-2.

¹⁰⁴ See the Preamble point (a) of the Indonesian PVP Act (n 2).

¹⁰⁵ See further Article 16 of the Government Regulation of the Republic of Indonesia Number 20 of 2005 on the Transfer of Technology Intellectual Property and Result of Research and Development Activities by Higher Education and Research and Development Agencies (State Gazette of the Republic Indonesia Number 43 of 2005, Supplementary State Gazette Number 4497).

¹⁰⁶ It acts as a Centre for IPRs of the Indonesian Agency for Agricultural R&D and was established on the basis of a cooperation between the Agency for Agricultural R&D and the Indonesian Institute for Agricultural Research. It undertakes the management of intellectual property protection and transfers technology in the field of agriculture. It reaches out to the private sector (businessmen) with the aim of transferring technology commercially.

¹⁰⁷ The interview was conducted in his office in Bogor, Indonesia (the transcript is available upon request from the author).

¹⁰⁸ *ibid*.

¹⁰⁹ *ibid*.

¹¹⁰ *ibid*.

Otherwise, imported seeds have dominated the market because Indonesia is still unable to create high quality seed and most seed is of subtropical varieties for which Indonesia does not have germ plasma. Under Act No. 12 of 1992¹¹¹, the importation of seed is prohibited, except in the form of *benih bina* (breeder seeds).¹¹² In practice, the Directorate of Seeding Policy grants permission for the importation of seed if such seed has not yet been produced in Indonesia and it is superior compared to domestic seeds.¹¹³ This policy has thrown open the flow of imported seeds on the grounds that they are usually high yielding seeds that have not yet been produced in Indonesia. This practice may undermine the long-term future of seed development.

V. CONCLUSION AND RECOMMENDATION

A. CONCLUSION

Although Indonesia is not a member of UPOV 1991 as yet, the Indonesian PVP Act, including its examination manual, is largely based on UPOV 1991. Accordingly, most of the substantive parts of the Act are already in line with UPOV 1991. The recent effort to revise the Act is intended to pave the way for ratifying UPOV 1991 and bringing the Act into conformity with UPOV 1991 provisions. The obligation to ratify UPOV 1991 is enshrined in a bilateral agreement with Japan. However, ratification of UPOV 1991 seems inappropriate for Indonesia at this stage of its agricultural development.

The ratification of UPOV 1991 is contrary to the Indonesian *adat* on seeds, including its agricultural tradition and culture. Some ethnic groups believe that seeds and their related knowledge are not part of commercial goods, but constitute common property. The tradition of sharing resources, including seeds, has been part of traditional wisdom for many Indonesian communities for centuries. This tradition highlights the concept of common property, as well as the need to promote social harmony and avoid social envy.

The Indonesian PVP Act creates an imbalance of rights between breeders and farmers. Moreover, it provides the authority for the Government to control local plant varieties as a manifestation of the principle of sovereign control.¹¹³ However, it goes against ITPGRFA's principles regarding farmers' rights and the effort of the Convention on Biological Diversity to extend control of biological resources to local farmers and community.

The enactment of the PVP Act is intended to advance agricultural development in Indonesia. However, there is little evidence that the PVP Act has enhanced agricultural innovation and R&D in Indonesia. Similarly, private sector participation in R&D in the agricultural sector is barely noticeable. Thus, national agricultural R&D is still dominated by public research funding.

¹¹¹ The Act of Republic Indonesia Number 12 of 1992 on Crop Cultivation System (State Gazette of the Republic of Indonesia Number 46 of 1992, Supplementary State Gazette Number 3478).

¹¹² *ibid* Article 10 refers to the introduction from overseas conducted in the form of seed or *materi Induk* for plant breeding. Furthermore, Article 17(3) emphasizes that the importation of seed from overseas must satisfy the quality standard of *benih bina* (breeder seeds).

¹¹³ See the Directorate of Seeding and (Sarana Usaha) Policy. Available online at: <<http://ditjenbun.deptan.go.id>>

B. RECOMMENDATION

The Indonesian Government should undertake a comprehensive study or research, based on a consideration of the advantages and drawbacks of ratifying UPOV 1991 from a number of perspectives, particularly that of an agricultural nation. A similar study should also be conducted prior to entering into any new commitment such as a bilateral agreement. This study should include the legal consequences which may form the basis for justifying a policy to ratify UPOV or to amend the Act. The result of such a study should be made available to the public along with all stakeholders.

It is also important for the Government to increase the public's awareness of the protection of plant varieties, particularly for groups that have a strong influence on decision-making processes, such as the People's Representative Council, university students and the Indonesian Farmers' Association. This is largely because PVP is a new concept for many Indonesians.

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