Australian Journal of Asian Law, 2012, Vol 13 No 1, Article 1: 1-23

Plant Variety Protection and Traditional Agricultural Knowledge in Southeast Asia[1]

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This article provides an overview of the emerging plant variety protection (PVP) systems in Southeast Asia. The case studies are from countries that form part of the regional Association of Southeast Asian Nations (ASEAN), mainly Indonesia, Malaysia, Philippines and Thailand. The focus will be on the intersection between intellectual property rights (IPRs) and popular demands for the protection of the traditional knowledge (TK) of local communities. Factors that fuelled the emergence and shaped the content of the PVP laws were the obligation to comply with art 27(3)(b) of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement), aspirations for the development of the biotechnology industry, avoidance of possible sanction under the US 'Special 301' procedure, Free Trade Agreements (FTAs), the role played by the International Union for the Protection of New Plant Varieties (UPOV), technical assistance from UPOV member countries, membership of international biodiversity treaties and demands from civil society organisations for protection of TK. The PVP laws that resulted present an uneasy amalgam of conventional property rights with some aspects of protection of TK. It is very likely that the local communities claiming TK rights will face legal hurdles, in as much as government agencies implementing the law will face administrative and technical complications.

The Background to the Emergence of PVP Systems in Southeast Asia

The TRIPS Agreement[2] provided the impetus for the introduction of IPR regimes on plants in Asia. art 27(3)(b) required some form of mandatory IPRs for plants. Prior to TRIPS there were no IPR laws on plants in developing countries in Asia.

The relevant provision relating to plants in the TRIPS Agreement is art 27(3)(b):

> 3. Members may also exclude from patentability:
> (a) ….
> (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this sub-paragraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

Article 27(3)(b) provides considerable flexibility for Members to adopt different approaches to the patentability of inventions relating to plants and animals,[3] with the exception of micro-organisms, non-biological and microbiological processes for which patent protection is mandatory. Plants and animals, and 'essentially biological processes for the production of plants and animals' may be exempted from patent protection. Where patent protection is not provided for plant varieties, some

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1 The research for this article was conducted in the context of the 'IP in Asia' project of the Australian Research Council Centre of Excellence for Creative Industries and Innovation (CCI). The views expressed herein are those of the authors and not necessarily those of the Australian Research Council or CCI. The authors would like to thank an anonymous reviewer for helpful comments on an earlier draft of this article.

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2 *Agreement on Trade Related Aspects of Intellectual Property Rights* (TRIPS), Annex 1C to the *Agreement Establishing the World Trade Organization,* opened for signature 15 April 1994, 1869 UNTS 299 (entered into force 1 January 1996).

3 The negotiating history reveals that there were two approaches presented – the US, Japan, the Nordic countries and Switzerland wanted broad patent coverage for plants and living organisms. Most developing countries and the European Union rejected this approach. A plant variety may be patented in the US, Australia and Japan while this is not the case in Europe. See Stewart, 1993: 2294.

other 'effective' *sui generis* system of IPR protection or a combined patent and *sui generis* system must be provided.

The TRIPS choice of patents or *sui generis* PVP for plants was exercised by most developing countries in favour of *sui generis* PVP (a variation or copy of the Union for the Protection of New Plant Varieties (UPOV) Plant Breeders' Rights (PBR) model of 1978 or 1991). Indeed this was the recommendation from the many studies that had been done around the time that examined the options for national governments to develop IPR laws on plants in compliance with TRIPS. Some of the significant studies include Leskien and Flitner (1997), the Crucible Group (1994); the South Centre (1997); the International Plant Genetics Resources Institute (IPGRI) (1999); the Crucible II Group (2000 and 2001); the Coalition for Intellectual Property Rights (CIPR) (2002); Helfer (2002); and the United Nations Development Program (UNDP) (2003). The Crucible Group (1994) advised that it was not necessary to establish patent legislation for plant varieties to comply with TRIPS and recommended that those pursuing a patent model ensure there was a strong and clear research exemption. The South Centre, an inter-governmental organisation representing developing countries, rejected patent protection for plants outright. The reasons cited by the South Centre (1997: 42) provide an insight into why developing countries should eschew patents in favour of PVP:

> First, the patentee would be authorised, in principle, to prohibit the re-use of seeds by farmers, with the consequences that farmers' costs would rise and the dominance of large seed companies would be strengthened. Second, breeding based on protected varieties would be banned, while patent protection would not encourage the kind of innovation that generally takes place at the farm level. Third, the patenting of certain traits (e.g. higher oil content, disease resistance, higher yield, etc), or broad claims on genes, seeds and/or plants, may subject the production and marketing of important crops to monopoly rights. Fourth, patenting would contribute to further standardisation and reinforce the trend towards monoculture, both of which erode biodiversity. Patenting could also lead to increased concentration in farm ownership and in the seeds industry, with small and medium farmers and breeders likely to suffer the worst impact.

The IPGRI (1999) study called for IPR laws to balance the interests of all stakeholders (that is, farmers, the seed sector and biotechnology industries) against other national policy objectives and international obligations such as TRIPS and the *Convention for Biological Diversity* (CBD).[4] It was recommended that these countries design their IPR regimes ranging from the strongest to the weakest depending on whether their agricultural base is industrial, traditional/subsistence or a mixture of the two. The Crucible II Group reiterated the Crucible Group's 1994 recommendation to developing countries that they take full advantage of the flexibilities in the TRIPS Agreement, refuse patent protection for plants, retain the option to protect plant varieties by *sui generis* legislation, and that they need not have membership in any intergovernmental convention to have an effective *sui generis* law. The Crucible II Group developed model laws for *sui generis* IPRs for plant varieties and for biotechnological innovations. The CIPR (2002) study concluded that developing countries should consider different forms of *sui generis* systems for plant varieties because patents may place restrictions on the use of seeds by farmers and researchers. The UNDP (2003) report examined the IPR issues specifically in the context of international trade and human development. According to the report, developing countries are likely to be worse off under TRIPS if viewed from a human development perspective. The report calls for a complete revision of the TRIPS Agreement and for IPRs to be delinked from trade sanctions. The report advises that in the interim, developing countries should use the flexibilities in the TRIPS Agreement to adopt alternative *sui generis* systems that balance rights and obligations. The Leskien and Flitner (1997) study is a landmark work in the area of PVP, advising governments on the possible components of a *sui generis* PVP system, while taking into consideration the legal obligations imposed by TRIPS and the principles relating to plant genetic resources in the international laws. Helfer (2002) similarly advised national governments to exercise discretion in choosing a PVP system depending on their treaty ratifications and to balance the protection of IPRs against other societal objectives, such as encouraging biodiversity, facilitating access to plant genetic resources, recognising farmers' rights, promoting equitable

[4] *Convention for Biological Diversity* (CBD) opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993).

sharing of benefits and protecting TK.[5] Clearly, the consensus of the experts was that developing countries complying with TRIPS were better off opting for a *sui generis* PVP system for the protection of plant varieties in the light of their development status, societal needs, and treaty obligations in TRIPS, the CBD and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).[6]

There are today several possible permutations of models for IPRs on plant materials, including the US model of plant patents for asexually propagated plants[7] as distinct from patents; patents on plants or parts of plants or on plant varieties; *sui generis* PVPs, such as the UPOV PBR model and other models; and patents for DNA sequences, gene constructs and technologies employed in research on plant genomics (the scientific discipline of mapping, sequencing and analysing genomes) (CIPR, 2002: 59).

Southeast Asian countries were, for many years, notorious for IPR violations and they have been regularly targeted by demands for improvement from industrialised trading partners. They usually feature prominently on the Special 301 Reports (incorporating 'watch lists') of the Office of the United States Trade Representative (USTR). Intellectual property systems have been fundamentally reformed, however, and there are some interesting developments in the region. While other areas of intellectual property have sometimes a relatively long history in South-east Asian developing countries (Antons, 2006), the field of IPRs on plants is a recent addition and has to be seen in the context of the expansion of biotechnological research. Malaysia, following the example of its Multimedia Super Corridor for IT companies, launched the *National Biotechnology Policy* in 2005, which foresees a supportive IP framework, substantial investment incentives, subsidies and tax brackets for biotech companies (Siaw, 2007: 90–92). Thailand's National Centre for Genetic Engineering and Biotechnology adopted a policy in 2007 focusing on food and agriculture, medical care and community development, which will include higher value-added agricultural products and the encouragement of the local seed industry (Boonoon, 2007). Indonesia is described in a US Department of Agriculture (USDA) report as appearing to be 'at a point where serious consideration of biotechnology could come to the fore' (USDA FAS, 2009: 3).

In addition to biotechnology ambitions, there are also pressing immediate concerns regarding the limits to agricultural land (Asia Sentinel, 2012). Growing affluence has increased meat consumption resulting in more land being used for growing animal feed (Bittman, 2008). Most countries have attempted to profit from biofuels, with Indonesia and Malaysia accounting for 80 per cent of the world's palm oil production. Palm oil is one of the crops used in the production of biofuels. Biofuels absorb 40 per cent of US maize production (Graziano da Silva, 2012), 60 per cent of Europe's rapeseed crop and half of Brazil's sugarcane crop (Blas, 2012). The competition between the food, feed and fuel sectors and the current drought in the US have prompted the Director-General of the Food and Agriculture Organization (FAO) to ask for a temporary suspension of mandates on biofuels as they exist in the US (Graziano da Silva, 2012) and in Europe (Blas, 2012). In 2008, an extraordinary rise in food prices led to social unrest and food riots in some developing countries (Bradsher, 2008). The chief economist of the Asian Development Bank (ADB) said at the time that it was 'imperative that land and labour productivity is ratcheted up in agriculture' (Wheatley, 2008). Experts also regularly point out that the world population will soar to nine billion by mid-century and that food production must be doubled by 2050 (Black, 2012). As a consequence of such analysis, research into high yield and drought and pest resistant varieties and the question of the legal protection for the results of such research will remain urgent, but controversial, topics in ASEAN countries.

As far as biotechnology patents are concerned, we find the widest ranging scope of protection in the OECD member country Singapore. Singapore concluded an FTA with the US in 2003, which required UPOV membership and indirectly prescribed patent protection for plant varieties by eliminating the *sui generis* choice of art 27.3(b) of TRIPS.[8] At present, the only exclusion provisions in Singapore within the Patents Act 1995 (Singapore) (Chapter 221) relate to methods

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5 However, for a sceptical view of access and benefit sharing negotiations, see De Jonge and Louwaars, 2009: 37–56; Louwaars, 2006.

6 *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA). opened for signature 4 November 2001 (entered into force 29 June 2004).

7 Plant Patent Act 1930, 35 USC 161. See also Aoki, 2008: 30–34.

8 See art 16.7(1) of the US-Singapore FTA 2003: 'Each Party may exclude inventions from patentability only as defined in Articles 27.2 and 27.3(a) of the TRIPS Agreement.'

of medical treatment (section 16(2)) and to inventions with 'offensive, immoral or anti-social' effect (section 13(2)).

The other major ASEAN economies all use the TRIPS formula with slight variations to exclude plants and animals and essentially biological processes for the production of plants and animals from patentability, meaning (in turn) that non-biological and biotechnological processes are patentable. Section 22.4 of the *Intellectual Property Code of the Philippines* may be taken as an example.[9] It foreshadows further *sui generis* laws for plant varieties and community intellectual rights.[10] A Draft Bill for Community Intellectual Rights Protection has been pending in the Philippine Senate for many years. In its absence, the main legislation that includes community intellectual rights is the Indigenous Peoples Rights Act of 1997 Republic Act No 8371 (Philippines), which also grants title to ancestral domains. Because of this land rights component, it faced a constitutional challenge, which it only narrowly survived (Antons, 2007: 11). The constitutional challenge resulted in a moratorium on further land claims and the Act remained in fact unimplemented for a number of years (Eder and McKenna, 2004: 69).

The Philippines was one of the first countries to introduce a regulation on bioprospecting. Executive Order No 247, however, yielded only two approvals for research agreements between 1995 and 2001 (Swiderska, Dano and Dubois, 2001: 28). The Arroyo government replaced it with new executive orders and acts, aimed at harmonisation of the Indigenous Peoples Rights Act of 1977 with environmental and natural resources laws and policies. The final result was a Joint Administrative Order No 1 of 2005 of various departments, which imposed a completely new set of guidelines. These guidelines apply to all bioprospecting in the Philippines and require bioprospectors to enter into a Bioprospecting Undertaking with the Secretary of the Department of Agriculture or the Department of Environment. While representatives of resource providing communities negotiate the details of the benefit sharing agreement, bioprospecting fees are collected by the national government, and they may be higher where traditional knowledge is involved. Where collection is from ancestral domains, the fee is, however, to be used in accordance with the Indigenous Peoples Rights Act of 1977 (Antons, 2010: 116–19).

Records of the National Commission on Indigenous Peoples (NCIP) cited in the Philippines' *4th National Report to the Convention on Biological Diversity* of 2009 show that by 2007, indigenous communities had benefitted from 199 projects in various areas but that, until 2009, no access application had been processed under the 2005 bioprospecting guidelines of the Joint Administrative Order No 1. Reasons identified included a lack of applications, and the perception that regulation was restricting research and that the royalty provisions were a disincentive to research (Republic of the Philippines, 2009: 65).

Plant variety legislation is a further field where countries mix intellectual property rules and traditional knowledge. Plant variety Acts in ASEAN were often introduced in packages with other IPR laws around the turn of the millennium to meet the TRIPS deadline for developing countries and to fulfil the requirements of art 27.3(b). Of the 10 ASEAN countries, only two — Brunei and Myanmar – have not enacted PVP laws. With the exception of Singapore, the other seven countries have exercised the choice given in art 27.3(b) of TRIPS in favour of plant variety protection. The current laws are the Plant Variety Protection Act 1999 (Thailand); Law No 29 of 2000 concerning Plant Variety Protection (Indonesia); the Philippine Plant Variety Protection Act of 2002 Republic Act No 9168; the Protection of New Plant Varieties Act 2004 (Malaysia); the Plant Variety Protection Act 2004 (Singapore); the Law on Intellectual Property 2005 (Vietnam), which in Part Four deals with plant variety protection; the Law on Seed Management and Breeders' Rights of 2008 (Cambodia); and the Law on Intellectual Property of 2008 (Lao PDR).

Sui Generis PVP Laws in ASEAN

The process of development of *sui generis* PVP laws in the ASEAN countries was influenced by both domestic as well as external pressures and influences. In this part, the extent and impact of these pressures on the final shape of these PVP laws will be discussed (Kanniah, 2011).

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9 Section 22(4) excludes 'plant varieties or animal breeds or essentially biological processes for the production of plants and animals. This provision shall not apply to micro-organisms and non-biological and microbiological processes.'

10 Section 22(4) also states: 'Provisions under this subsection shall not preclude Congress [from considering] the enactment of a law providing sui generis protection of plant varieties and animal breeds and a system of community intellectual rights protection'.

US s.301 and the ASEAN countries

The United States played a major role in ensuring compliance of its trading partners with TRIPS. It employed a 'divide and conquer' strategy during the General Agreement on Tariffs and Trade (GATT) negotiation process by using the Generalised System of Preferences (GSP) as a 'carrot' and the Special 301 process as a 'stick' (see Drahos and Braithwaite, 2002: 86).[11] Countries favouring TRIPS were rewarded with GSP, while those opposing were subject to the Special 301.[12] Between 1986 and 1993, the US moved against so-called 'hardline' developing country members opposed to intellectual property in the GATT — Argentina, Brazil, Chile, Colombia, Cuba, Egypt, India, Indonesia, Malaysia, Mexico, Nicaragua, Nigeria, Peru, Tanzania, Thailand**,** Uruguay, Venezuela and Yugoslavia (Drahos, 2002: 775). Countries receiving favourable GSP packages because they had improved their intellectual property protection were Hong Kong, Singapore and South Korea, coincidentally also members of the TRIPS Negotiating Group (Drahos, 2002: 775).

Bilateral pressures were for a while overshadowed by the implementation efforts of the countries with regards to TRIPS. The main interest was at first in trade mark counterfeiting and copyright piracy. Intellectual property in agriculture received relatively little attention. Nevertheless, the threat of US reprisals in other IP areas prompted some of the ASEAN countries to take their TRIPS obligations under art 27(3)(b) seriously. As it turned out, forum shifting[13] to bilateral FTAs became an easier route to getting countries to comply with TRIPS art 27(3)(b) (Drahos, 2002: 775).

Biodiversity and PVP

The *sui generis* PVP laws of several of these countries were influenced by the international agreements relating to biodiversity and plant genetic resources that these countries acceded to, that is, the Convention on Biological Diversity (CBD) and the International Treaty on Plant Genetic Resources for Food and Agriculture (IPTGRFA).

Concepts such farmers' rights,[14] prior informed consent (PIC),[15] access and benefit sharing (ABS),[16] origin/source of plant genetic resources[17] and TK, all of which surfaced during the

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11 For the impact on the IP systems of ASEAN countries at the time, see Antons, 1991: 78–84.

12 Under the US GSP program, designated beneficiary countries are able to export eligible products to the US on a duty free basis. When it began in 1976, protection of IPRs was not a criterion for eligibility for the GSP. This was changed in 1984. Under the Special 301, the Office of the US Trade Representative (USTR) publishes an annual report of countries that denied adequate and effective protection for IPRs or that denied fair and equitable market access to US intellectual property owners. The USTR lists countries on the 'priority foreign country list', 'priority watch list' or 'watch list'. Countries move up from the watch list to the priority foreign country list depending on how well they improve their IPR performance. Countries are subject to sanctions if they do not take remedial action.

13 Drahos uses the term 'forum shifting' in reference to the strategy of the US moving its expansionist IP agenda from WIPO, UNCTAD and UNESCO in the 1980s where it was facing opposition from developing county coalitions to the GATT where it was more influential and expected to be more successful in achieving its agenda. More recently, the US and other developed countries have shifted to bilateral FTAs with developing countries to secure compliance with TRIPS and, sometimes, higher so-called 'TRIPS plus' standards.

14 The term 'farmers' rights' was coined by Pat Roy Mooney and Cary Fowler in the 1980s to highlight the unrecognised contribution of farmers as donors of germplasm as opposed to the formal protection of the rights of commercial plant breeders with IPRs. The political concept of farmers' rights endorses the role of farmers as conservers, breeders and cultivators of plant genetic resources and as custodians of biodiversity for the benefit of humanity. See Mooney, 1983; Fowler, 1984. According to art 9.2 of ITPGRFA, farmers' rights include protection of TK, equitable sharing of benefits and participation at the national level on matters related to the conservation and sustainable use of plant genetic resources. For more resources on the concept of farmers' rights, see Farmers Rights Project, 2012.

15 PIC was first recognised as an international legal principle in 1989 in the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (opened for signature 23 March 1989, 1673 UNTS 57 (entered into force 3 May 1992)). Since then it has been incorporated in the 1998 Rotterdam Convention on Prior Informed Consent for Certain Hazardous Chemicals and Pesticides in International Trade (opened for signature 11 September 1998, 2244 UNTS 337 (entered into force 24 February 2004)) and in the Cartagena Protocol on Biosafety (Cartagena Protocol to the Convention on Biodiversity, opened for signature 15 May 2000, 2226 UNTS 208 (entry into force 11 September 2003)). See Oliva and Perrault, 2005: 17. Article 15(5) of the CBD states that access to genetic resources shall be subject to the PIC of the Contracting Party providing such resource, unless otherwise determined by that party.

16 Since the adoption of the CBD, ABS has been evolving as a legal concept, at the discussions of the subsequent Conference of Parties to the CBD. ABS was conceived as an economic incentive for developing countries to conserve biodiversity as well as to promote equity and sustainable development by ensuring that donor countries received the benefits from the utilisation of their plant genetic resources. The concept envisages not only inter-state benefit sharing

negotiation process and were intensely debated in the subsequent deliberations on the implementation of these international laws, found their way into the national *sui generis* PVP laws of these countries.

The CBD advocates bilateral arrangements between countries providing plant genetic resources and countries using plant genetic resources, while the ITPGRFA promotes free access within a multilateral framework. UPOV's International Convention for the Protection of New Varieties of Plants (UPOV Convention (of 1961, 1972, 1978, 1991))[18] and TRIPS, on the other hand, promote private property rights over these resources. The philosophical conflicts between these international agreements were transposed in the national PVP laws as countries attempted to reconcile the conflicting interests of the different stakeholders, those being commercial plant breeders, indigenous farmers, owners of TK and so on.

With the exception of Thailand, which ratified the CBD in 2004, the other ASEAN countries became parties to the CBD before they enacted their *sui generis* PVP laws: the Philippines in 1993; Indonesia, Laos, Malaysia and Vietnam in 1994; Cambodia and Singapore in 1995.

Indonesia (2006), Malaysia (2003) and the Philippines (2006) are contracting parties to the ITPGRFA. (Thailand has signed but has not ratified the ITPGRFA, while Cambodia, Laos, Singapore and Vietnam are not contracting parties). The ITPGRFA was the culmination of several non-binding undertakings and resolutions adopted at the Food and Agriculture Organization conferences in the 1980s and 1990s. Among these resolutions were the International Undertaking on Plant Genetic Resources (Resolution 8/83);[19] Agreed Interpretation of the International Undertaking (Resolution 4/89);[20] and Farmers Rights (Resolution 5/89),[21] where the concept of farmers' rights had been the subject of contentious debate and compromise.

While several of the ASEAN countries were in the midst of developing their PVP laws, they were also no doubt influenced by the position of the ASEAN grouping in relation to biodiversity and TRIPS art 27(3)(b). In 2000, the ASEAN Working Group for Nature Conservation and Biodiversity drafted the ASEAN Framework Agreement on Access to Biological and Genetic Resources (Draft ASEAN Framework Agreement 2000).[22] Drafted as a follow up to the CBD to establish harmonised regional access regimes for plant genetic resources, the Draft ASEAN Framework Agreement of 2000 affirmed the principles of national sovereignty over biological and genetic resources, PIC, fair and equitable sharing of benefits, and establishes the Common Fund for Biodiversity Conservation (art 12). All these principles are in conformity with the CBD. The Draft ASEAN Framework Agreement at the time also provided that ASEAN Member States 'shall not allow the patenting of plants, animals, micro-organisms or any parts thereof, and traditional and indigenous knowledge' (art 4), thereby effectively removing the patenting option under TRIPS art 27(3)(b). Interestingly, however, this general prohibition of patenting has been

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but also intra-state benefit sharing between the state and local communities. See Articles 8(j) and 15(7) of the CBD. Also see *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization* 2002; De Jonge and Louwaars, 2009.

17 Article 2 of the CBD defines 'country of origin of genetic resources' as 'the country which possesses those genetic resources in *in situ* conditions' and 'country providing genetic resources' as 'the country supplying genetic resources collected from *in situ* sources, including populations of both wild and domesticated species or taken from *ex situ* sources, which may or may not have originated in that country'. See also art 15(3) of CBD. There is much controversy over the meaning of 'disclosure of origin' and 'disclosure of source' of plant genetic resources: see Correa, 2003; Correa, 2005; GRAIN, 2005; Smolders, 2006;Dutfield, 2005.

18 International Convention for the Protection of New Varieties of Plants, opened for signature 2 December 1961 (entered into force 10 August 1968). For text: UPOV, Act of 1961 International Convention for the Protection of New Varieties of Plants, adopted by the Diplomatic Conference, 2 December 1961 <http://upov.int> . Also UPOV, Act of 1978 International Convention for the Protection of New Varieties of Plants of 2 December 1961, as revised at Geneva on 10 November 1972, and on 23 October 1978; UPOV, Act of 1991 International Convention for the Protection of New Varieties of Plants of 2 December 1961, as revised at Geneva on 10 November 1972, on 23 October 1978, and on March 19, 1991. <UPOV http://upov.int>. The 1972 revised text is available upon request.

19 FAO Res 8/83, *Report of the Conference of FAO*, 22nd sess, Rome, 5–23 November 1983, UN Doc C/83/REP (1983).

20 FAO Res 4/89, *Report of the Conference of FAO*, 25th sess, Rome, 11–29 November 1989, UN Doc C/89/24 (1989).

21 (FAO Res 5/89, *Report of the Conference of FAO*, 25th sess FAO Conference, Rome, 11–29 November 1989, UN Doc C/89/REP (1989).

22 For copy of the draft text of ASEAN Working Group for Nature Conservation and Biodiversity, ASEAN Framework Agreement on Access to Biological and Genetic Resources, Draft text, 24 February 2000, see Weeraworawit, 2004: 220–6 [Appendix 2]; or Japan Bioindustry Association, Research Institute of Biological Resources <www.mabs.jp/countries/others/pdf/32/e.pdf>.

removed from a further draft of the text agreed upon in 2005 (Draft ASEAN Framework Agreement 2005).[23]

In the case of Indonesia, Malaysia and the Philippines, their membership in the Group of Like-Minded Megadiverse Countries (LMMC), launched on 19 February 2002 in Cancun (Mexico) no doubt also influenced their PVP laws. The LMMC aims to present a united front in all international negotiations on biodiversity, in particular the protection of traditional knowledge, access to genetic resources and the fair and equitable sharing of benefits derived from their use (Cancun Declaration of Like-Minded Megadiverse Countries).[24]

An interesting trend to note in these countries is the speed with which they rushed to implement TRIPS obligations by enacting a myriad of IP laws including PVP laws, while efforts to enact biodiversity legislation lagged behind. This is in spite of the fact that most of these countries acceeded to the CBD before TRIPS. Curiously, some of these countries are centres of biodiversity and one would have imagined that conservation and protection of their biological resources and TK would be regarded as at least equally important to IPRs.

Thailand has a draft National Regulation on Criteria and Method for Access and Benefit Sharing of Biological Resources still awaiting approval.[25] Indonesia and Philippines do not have a biodiversity law, but have administrative regulations with details of ABS and PIC, which, in the case of the Philippines, is also regulated in the Indigenous Peoples Rights Act of 1997. In 1998, Malaysia launched its National Policy on Biodiversity and in 2001, the National Biodiversity and Biotechnology Council was established. Though the first draft of the Biodiversity Bill was completed in October 1999, and has gone through several re-drafts, it has not been passed to date. Apparently, the Biodiversity Bill is delayed as a result of conflict between Federal and State jurisdiction (land and natural resources are state matters under the Federal Constitution). Other contentious issues yet to be resolved are IPRs and TK. In the meantime, the East Malaysian states of Sabah and Sarawak have enacted their own biodiversity laws — the Sabah Biodiversity Enactment 2000 and the Sarawak Biodiversity Center Ordinance 1997.[26]

TRIPS and PVP

The governments of Indonesia, Malaysia, Philippines and Thailand cited the TRIPS Agreement as the main reason for enacting their PVP laws.[27]

In Thailand, the Director of PVP and academics serving on the PVP drafting committee confirmed that Thailand passed its PVP Act to comply with TRIPS.[28] In Indonesia, the Explanatory Memorandum on the Preamble of the Indonesian PVP Act states that the TRIPS Agreement requires Indonesia to introduce plant variety protection. In the Philippines, there were two purposes cited for enacting the Bill: (1) 'The Bill seeks to protect and secure the exclusive rights of plant breeders through an effective intellectual property system in agriculture', and (2) 'Comply with WTO-TRIPS agreement'.[29] In Malaysia, the Protection of New

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23 Draft ASEAN Framework Agreement on Access to, and Fair and Equitable Sharing of Benefits Arising from the Utilisation of, Biological and Genetic Resources, as agreed at the 15th Meeting of the AWGNCB 2005, For text, see Southeast Asia Regional Capacity Building on Access and Benefit-Sharing, Regional Workshop on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS): Understanding the Nagoya Protocol, 25–26 October 2011 <http://abs.aseanbiodiversity.org>.

24 For text of the Cancun Declaration of Like-Minded Megadiverse Countries, UN Doc UNEP/CBD/COP/6?INF/33, 21 March 2002 ,<www.cbd.int/doc/meetings/cop/cop-06/information/cop-06-inf-33-en.pdf > . < See, re the formation of the LMMC, Stevenson, 2002. The other members of the group are Bolivia, Brazil, China, Colombia, Costa Rica, Democratic Republic of Congo, Ecuador, Kenya, Mexico, Peru, South Africa and Venezuela.

25 However, implementing mechanisms for access and benefit sharing have been included in the Plant Varieties Act 1999, Fisheries Act and the Protection and Promotion of Thai Traditional Medical Intelligence Act 1999. See CBD, 'Country Profile – Thailand' <www.cbd.int/countries/> accessed 19 June 2012.

26 See CBD, 'Country Profile – Malaysia <www.cbd.int/countries/> accessed 19 June 2012. See also Mohamad et al, 2006.

27 The deadline for developing countries to comply with the TRIPS Agreement was 1 January 2000. See art 65(2) and (3) of the TRIPS Agreement. For least developed countries, the original deadline was 2006, see art 66(1) of the TRIPS Agreement, but the TRIPS Council was authorised to extend this period. In 2005, this deadline was extended to 1 July 2013, see Dutfield and Suthersanen, 2008: 38.

28 Interviews with Mr. Wichar Thitiprasert, Plant Variety Protection Division, Department of Agriculture (Bangkok, 10 June 2003), and Dr Jakkrit Kuanpoth, Faculty of Law, Sukhothai Thammathirat Open University (Bangkok, 6 June 2003). Dr Kuanpoth was a member of Thailand's PVP Bill drafting committee.

29 Fact Sheet, House Bill No 4518, Twelfth Congress, First Regular Session, Committee Report No 273, submitted to the Committee on Agriculture, Food and Fisheries and the Committee on Appropriations, 5 March 2002. The explanatory

Plant Varieties Bill 2003 stated that the Bill 'is in line with Malaysia's obligation' under the TRIPS Agreement.

The TRIPS Agreement explicitly states that art 27(3)(b) is to be reviewed four years after the Agreement entered into force in 1995, that is, in 1999. The *Doha Ministerial Declaration* 2001[30] enlarged the scope of the review of art 27(3)(b) to include an examination of the relationship between TRIPS and the CBD, protection of TK and folklore. The review was 'to be guided by the objectives and principles set out in Articles 7 and 8 of the TRIPS Agreement'[31] and 'to take fully into account the development dimension'.

The review process of art 27(3)(b) has seen many divergent viewpoints expressed at the WTO TRIPS Council. Many developing countries, including the ASEAN countries, had not even commenced, or were still in the early stages of, development of their PVP laws when the TRIPS review commenced in 1999.[32] The debates on the inclusion of PIC, ABS, and TK in art 27(3)(b) at the TRIPS Council would therefore have to some extent influenced the national PVP laws of WTO member states in the ASEAN region, as some of these countries were active participants in the group of developing countries at the WTO.

UPOV in ASEAN

The TRIPS Agreement makes reference to the Paris and Berne Conventions but not to UPOV's International Convention for the Protection of New Varieties of Plants of 1978 and 1991.[33] Scholars have interpreted this to mean that either the UPOV Conventions or any other *sui generis* system would be acceptable.[34] But this has not deterred UPOV from claiming that its PVP system is 'the only internationally recognised *sui generis* system for the protection of plant varieties" and it 'expects that many developing countries will choose the UPOV system as their model for an effective *sui generis* system of protection' (UPOV, 1998).[35]

Since the adoption of TRIPS, UPOV has been actively promoting its PBRs model law throughout Asia.[36] Yet relatively few countries from Asia are members of UPOV. Of the 70

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notes to Senate Bills Nos 62 and 967 and House Bills Nos7951, 1070, 815, 721, and 202 all refer to the TRIPS Agreement as the imperative for enactment of the Bill.

30 *Ministerial Declaration*, adopted 14 November 2001, 4th WTO Ministerial, Doha. UN Doc WT/MIN(01)/DEC/2 (20 November 2001) (Doha Declaration 2001).

31 Article 7 of TRIPS refers to the objectives of IPRS as contributing 'to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations'. Article 8 sets out the principles that states may 'adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development' and that there should be appropriate measures to address abuse of IPRs by rights holders that distort trade or affect transfer of technology.

32 See *Review of the Provisions of Article 27.3(B) – Summary of Issues Raised and Points Made*, Note by the Secretariat, Revision, UN Doc IP/C/W/369/Rev.1, 9 March 2006; ; *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity – Summary of Issues and Points Made*, Note by Secretariat, Revision, UN Doc IP/C/W/368/Rev.1, 8 February 2006; *The Protection of Traditional Knowledge and Folklore – Summary of Issues Raised and Points Made*, Note by Secretariat, Revision, UN Doc IP/C/W/370/Rev.1, 9 March 2006.

33 The negotiating history of the TRIPS Agreement does not explain this difference in treatment. According to Watal, this could be due to the fact that UPOV 1991 had not entered into force; a reference to UPOV 1978 was considered inadequate, while a reference to UPOV 1991 was considered premature. Also, there was no agreement among industrialised countries as to the details of an effective *sui generis* system of protection for plant varieties. See Watal, 2001: 140. Similarly, Helfer suggests that it is likely that compliance with UPOV was not required because so few WTO members were party to UPOV, and those that were could not agree whether the UPOV Convention 1978 or 1991 should serve as the standard for protection. See Helfer, 2002: 22–3

34 Nevertheless, there was a marked increase in the number of countries gaining UPOV membership after 1995 when the TRIPS Agreement came into force (Helfer, 2002). In the 10 years to 2006, there were an additional 35 new members added compared to only 28 members acceding to ratifying UPOV in the 27 years to 1995 (UPOV, 2012, 1–2). This could be attributed to not only UPOV promoting its PVP system as the only effective *sui generis* international PVP system in operation but also coercion by the US, EU and Japan through their bilateral FTAs with developing countries.

35 For a report on the role of UPOV in promoting its PBR model, see Dutfield (2011).

36 UPOV organised regional seminars on 'The Nature and Rationale for the Protection of Plant Varieties under the UPOV Convention' in 1990 (Tokyo), 1991 (Tsukuba), 1992 (Suweon), 1993 (Beijing), 1995 (Medan) and 1996 (Bishkek). UPOV also conducted 11 national seminars in Asia in Beijing, Harbin, Xian, Nanjing, Jakarta, Kuala Lumpur, Manila, New Delhi, Dhaka and Hanoi. In addition, UPOV conducted technical guidance workshops in 1997 (Brisbane), 1998 (Cambridge), 1999 in Kunming, and Cambridge; Asian Regional Technical Meetings in 2000 (Tsukuba), 2001 (Beijing), 2002 (Seoul), 2003 (Manila), and 2004 (Hanoi); National Technical Seminars in Manila, Singapore, Serdang, New Delhi (2), Peradeniya, Jakarta, Bangkok, Vientiane, Hanoi, Cuttack, Hyderabad, Pune, Phnom Penh (2), Ho Chi Minh City

members of UPOV, there are only five East and Southeast Asian countries that are currently members of UPOV (in addition to eight countries from North, West and Central Asia). In total, there are currently 14 countries in East, Southeast and South Asia with PVP laws in force: five are members of UPOV and nine are not. The five members (with their earliest enacted PVP legislation footnoted) are Japan,[37] China,[38] South Korea,[39] Singapore[40] and Vietnam.[41] The nine non-members (with their relevant PVP legislation footnoted) are Hong Kong (1997), [42] Thailand (1999), Indonesia (2000), India (2001), Philippines (2002), Taiwan (2004),[43] Malaysia (2004), Cambodia (2008), and Laos (2008). In respect of the ASEAN member countries, of the eight countries with PVP laws, only two are members of UPOV, namely Singapore and Vietnam.

UPOV's role in assisting the ASEAN countries to develop their PVP laws began with organising national workshops in these countries, usually funded by an Asian UPOV member. Japan funded these initiatives in Malaysia and the Philippines.

The year 1994 saw a number of UPOV national workshops in Asian countries. In Thailand, UPOV organised a national workshop to promote its model of PVP legislation. UPOV advised the Thai Ministry of Agriculture and Cooperatives on the drafting and implementation of the PVP Act.[44]

The national workshop in the Philippines was organised in cooperation with the Philippines Department of Agriculture, and the College of Agriculture of the University of the Philippines Los Baños, with the financial assistance of the Ministry of Agriculture, Forestry and Fisheries, Japan. The momentum for the enactment in the Philippines of a law on plant variety protection based on the UPOV Convention 1991 began with this workshop.[45] According to Barry Greengrass (then Vice Secretary-General of UPOV), '1994 for UPOV is a year of national seminars. Such seminars have already been held in China, Indonesia, Malaysia, Pakistan, Thailand and now we find ourselves in the Philippines' (Greengrass, 1994: 1).

In a similar manner Malaysia, UPOV, the Ministry of Agriculture, Forestry and Fisheries, Japan, and the Department of Agriculture of Malaysia organised a 'National Seminar on the Nature and Rationale for the Protection of Plant Varieties' in Kuala Lumpur on 1 December 1994. Over 90 participants representing the public and private sector, growers' associations and NGOs attended.[46]

UPOV has relentlessly and continuously been engaging with these countries since they passed their PVP laws. Its *modus operandi* is to maintain dialogue with these countries' governmental agencies, principally the Departments of Agriculture. Where this is not producing the desired outcomes, the agency responsible for intellectual property protection is approached. UPOV has also been supporting the newly established PVP offices in these countries with technical training for their staff, even though these are normally services accorded only to its member countries. UPOV's engagement also includes a wider audience of stakeholders in these countries to educate them of the benefits of the UPOV PVP system. UPOV annual reports track

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and Yangon. To date, UPOV has continued to organise such national stakeholder seminars, as well as regional technical training workshops, not just in Asia but all over the world.

37 Plant Variety Protection and Seed Act 1998 (Japan).

38 Regulations of the People's Republic of China on the Protection of New Varieties of Plants 1999 (PRC) (entered into force 1997) PVP Gazette 85, October 1999; Implementing Rules for the Regulations of the People's Republic of China on Protection of New Varieties of Plants (Forestry Part) 1999 (PRC); Implementing Rules for the Regulations of Peoples Republic of China on Protection of New Varieties of Plants (Agriculture Part) Decree of the Ministry of Agriculture, Decree No 13, 27 April 1999.

39 Industry Seed Law 1997 (Republic of Korea), sometimes referred to as the Plant Varieties Protection Law of Korea 1997.

40 Plant Varieties Protection Act, Act 22 of 2004 (Singapore).

41 Ordinance on Plant Varieties (Order No 03/2004/L-CTN of 5 April 2004 (Viet Nam); Intellectual Property Law, Law No 50/2005/QH11 [Rights for the Plant Variety] 2005 (Viet Nam).

42 Plant Varieties Protection Ordinance 1997 (Hong Kong). Following the transfer of sovereignty from the UK to the PRC in 1997, this has been superseded by Chapter: 490 Plant Varieties Protection Ordinance (PRC). Full text available at WIPO Lex <www.wipo.int/wipolex/ >.

43 Plant Variety and Plant Seed Act 2004 (Republic of China [Taiwan]).

44 Interview with Mr Wichar Thitiprasert, Plant Variety Protection Division, Department of Agriculture (Bangkok, 10 June 2003).

45 Interview with Elpidio V Peria, Policy Officer, SEARICE (Quezon City, 29 October 2003).

46 Interview with Mr Chan Han Hee, Director, Department of Agriculture, Malaysia (Kuala Lumpur, 11 December 2004).

the number of countries it has engaged, PVP laws drafted, commented on conformity of their PVP laws with the UPOV Conventions, and reported new members acceding to UPOV.

A sampling of UPOV's 'engagement' in some of the ASEAN non-UPOV member countries since they passed their PVP laws demonstrates UPOV's earnest efforts to embrace these countries within its fold.

Malaysia took the position that it would seek UPOV's views on the conformity of the Malaysian PVP Act with the UPOV Convention 1991, before considering further action.[47]

Barely four months after the Malaysian PVP Act was gazetted, the Department of Agriculture notified the Council of UPOV 'that Malaysia has the intention to join the UPOV fraternity in due course', and sought a preliminary examination of the conformity of the Malaysian PVP Act to the UPOV Convention 1991.[48] On 8 April 2005, UPOV issued its advice to the Malaysian authorities that 'the Act still requires some additional provisions and amendments' in order to fully conform with the UPOV Convention 1991. Malaysia would only be able to deposit its instrument of accession when these revisions had been made to the satisfaction of UPOV.[49] UPOV's response to the Malaysian PVP Act was to be expected. Among the obvious provisions that UPOV sought to have removed were: the mandatory requirement for information in applications for PVP such as disclosure of source, PIC, compliance with laws regulating biodiversity and biosafety (at 3–4); and the limitation of the breeders' right with respect to exchange of reasonable amounts of propagating materials among small farmers (at 5 [25]). It also asked that the provisions relating to instances when compulsory licensing may be exercised be limited to 'public interest' (at 6 [29]). In addition, UPOV objected to a provision that makes Malaysia's PVP Act unique, that is, the provisions relating to the breeders' right for the protection of plant varieties bred or discovered and developed by a farmer, local community of indigenous people and the conditions for protection of such plant variety (at 6). UPOV's reasons for opposing this was because it 'is restricted to a particular group of applicants and relates to a different subject matter and conditions for protection, and has a different period of duration …, it would be preferable to provide for a different name for this right and to deal with this separate system of protection, in for example, a new part of the Act' (at 3 [10]). UPOV rejected outright the new breeders' right granted to farmers, local community or indigenous people as equivalent to its plant breeders' right which it declared to be not in conformity with the UPOV Convention 1991. In spite of UPOV's advice to Malaysia, the Malaysian PVP Act came into force on 1 January 2007 without any changes to the text as passed in 2004.

In the Philippines, on 2 November 2006, the Acting Registrar of the Plant Variety Protection Office, Philippines notified UPOV of its intention to adhere to the UPOV Convention 1991 and requested advice on the conformity of the Philippines 2002 PVP Act with the UPOV Convention 1991.[50] UPOV advised the government of the Philippines that 'the law incorporates the majority of the provisions of the 1991 Act, but still needs some clarifications and amendments' (UPOV, 2007b).[51] However, the clarifications and modifications sought by UPOV were not major, except for one provision relating to farmer's privilege (at 5). The small window for farmers to exercise their traditional rights under the Philippines PVP Act will be closed if the Philippines agrees to remove the farmers' privilege provision. As the Philippines PVP Act is more or less a carbon copy of the UPOV Convention 1991, save for the farmers' privilege exception, it is most likely that the Philippines will accede to UPOV.

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47 Interview with Mr Chan Han Hee, Director, Industrial Crops and Floriculture Division, Department of Agriculture, Malaysia (Kuala Lumpur, 11 August 2004). See also Parliamentary Debate on the Protection of New Varieties of Plants Bill 2004 in Malaysia, Perbahasan Parlimen, Dewan Rakyat, Parlimen Kesebelas, Penggal Pertama, Jid. 6, Bil. 14 Jun –18 Julai 2004, 123.

48 Letter dated 10 November 2004 from the Deputy Director General 1, Department of Agriculture, Malaysia to the Vice Secretary General of UPOV.

49 See UPOV (2005a). 'Examination of the Conformity of the Protection of New Plant Varieties Act 2004 of Malaysia with the 1991 Act of the UPOV Convention', Twenty-Second Extraordinary Session, Geneva April 8, 2005. Geneva: 2 February 2005, C (Extr.)/22/2.

50 Letter dated 2 November 2006 from the Acting Registrar of the Plant Variety Protection Office, Department of Agriculture, the Philippines to the Secretary General of UPOV.

51 UPOV (2007b). 'Examination of the Conformity of the Philippines Plant Variety Protection Act of 2002 with the 1991 Act of the UPOV Convention', Twenty-Fourth Extraordinary Session, Geneva, March 30, 2007. Geneva: 5 March 2007, C (Extr.)/24/2.

Indonesia sought UPOV's comments on the conformity of its draft PVP Act with the UPOV Convention 1991 even before the law was passed (UPOV, 2001: 17).[52] That the Indonesian PVP Act would largely mirror the UPOV PVP model was predictable. On 12 May 2006, UPOV held a meeting in Jakarta with 20 government officials, including the Director and staff of the Center for Plant Variety Protection. The matters discussed included comments on the Indonesian PVP Act with regard to its conformity with the UPOV Convention 1991 (UPOV, 2007a).[53] A year later, Indonesia signed an Economic Partnership Agreement with Japan, requiring it to accede to the UPOV Convention 1991 (Biotani Indonesia Foundation, 2007). The Indonesian government now has an additional reason to accede to UPOV, since this is an obligation of its agreement with Japan. Given the current formulation of the Indonesian PVP Act, which is mostly compliant with the UPOV Convention 1991 anyway, it is looking very likely that Indonesia will accede to UPOV in the near future.

Thailand's Plant Variety Protection Office sought information from UPOV about the procedure for becoming a Member State of UPOV soon after the PVP Act was passed in 1999 (UPOV, 2000a: 19).[54] However, there was no follow-through on this for six years, until 2007. This time, the contact with UPOV was made by the Department of Intellectual Property with a visit to UPOV to obtain information on the principles and the impact of PVP in accordance with the UPOV Convention (UPOV, 2007c: 6).[55] On 22 June 2007, the Department of Intellectual Property held a briefing session in Bangkok for 40 Thai officials, representatives of academic institutions and NGOs with an interest in PVP in accordance with the UPOV Convention (UPOV, 2007c: 7). Following this meeting, UPOV briefed the Director of Agriculture and Technology and Sustainable Agriculture Policy Division, Ministry of Agriculture and Cooperatives of Thailand on the benefits of a PVP that is in accordance with the UPOV Convention (UPOV, 2007c: 8). UPOV is maintaining contact with Thailand through its Department of Intellectual Property, as well as the Ministry of Agriculture and Cooperatives.

Such intense engagement by UPOV seems to be bearing fruit, as reflected in UPOV's Annual Report of 2011 which states that (UPOV, 2011: 11):[56]

> The Office provided advice and assistance on the development of plant variety protection legislation according to the 1991 Act of the UPOV Convention and/or on the procedure to accede to the UPOV Convention to *potential members* of the Union. The Office provided written or oral comments, paid visits to authorities or received representatives of the respective States and Organizations in order to provide the requested advice. (emphasis added)

Among the countries listed as having received such advice and assistance are Brunei, Cambodia, Indonesia, Malaysia, Laos, the Philippines and Thailand (UPOV, 2011: 11). Perhaps UPOV may succeed after all in convincing the six ASEAN member countries that are not yet members of UPOV to abandon their *sui generis* PVP laws in favour of the UPOV Convention 1991.

Most countries modelled their legislation after the UPOV Convention, either 1978 or 1991, sometimes mixing elements of the two or adding more liberal *sui generis* rules. However, in spite of such widespread use of UPOV models, Singapore and Vietnam are currently the only ASEAN members of UPOV. Various reasons for Vietnam's accession could be mentioned. First, the government may be concerned about large quantities of imported commodities for the country's textile and animal feed industries. Secondly, Vietnam's intellectual property development tends to follow that of UPOV member China, because Vietnam shares China's ideology of a 'socialist market economy'. Thirdly, and perhaps most importantly, there were bilateral pressures and trade agreements. Both the US-Vietnam bilateral trade agreement of 2002 and the Switzerland-

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52 UPOV (2001) *Annual Report of the Secretary- General for 2000*, UPOV Council Thirty-Fifth Ordinary Session, Geneva, 25 October 2001. Geneva: 27 September 2001, C/35/2, 17.

53 UPOV (2007a). Annual Report of the Secretary-General for 2006, UPOV Council Forty-First Ordinary Session, Geneva, 25 October 2007. Geneva: 13 September 2007, C/41/2, 9.

54 UPOV (2000a) *Annual Report of the Secretary-General for 1999*, UPOV Council Thirty-Fourth Ordinary Session, Geneva, 26 October 2000. Geneva: 16 March 2000, C/34/2, 19.

55 UPOV (2007c) 'Report on Activities during the First Nine Months of 2007', UPOV Council Forty-First Ordinary Session, Geneva, 25 October 2007. Geneva: 4 October 2007, C/41/3, 6.

56 UPOV (2011) 'Report of Activities during the First Nine Months of 2011', UPOV Council Forty-Fifth Ordinary Session, Geneva, 20 October 2011. C/45/3, Geneva: 11 October 2011, 11.

Vietnam Intellectual Property Rights Agreement of 1999 urged the country to adopt 'UPOV style' plant variety protection.

'Technical Assistance' from US, Japan, Australia, FAO

UPOV member countries played a key role in assisting UPOV to provide 'technical assistance' to ASEAN countries in the drafting stages of their PVP laws. To a certain extent, such 'technical assistance' no doubt ensured that the UPOV PVP model became more acceptable to these countries.

The US government provided aid to the Indonesian and Philippines governments to develop their PVP laws. As early as 1994, the United States Agency for International Development (USAID) supported Indonesia's Agribusiness Development Project through an international consultancy firm. A US expert was brought in to advise the government on the development of the law on PVP in Indonesia (Sjamsoe'oed Sadjad, 1994; Tjahjadi, 1995). The same international consultancy firm was also commissioned by the USAID-funded programme called 'Accelerating Growth, Investment and Liberalization with Equity (AGILE)' to provide technical assistance to the Philippines Department of Agriculture in their drafting of the Philippine PVP Act (SEARICE [South East Asia Regional Initiatives for Community Empowerment], 2002a: 3). Indonesia received support from the Australian government for 'capacity building' of government officers from various departments.[57] The Indonesian government notified the TRIPS Council that it received assistance to disseminate information on IPR laws to law enforcers, universities, professional organizations, users and the general public from the WIPO, the Australian Patent Office, the European Patent Office, the Japan International Cooperation Agency (JICA), the Japan Patent Office and the US Patent and Trademark Office.[58]

Malaysia received technical advice, assistance and training from UPOV, the FAO, Japan's Ministry of Agriculture, Forests and Fisheries and the Japan International Cooperation Agency. Apparently, it was the FAO legal experts who advised Malaysia to adopt the UPOV PVP model. Malaysian officials from the Ministry of Domestic Trade and Consumer Affairs, the Ministry of Agriculture and the Department of Agriculture (DOA) attended regional meetings and technical workshops organised by UPOV, while Japan hosted DOA officials for training on technical aspects of PVP (Chan, 2003b: 3).

Japan and UPOV have continued to play an active role in providing technical assistance on PVP to ASEAN countries even after the PVP Acts came into force. For example, Japan and UPOV collaborated on a 'Study tour and meeting regarding the plant variety protection system of Japan' for high level officials from Brunei, Cambodia, Laos, Myanmar and Thailand from 26 to 28 January 2011 in Tokyo (UPOV, 2011: 5).

Another avenue for UPOV and its Asian members (Japan, China and South Korea) to play critical a role in shaping the implementation of the PVP systems in the ASEAN member countries is the East Asia Plant Variety Protection (EAPVP) Forum,[59] which includes all 10 ASEAN countries. The EAPVP Forum, established in Japan in 2008, organises annual meetings to discuss cooperation, harmonisation and development of the PVP systems in East Asia and other countries. The first three hosts of the EAPVP Forum were Japan (2008), China (2009) and South Korea (2010) respectively. Indonesia hosted it in 2011 and Thailand is the current host.

FTAs

A trend that initially caught many developing countries off guard is the use of bilateral FTAs by developed countries to ratchet IPRs beyond those agreed at the multilateral level such as TRIPS. There are many examples of how 'TRIPS-plus' standards have been incorporated in FTAs in areas such as copyrights, patents and plant variety protection (Drahos, 2002).

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57 Interview with Riza V Tjahjadi, Coordinator, PAN Indonesia (Jakarta, 3 December 2003); interview with Lutfiyah Hanim, Progam Officer, Institute for Global Justice (Jakarta, 4 December 2003); *Indonesian Times*, 7 October 1997; Tjahjadi 1998.

58 TRIPS Council Document No IP/Q/IDN//1,IP/Q2/IDN/1,IP/Q3/IDN/1,IP/Q4/IDN/1, dated 4 August 2000.

59 See Yasuhiro Kawai (2010), 'South Asia Plant Variety Protection Forum', Annex II to the UPOV Council, Forty-Third Ordinary Session of the Council, 22 October 2009. Geneva: 22 March 2010 C/43/17. <www.upov.int/export/sites/upov/en/documents/c/43c_17_annexIII_efgs.pdf>

The US-Cambodia Agreement on Trade Relations and IPRs (1996) requires each party to adopt the UPOV Convention while the US-Vietnam Agreement on Trade Relations (2000) states that parties may not exclude patent protection for inventions that encompass more than one variety of plant. It is widely believed that the US-Singapore FTA, in force since 1 January 2004, would be used as a model for future negotiations between the US and other ASEAN member countries. The terms of the US-Singapore FTA require expanded IPR protection in several areas including accession to the UPOV Convention 1991.

The US began negotiating an FTA with Thailand in 2003. The FTA negotiation with Thailand was halted by the military coup and the suspension of Parliament in September 2006. Thai NGOs vehemently opposed the US-Thai FTA for many reasons including the requirement for Thailand to accede to the UPOV Convention 1991 (see FTA Watch, 2005; Smith, 2007: 41).

The US-Malaysia FTA talks began in 2006. Civil society organisations in Malaysia were opposed to the US-Malaysia FTA and one of the grounds was that the FTA would require accession to the UPOV Convention 1991 (FTA Malaysia, 2006; FTA Malaysia, 2012).

Indonesia may in fact well be the next country to join UPOV. In the Joint Economic Partnership Agreement with Japan, the parties promise to 'endeavour' to become a party of the UPOV 1991 Act and that they '*shall* provide' for plant variety protection by an effective system consistent with UPOV 1991.[60]

Plant variety protection is also mentioned in the economic partnership agreements of other ASEAN countries with Japan; these have detailed IP chapters. However, obligations are less stringent. Malaysia promises to recognise 'the importance of protecting new plant varieties in a manner consistent with an internationally harmonised system',[61] Thailand 'in a manner based on international standards'[62] and the Philippines no more than 'within its capabilities, to endeavour to increase the number of plant genera and species that can be protected under its laws and regulations'.[63]

Role of Civil Society Organisations

It is perhaps also significant that both Singapore and Vietnam are ruled by governments that have to contend with little domestic political opposition in general and, consequently, also with little domestic opposition to agricultural intellectual property and UPOV membership. This limited public debate must be contrasted with a very lively debate in the remaining ASEAN countries with plant variety protection laws. Here, various groups and NGOs are opposed to IP in agriculture and UPOV membership. Accordingly, the move towards IP protection in these countries has been slower. Governing parties in favour of protection have to seek compromises with political allies and regional parties insisting on local rights and preferential treatment, whereby they often stress local ethnic identity.

A study on the genesis of the PVP laws of Thailand, Indonesia, Philippines and Malaysia from the drafting stage to enactment by legislative bodies shows that these countries readily welcomed assistance from UPOV, UPOV member countries, and international agencies, and were greatly influenced by the positions of those who granted them aid and 'technical assistance', though not all of these countries accorded the same degree of receptivity for the views expressed by their own academics and civil society, including farmers' organisations (Kanniah, 2005: 283).

In Thailand, a National Committee established to draft the Thai PVP Bill included academics, NGOs and farmers' organisations.[64] The Thai NGOs also sought assistance from international NGOs working on issues relating to IPRs in agriculture such as Genetic Resources Action International (GRAIN).[65] The Thai PVP Act contains many of the proposals made by the civil society representatives.

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60 See art 116 of the Japan-Indonesia Economic Partnership Agreement (emphasis added).

61 See art 123 Japan-Malaysia Economic Partnership Agreement.

62 See art 135 Japan-Thailand Economic Partnership Agreement.

63 See art 127 Japan-Philippines Economic Partnership Agreement.

64 Thai NGOs and farmers' organisations involved include Biodiversity and Community Rights Action (BIOTHAI), Alternative Agriculture Network (AAN), Rural Reconstruction Alumni and Friends Network (RRAFA), and Foundation for Consumers (FFC).

65 See the GRAIN website <www.grain.org>.

The PVP law development process in Indonesia was rather paternalistic and devoid of public consultation and participation. Indeed the public was not aware that such an Act was being developed. Although the Pesticides Action Network Indonesia (PAN Indonesia), an NGO which monitors PVP law development, managed to obtain a copy of the PVP Bill[66] and mobilised a group of NGOs[67] and requested that the government hold a public discussion of the draft Bill, the government remained unmoved. The PVP Act was passed without any public input, not even from those who would be directly affected, such as farmers.[68]

In the Philippines, there were many civil society organisations making their best efforts to influence the PVP law by issuing joint position statements and attending the public consultations on the PVP Bills. One such representation was a joint position paper on PVP issued on 25 September 2001 by ten NGOs representing peasants, farmers, scientists, indigenous peoples, and the churches.[69] They called on the government to abandon the PVP Bill; assert a no patents on life position in the TRIPS Council review negotiations at the WTO; and legislate a bill to protect farmers' rights over seed and agro-biodiversity that promotes common use and prohibits any form of IPRs on genetic resources.[70] Three NGOs (MASIPAG (Farmer-Scientist Partnership for Development),[71] KMP (Peasant Movement of the Philippines) and SEARICE (Southeast Asia Regional Institute for Community Empowerment)) presented detailed submissions to the government. SEARICE even developed an alternative version of the Senate and House Bills (SEARICE, undated a; SEARICE, undated b; SEARICE, 2002b.). The efforts of the NGOs were of little avail and their recommendations were largely ignored. The only provision SEARICE succeeded in lobbying to keep in the Philippines PVP Act was the one on farmers' privilege.[72]

In Malaysia,[73] the consultation process involved NGOs based in Malaysia such as the Third World Network, the Sarawak Indigenous People Association, and others, as well as an international group, the Crucible Group.[74] The farmers' organisations, indigenous communities and NGOs lobbied for a model that provided for farmers' rights and a PVP system that would enable them to establish their rights relatively simply.

The different experiences in the consultative process for the development of their respective PVP laws in these four countries led to different outcomes. Thailand accepted UPOV assistance and started with a UPOV model. It took six years for Thailand to enact its PVP law and the process was consultative. The final Act represents an accommodation of the views expressed by the NGOs and academics involved in the drafting committee. The government could not afford to ignore Thailand's politically powerful and vocal grassroots farmers' lobby. The Thai PVP Act is radically different from the UPOV model and has features in it that are not UPOV-compliant.

In Malaysia, government officials played an active role in driving the whole process. While accepting foreign assistance, they were still open to different options. They organised national

66 Interview with Riza V Tjahjadi, Coordinator, PAN Indonesia (Jakarta, 3 December 2003).

67 Among the NGOs were Yayasan Lembaga Konsumen Indonesia (YLKI), Institute for Global Justice, and Konsorsium Nasional untuk Pelestarian Hutan dan Alam Indonesia (KONPHALINDO).

68 According to two Indonesian activists, Hira Jhamtani and Lutfiyah Hanim, Indonesia could have formulated its own *sui generis* system but opted to use the UPOV model instead, without public consultation and without a study on the long term impacts on agrobiodiversity, food security and farmers' rights. See Jhamtani and Hanim, 2002: 84.

69 The ten NGOs are Kilusang Magbubukid ng Pilipinas (KMP), Kalipunan ng Katutubong Mamamayan Sa pilipinas (KAMP), Tunay na Alyansan ng Bayan Alay Sa Katutubo (TABAK), Promotion of Church Peoples' Response (PCPR), Program Unit on Ecology and Environmental Protection (PUEEP) National Council of Churches (NCCP), Magsasaku at Siyentipiko para sa Pag-unlad ng Agrikultura (MASIPAG), Samahan ng Nagtataguyod ng Agham at Teknolohiya para sa Sambayanan (AGHAM), Southeast Asia Regional Institute for Community Empowerment (SEARICE), Sibol ng Agham at Teknolohuya (SIBAT), and TEBTEBBA Foundation, Inc (Indigenous People's International Center for Policy Research and Education).

70 'Position Paper on Plant Variety Protection'; 23 September 2001.

71 MASIPAG sent 'Comments on Proposed Senate Bill 1912 on Plant Variety Protection' dated 28 November 2000 and a 'Letter-Resolution to prevent the legislation of Senate Bill 1912 on Plant Variety Protection' on 4 June 2001. MASIPAG was also involved in some of the public hearings on the PVP Bill. Interview with Emmanuel Yap, National Coordinator, MASIPAG (Los Baños, 10 November 2003).

72 Interview with Elenita Dano, Executive Director of SEARICE (Quezon City, 7 November 2003).

73 Material for this section is derived from two sources, Chan 2003a and Cheah 2004.

74 Interview with Mr Chan Han Hee, Director, Department of Agriculture, Malaysia (Kuala Lumpur, 11 August 2004). Mr. Chan is the principal author of the Malaysian PVP Act. The Crucible Group is a gathering of people representing a wide cross-section of perspectives. They produced a report on ideas and recommendations to policy makers on the subject of intellectual property rights on plant genetic resources. (See Crucible Group, 1994; Crucible II Group, 2000; Crucible II Group, 2001).

consultations, and actively sought the views of all stakeholders. The process took ten years in Malaysia, the longest by far in comparison to the other three countries. The Malaysian PVP Act sought to balance the interests of commercial plant breeders as well as local farmers and indigenous communities. Though adopting mainly the UPOV plant breeders' rights 1978 model, it departs from the UPOV model in one substantial respect — it provides explicitly for the protection of the rights of informal breeders (farmers, local communities and indigenous people) and adopts different criteria for protection for local plant varieties.[75]

The Philippines started early, allowed for public participation, and had six versions of the PVP Bill in the Senate and House of Representatives. However, although the country took six years to develop its PVP Act, the unwillingness to take on board alternative views expressed and the strong foreign presence within its own government agencies resulted in the adoption of a PVP Act that is largely a carbon copy of the UPOV model.

Indonesia rushed into enacting its PVP Act within a relatively short period of four years. During this time, it readily accepted foreign assistance but did not allow for public participation. The Indonesian PVP Act, like the Philippines PVP Act, is largely borrowed from the UPOV 1991 model. In the case of Indonesia, the absence of public consultation, and in the case of the Philippines, engaging in public consultation, resulted in the same outcome — the adoption of the UPOV plant breeders' rights model with little concession for farmers' rights and TK.

The active promotion, assistance and involvement of UPOV and UPOV member countries ensured that the UPOV PVP model, especially the UPOV Convention 1991 version of plant breeders' rights was, more or less, transposed into the PVP laws of these countries.

Elements of TK in PVP Laws

Of course, having intellectual property legislation in place is only the first step. The implementation of such laws is often difficult in developing countries, where state agencies with small budgets compete with the private sector for scientific personnel. Some countries in the region are also notorious for laws with references to numerous implementing decrees and regulations to be issued by different arms of the government, which often take years to become available.[76] Indonesia's plant variety law consists of 76 articles. At least 17 implementing decrees or regulations will be necessary to make the law fully operational. The government has so far provided nine of these, including a crucial Ministerial Decree on the manner of submitting applications and granting certificates. The first plant variety protection certificate was finally granted in 2007 to an Indonesian company. Precise statistics on the granting of PVP certificates are difficult to obtain. A recent list published on the website of the Plant Variety Protection Centre (*Pusat Perlindungan Varietas Tanaman dan Perizinan Pertanian*) of the Indonesian Ministry of Agriculture mentions 163 certificates granted between 2007 and 2012.[77] Malaysia followed a similar pattern of a long lag between the enactment of the PVP Act in 2004 and its implementation. The Malaysian PVP Act only came into force in 1 January 2007 and implementation only began when regulations were issued in 2008.[78] PVP applications were accepted from 2008, and to date a total of 90 PVP applications have been filed with the Department of Agriculture for registration. However, only 25 have been gazetted and are expected to be granted PVP certificates by the end of July 2012, provided no objections have been raised.[79] In Thailand, though the PVP Act was passed in 1999, the process of developing implementing regulations went on for several years. PVP applications were only accepted from 2003. Between 2003 and 2008, 393 applications had been

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75 The Preamble to the Malaysian PVP Act provides for three objectives of the Act, one of which is 'the recognition and protection of contribution made by farmers, local communities and indigenous people towards the creation of new plant varieties'.

76 See, for examples, Antons, (2007: 90–2).

77 Daftar Varietas yang Telah Mendapatkan Sertifikat Hak PVT Tahun 2007 – 2012 <http://ppvt.setjen.deptan.go.id> accessed 20 August 2012.

78 *Protection of New Plant Varieties Regulations 2008* (Malaysia); *Protection of New Plant Varieties (Size of Holdings) Regulations* 2008 (Malaysia); Administrative Guidelines on Application and Registration of New Varieties of Plants 2008 (Malaysia).

79 Gazette of Varieties for the Registration of New Plant Variety and Grant of Breeder's Rights <http://pvpbkkt.doa.gov.my/> accessed 8 August 2012.

submitted and PVP certificates had been granted to 33 plant varieties (Ratanasatien, 2008). The Philippines acted faster than the other four countries in developing implementing regulations in 2003, a year after its PVP Act was passed. However, the granting of PVP certificates has been slowed by testing for distinctness, uniformity and stability, and the first certificates were finally granted in 2007. Some 112 certificates are published in the Plant Variety Gazettes on the website of the Plant Variety Protection Office of the Philippines for the years from 2007 to 2011.[80]

In the race for implementation, the frequently promised protection of local varieties and traditional knowledge has been a secondary issue. Traditional knowledge is a powerful symbol in many Asian developing countries for national resistance to international homogenisation and for local ethnic identity vis-à-vis the central governments. More often than not, however, the TK provisions remain largely unimplemented.

In this part, the PVP laws of Thailand, Indonesia, Malaysia and Philippines will be used as case studies to examine for elements of TK. The PVP laws may be dealing with TK directly as in the requirement for the disclosure of TK in PVP applications or indirectly as in affording protection of local plant varieties, the requirement for the disclosure of source/origin of the new plant variety, PIC and ABS, and providing for farmers' rights or farmers' privilege. These measures are indicative that these countries endeavoured to reconcile IP rights with protection of TK, even if some of the provisions are tangential in nature.

Disclosure of TK

None of the four countries provide explicitly for the disclosure of TK. An interesting aside to this is that there is a good example of disclosure of TK provision in the Protection of Plant Varieties and Farmers' Rights Act 2001 of India, which could have been considered for adoption. India's PVP Act provides for disclosure of 'all such information relating to the contribution, if any, of any farmer, village community, institution or organisation in breeding, evolving or developing the variety' (section 18(1)(e))[81] and also includes the use of genetic material conserved by any tribal or rural families (section 40).

Protection for local plant varieties

In Indonesia, local varieties are protected in art 7 of the Plant Variety Protection Act. According to the government translation, a local variety owned by 'the community' shall be controlled by the state as represented by the national government.[82] The original Indonesian language version (*milik masyarakat*) is, in fact, rather ambiguous, because it could refer to ownership by a local community, by society as a whole, or simply to 'public ownership'.[83]

In any case, any rights granted are administered by national or local government authorities and units in accordance with the relevant implementing Government Regulation on the Naming, Registration and Use of Original Varieties for the Making of Essentially Derived Varieties.[84] The website of the Plant Variety Protection Centre of the Ministry of Agriculture[85] indicates that 347 local varieties have been registered between 2005 and the end of 2011 by mayors, officers in charge of a regency (*bupati*) and governors of provinces. If a local variety stretches across several provinces, the Plant Variety Protection Office will be responsible for the registration. Users of such varieties have to conclude an agreement with these local authorities. The Government Regulation prescribes that the potential income from such agreements is to be used to increase the prosperity of the community that owns the variety and for the conservation of the local varieties and genetic resources in the area.

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80 Plant Variety Protection Office, Department of Agriculture, Republic of the Philippines, portal <http://bpi.da.gov.ph/PVPO/pvpo.html> accessed 20 August 2012.

81 The original text of 1991 entered into force in 2005: WIPOlex database <www.wipo.int/wipolex/en/>.

82 For an English version of the law, see also Sati, 2008: 183–4.

83 Yasmon Rangkayo Sati translates *milik masyarakat* as 'owned by the community': Sati, 2008: 183.

84 Peraturan Pemerintah Republik Indonesia Nomor 13 Tahun 2004 Tentang Penamaan Pendaftaran dan Penggunaan Varietas Asal untuk Varietas Turunan Esensial.

85 Pusat Perlindungan Varietas Tanaman dan Perizinan Pertanian <http://ppvt.setjen.deptan.go.id> accessed 30 June 2012.

The Thai legislation distinguishes between 'new varieties', 'local domestic plant varieties', 'wild plant varieties' and 'general domestic plant varieties'. The latter two are varieties in the public domain, but collectors need to obtain permission from a government official and conclude a profit-sharing agreement to benefit a Plant Varieties Protection Fund.

Of particular interest is the 'local domestic plant variety' defined as 'a plant variety existing only in a particular locality within the Kingdom'.[86] A resident *sui juris* person that 'commonly inherits and passes over culture continually' and takes part in the conservation or development of the variety may register it. It needs to submit the plant variety and method of its conservation, the names of the members of the community and particulars of the landscape including a concise map showing the boundary of the community and adjacent areas. The variety may only exist in a particular locality and must have been conserved or developed exclusively by this community. Details of the application process, granting of the certificate and profit-sharing will have to be collected from various regulations.

There are various criticisms that can be raised against this form of traditional knowledge protection. First, the definition of plant varieties applies the criteria of distinctness, uniformity and stability to all varieties with the only exception of wild plant varieties. Therefore, registrable local varieties must still comply with all the criteria for new varieties except novelty. For less uniform and stable traditional varieties, this may limit the attractiveness of the registration.

Anthropologists and historians have further criticised the assumptions about the homogeneity of communities, the unchanging nature of cultures and the clear delineations of geographical space that are present in this law and in other laws for sustainable environmental management through communities. They point out how imprecise these ethnic and geographic boundaries are.[87] Until early in the 20th century, the classical system of political organisation in Asia was not the nation state, but a system of overlapping tributary relationships (Wolters, 1999: 27–40). People were frequently on the move and sometimes whole populations were forcibly resettled during military campaigns. In the process knowledge (whether that of farmers, artisans or tribal communities) was widely spread. Especially for the upland regions of South-east Asia, anthropologists have also shown that the distinction between forest-conserving tribal people and biodiversity friendly farmers in the lowlands is no longer accurate. Government programs have long forced tribal people to become settled agriculturalists. And lowland farmers tend to support their income by moving upland into areas formerly exclusively inhabited by shifting cultivators (Forsyth and Walker, 2008: 60–3, 222). All of these competing groups contribute to traditional agricultural knowledge. It comes then as no surprise that implementing decrees defining the rights holders are yet to be issued.

Malaysia provides for protection of farmers' and community plant varieties in a different way. Such varieties are eligible for protection as long as they are 'distinct' and 'identifiable,'[88] while the conditions for protection of new plant varieties are distinctness (D), uniformity (U), stability (S) and novelty (N).

The Philippines does not provide specifically for protection of local plant varieties. For local plant varieties to be eligible for protection, they would have to meet the same conditions for protection as new plant varieties, that is, DUSN.

Disclosure of source/origin

Notwithstanding the complexities of defining what is meant by 'source' and 'origin', concepts which are still being debated and definitions refined, it is important to understand the purpose of such a requirement. It is most useful in the determination of whether a new plant variety is indeed distinct from other commonly known varieties. The disclosure obligation will assist in the prevention of misappropriation ('biopiracy') of biological resources, including TK belonging to local communities. Disclosure of source/origin will also trigger the need for PIC and ABS between the providers and users of the germplasm for the breeding of new plant varieties and therefore complements parallel requirements in national access laws relating to plant genetic resources.

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86 See the definition in art 3 of the Plant Varieties Protection Act 1999 (Thailand).

87 See, for example, Winichakul, 1994; Ivarsson, 2008; Evans, 2002.

88 Section 14 (3)(a) Protection of New Plant Varieties Act 2004 (Act 634) (Malaysia).

Thailand[89] and Indonesia[90] have provided for disclosure of origin of the germplasm, the Philippines requires disclosure of origin and source,[91] while Malaysia requires disclosure of source and evidence of compliance with the law regulating access to genetic or biological resources.[92]

PIC and ABS

The concepts of PIC and ABS are requirements in the CBD. In the CBD, PIC and ABS concerns not just states but also indigenous and local communities who have been conserving and developing biological resources (CBD, art 8(j)).

The purpose of the PIC requirement is to ensure that benefit sharing accrues to owners of germplasm, who are entitled to 'fair and equitable sharing' of benefits that arise from the utilisation of their resources and TK. The inclusion of PIC and ABS in the PVP laws raises implementation issues for the Departments of Agriculture as they are not the custodians for the protection of biological resources of the country. The way around it has been to include a requirement that PVP applications include documentation showing compliance with national access laws on biodiversity.

Indonesia and Philippines do not provide for PIC and ABS in their PVP laws. Thailand requires PIC and benefit sharing for local domestic plant variety and for general domestic and wild plant variety.[93] In addition for the latter two, disclosure of any profit-sharing agreement is also required.[94] Malaysia has provided for both PIC and benefit sharing. The written consent of the authority representing the local community or the indigenous people is required where the new plant variety is developed from traditional varieties.[95] In addition, the PVP application must show proof of compliance with laws regulating access to genetic resources.[96] However, Malaysia's law relating to ABS is still pending.

Farmers' rights/ farmers' privilege

As discussed earlier, 'farmers' rights', were first proposed in various resolutions of the FAO International Undertaking on Plant Genetic Resources in the 1980s. On the other hand, 'farmer's privilege' originates in the UPOV Conventions as exceptions to breeders' rights, where small farmers are allowed to use protected plant varieties in limited circumstances. In respect of a positive farmers' rights provision (as, for example, in India's PVP law, where farmers have the right to save, use, sow, re-sow, exchange and sell protected varieties except as branded seed),[97] there are none in the Indonesian and Philippines PVP Acts, while Thailand and Malaysia do provide for some form of farmers' rights.

Thailand has provided for collective community exclusive rights over local domestic plant variety to develop, study, conduct experiment or research, produce, sell, export or distribute by any means the propagating material[98], but these rights are not absolute and exceptions have been provided.[99] Malaysia has also provided for individual and collective rights of a local community or indigenous people over new plant varieties that are distinct and identifiable.[100]

All four countries provide for farmers' privilege. The Malaysian law allows small farmers not only the use of harvested material on their own holdings and the exchange of reasonable amounts with other small farmers, but also 'the sale of farm-saved seeds in situations where a

89 Section 19(3) of the Plant Varieties Protection Act B.E. 2542 (1999) (Thailand).

90 Article 11(2) of Law No 29 of 2000 concerning Plant Variety Protection (Indonesia).

91 Article 27(a) of the Implementing Rules and Regulations of the Plant Variety Protection Act 2002 (Republic Act No 9168) of the Philippines.

92 Sections 12 (e) and (g) of the Protection of New Plant Varieties Act 2004 (Act 634) (Malaysia).

93 Section 48 of the Plant Varieties Protection Act B.E. 2542 (1999) (Thailand).

94 Section 19(5) of the Plant Varieties Protection Act B.E. 2542 (1999) (Thailand).

95 Section 12(1)(f) of the Protection of New Plant Varieties Act 2004 (Act 634) of Malaysia.

96 Section 12(1)(g) of the Protection of New Plant Varieties Act 2004 (Act 634) of Malaysia.

97 Section 39(4) of the Protection of Plant Varieties and Farmers' Rights Act 2001 of India.

98 Sections 44, 47, 48 of the Plant Varieties Protection Act B.E. 2542 (1999) (Thailand).

99 Section 47 (1)–(4) of the Plant Varieties Protection Act B.E. 2542 (1999) (Thailand).

100 Sections 13(1)(d) and 14(2) of the Protection of New Plant Varieties Act 2004 (Act 634) of Malaysia..

small farmer cannot make use of the farm-saved seeds on his own holdings due to natural disaster or emergency or any other factor beyond the control of the small farmer', whereby the amount sold must be limited to what is required in his own holding.[101] Farmers are small if their holdings are 0.2 hectares or less.[102]

Thailand allows farmers to use protected seeds for cultivation and propagation from propagating material made by the farmer and where the plant is designated by the Minister as a promoted plant variety 'its cultivation or propagation by a farmer may be made in the quantity not exceeding three times the quantity obtained.'[103]

Indonesia allows farmers' privilege in a very limited way — use of the harvested produce by individual small farmers for their own consumption.[104] Similarly, the Philippines PVP law provides for a circumscribed farmers' privilege provision — the traditional rights of small farmers to save, use, exchange, share or sell farm produce of a protected variety, but not for sale for purpose of reproduction under a commercial marketing arrangement.[105] The PVP Board is supposed to issue further conditions and guidelines under which this exception is to apply depending on the nature of the plant cultivated, grown or sold. The same conditions also apply to the exchange and sale of seeds among and between small farmers, except that such exchange and sale of seeds among farmers is allowed for reproduction and replanting on their own land. However, this right does not include the right to sell the protected variety under its trademark or trade name.[106]

Conclusion

In conclusion, the larger ASEAN economies have ambitious plans for biotechnology, as is visible from the various biotechnology parks that are being developed. As members of the WTO, they also aspire not to be left out of the growing global international trade in goods and services. In their national laws, however, they mix investor-friendly IPRs with measures for the protection of TK aimed at appeasing local constituencies. Then again, these are mostly not implemented in practice or administered by the state. Bureaucratic hurdles reduce further their attractiveness to local communities, who in general seem disillusioned with the conventional approach to protection of TK. What the IPR/TK debate has generated, therefore, is mainly a better understanding of equitable compensation, defensive procedural requirements and an appreciation of the potential for branding TK products by using geographical indications and collective marks. The initial promises of the role of TK protection as incentive in community based natural resource management and in 'bottom up', rather than 'top down', development models, however, have yet to be realised.

References List

Antons, Christoph (1991), 'Intellectual Property Law in ASEAN Countries: A Survey', 13 *European Intellectual Property Review* 78.

Antons, Christoph (2006) 'Intellectual Property Law in Southeast Asia: Recent Legislative and Institutional Developments', 1 *Journal of Information Law &* Technology (Special issue).

Antons, Christoph (2007) 'Law Reform in the "Developmental States" of East and Southeast Asia: From the Asian Crisis to September 11, 2001, and Beyond', in Christoph Antons and Volkmar Gessner (eds), *Globalisation and Resistance: Law Reform in Asia since the Crisis*. Oxford and Portland, Oregon: Hart Publishing.

Antons, Christoph (2007) 'Traditional Knowledge, Biological Resources and Intellectual Property Rights in Asia: The Example of the Philippines', 34 *Forum of International Development Studies* 1.

Antons, Christoph (2010) '*Sui Generis* Protection for Plant Varieties and Traditional Knowledge in Biodiversity and Agriculture: The International Framework and National Approaches in the Philippines and India', 6 *Indian Journal of Law and Technology*, 89.

101 Section 31(1) of the Protection of New Plant Varieties Act 2004 (Act 634) of Malaysia..

102 Protection of New Plant Varieties (Prescribed Size of Holdings) Regulations 2008 (PU(A) 390/2008) which came into force on 20 October 2008. Under Section 2 of this regulation, the size of holding shall not exceed 0.2 hectares.

103 Section 33(4) of the Plant Varieties Protection Act B.E. 2542 (1999) (Thailand).

104 Article 10(1)(a) of Law No 29 of 2000 concerning Plant Variety Protection (Indonesia).

105 Section 43 (a)–(d) of the Philippine Plant Variety Protection Act of 2002 (Republic Act No 9168).

106 Article 67 (a)–(d) of the Implementing Rules and Regulations of the Plant Variety Protection Act 2002 (Republic Act No. 9168) of the Philippines.

Aoki, Keith (2008) *Seed Wars: Controversies and Cases on Plant Genetic Resources and Intellectual Property Rights*. Durham, North Carolina: Carolina Academic Press.

ASEAN Center for Biodiversity <www.aseanbiodiversity.org>.

Asia Sentinel (2012) 'The Search for Food Security Gains Momentum' (2012) *Asia Sentinel*, 9 April (corrected 18 April) <asiasentinel.com>.

Biotani Indonesia Foundation (2007) 'Agri Laws in Indonesia: Agrobiodiversity – The Knowledge Issues' <www.grain.org/>.

Bittman, Mark (2008) 'The Staggering Cost of Rising World Meat Production', *International Herald Tribune*, January 28, <nytimes.com>.

Black, Richard (2010), 'Big Food Push Urged to Avoid Hunger', *BBC News*, 25 March <www.bbc.co.uk/>.

Blas, Javier (2012) 'Drought Stokes Debate over Biofuel', *Financial Times*, 12 August.

Boonoon, Jirapan (2007) 'Biotec Sets its New Priorities for this Year', *The Nation* [Thailand], 6 March.

Bradsher, Keith (2008), 'The Other Oil Shock: Vegetable Oil Prices Soar', *International Herald Tribune*, January.

CBD, 'Country Profile – Malaysia <www.cbd.int/countries/>.

CBD, 'Country Profile – Thailand' <www.cbd.int/countries/>.

Chan Han Lee (2003a) 'Plant Variety Protection – A Malaysian Perspective', Paper presented at the UPOV National Seminar on the Nature of and Rationale for the Protection of Plant Varieties under the UPOV Convention, Kuala Lumpur, 1 December 1994.

Chan Han Hee (2003b) 'Salient Features of the Proposed Malaysian Plant Variety Protection Legislation' Paper presented at the Third Malaysian National Seed Symposium, Putrajaya, Malaysia, 8–9 April.

Cheah Lee Shen (2004) 'Salient Features of the Proposed Malaysian Plant Variety Protection Act', power point presentation at the National Seminar on the Protection of New Varieties of Plants under the UPOV Convention, Kuala Lumpur, Malaysia, 12 February.

Coalition for Intellectual Property Rights (CIPR) (2002) *Integrating Intellectual Property Rights and Development Policy – Report of the Commission on Intellectual Property Rights*. London: Commission on Intellectual Property Rights.

Correa, Carlos M (2003) 'Establishing a Disclosure of Origin Obligation in the TRIPS Agreement' Occasional Paper 12. Geneva: Quaker United Nations Office (QUNO).

Correa, Carlos M (2005) 'The Politics and Practicalities of a Disclosure of Origin Obligation' Occasional Paper 16. Geneva: Quaker United Nations Office.

Crucible Group (1994) *People, Plants and Patents – The Impact of Intellectual Property on Biodiversity, Conservation, Trade and Rural Society*. Ottawa: International Development Research Centre.

Crucible II Group (2000) *Seeding Solutions Volume 1. Policy Options for Genetic Resources: People, Plants and Patents Revisited*. International Development Research Centre, International Plant Genetics Resources Institute, and Dag Hammarskjöld Foundation.

Crucible II Group (2001) *Seeding Solutions Volume 2. Options for National Laws Governing Control over Genetic Resources and Biological Inventions*. International Development Research Centre, International Plant Genetics Resources Institute, and Dag Hammarskjöld Foundation.

Daftar Varietas yang Telah Mendapatkan Sertifikat Hak PVT Tahun 2007 – 2012 <http://ppvt.setjen.deptan.go.id>.

Drahos, Peter (2002) 'Developing Countries and International Intellectual Property Standard-Setting', 5 *Journal of World Intellectual Property* 765.

Drahos, Peter and Braithwaite, John (2002) *Information Feudalism – Who Owns the Knowledge Economy*. London: Earthscan Publications.

De Jonge, Bram and Louwaars Niels (2009) 'The Diversity of Principles Underlying the Concept of Benefit Sharing', in Evanson C Kamau and Gerd Winter (eds), *Genetic Resources, Traditional Knowledge and the Law: Solutions for Access and Benefit Sharing*. London and Sterling, Virginia: Earthscan.

Dutfield, Graham (2005) 'Thinking Aloud on Disclosure of Origin', Occasional Paper 18. Geneva: Quaker United Nations Office.

Dutfield, Graham (2011) 'Food, Biological Diversity and Intellectual Property: The Role of the International Union for the Protection of New Varieties of Plants (UPOV)', Intellectual Property Issue Paper No 9. Geneva: Quaker United Nations Office.

Dutfield, Graham and Suthersanen, Uma (2008) *Global Intellectual Property Law*. Cheltenham, UK and Northampton, MA: Edward Elgar.

Eder, James F and McKenna, Thomas M (2004) 'Minorities in the Philippines: Ancestral Lands in Theory and Practice', in Christopher R Duncan (ed), *Civilizing the Margins: Southeast Asian Government Policies for the Development of Minorities*. Ithaca and London: Cornell University Press.

Evans, Grant (2002) *A Short History of Laos: The Land in Between*. Chiang Mai: Silkworm Books.

Fact Sheet, House Bill No 4518, Twelfth Congress, First Regular Session, Committee Report No 273, submitted to the Committee on Agriculture, Food and Fisheries and the Committee on Appropriations, 5 March 2002.

Farmers Rights Project (2012), *Farmers Rights: Resource Pages for Decision-Makers and Practitioners*. 24 August. Norway: Fridtjof Nansen Institute. <www.farmersrights.org/>.

Forsyth, Tim and Walker, Andrew (2008) *Forest Guardians, Forest Destroyers: The Politics of Environmental Knowledge in Thailand*. Chiang Mai: Silkworm.

Fowler, Cary (1994) *Unnatural Selection: Technology, Politics, and Plant Evolution*. Switzerland: Gordon and Breach Science Publishers.

FTA Malaysia (2006) 'About FTAs: Report on Workshop on Malaysia-US FTA FTA Malaysia (Workshop on Malaysia-US Free Trade Agreement: Issues, Implications and Challenge – Summary Report) 15 November <www.ftamalaysia.org>.

FTA Malaysia (2012) The US-Malaysia FTA: Implications for Malaysian Society <www.ftamalaysia.org/>.

FTA Watch (2005) *Free Trade Agreements and Their Impact on Developing Countries – The Thai Experience,* Bangkok: FTA Watch.

Gazette of Varieties for the Registration of New Plant Variety and Grant of Breeder's Rights <http://pvpbkkt.doa.gov.my/>.

GRAIN (2005) 'Re-situating the Benefits from Biodiversity: A Perspective on the CBD Regime on Access and Benefit-sharing', *Seedling*, April.

Graziano da Silva, José (2012), 'The US Must Take Biofuel Action to Prevent a Food Crisis', *Financial Times*, 9 August.

Greengrass, Barry (1994) 'Opening Address' presented at the UPOV National Seminar on the Nature of and Rationale for the Protection of Plant Varieties under the UPOV Convention, Manila, 8 December 1994.

Helfer, Laurence R (2002) 'Intellectual Property Rights in Plant Varieties: An Overview with Options for National Governments', FAO Legal Papers online #31. Rome: Food and Agriculture Organization <www.fao.org>.

International Plant Genetics Resources Institute (IPGRI) (1999) *Key Questions for Decision Makers. Protection of Plant Varieties under the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights. Decision Tools*. Rome: International Plant Genetics Resources Institute.

Ivarsson, Soren (2008) *Creating Laos: The Making of a Lao Space between Indochina and Siam, 1860-1945*. Copenhagen: NIAS Press.

Jhamtani, Hira and Hanim, Lutfiyah, (2002) *Globalisasi & Monopoli Pengetahuan – Telaah Tentang TRIPS dan Keragaman Hayati di Indonesia*. Jakarta: INFID, KONPHALINDO, IGJ, 84.

Kanniah, Rajeswari (2005) 'Plant Variety Protection in Indonesia, Malaysia, the Philippines and Thailand', 8 *Journal of World Intellectual Property* 283.

Kanniah, Rajeswari (2011). *Breeders vs Farmers: The Contest for Rights over Plant Varieties in Selected Asian Countries*. Saarbrucken: VDM Verlag Dr Müller.

Kawai, Yasuhiro 'South Asia Plant Variety Protection Forum', Annex II to the UPOV Council, Forty-Third Ordinary Session of the Council, October 22, 2009. Geneva: 22 March 2010 C/43/17.

Leskien, Dan and Flitner, Michael (1997) 'Intellectual Property Rights and Plant Genetic Resources: Options for a *Sui Generis* System'. *Issues in Genetic Resources* No 6, June, Rome: International Plant Genetics Resources Institute.

Louwaars, Niels (2006) 'Controls Over Plant Genetic Resources – A Double-Edged Sword', 7 *Nature Reviews: Genetics* 241.

Mohamad, O, Nagulendran, K and Mohd Khairul Adib, A R (2006) 'Access to Genetic Resources and Benefit Sharing', in Abd Rahman Milan, Abdul Latif Ahmad Zabidi, Sahilah Abdul Mutalib, Rosliza Jajuli, Lo Nyok Piang and Mohd Shukor Nordin (eds) (2006) *Convention on Biological Diversity and International Treaty on Plant Genetic Resources for Food and Agriculture: Issues and Challenges in Malaysia*. Kuala Lumpur: Malaysian Agricultural and Research Institute.

Mooney, Pat Roy (1983) 'The Law of the Seed: Another Development and Plant Genetic Resources', 1–2 *Development Dialogue* 1.

Oliva, Maria Julia and Perrault, Ann (2005) 'Prior Informed Consent and Access to Genetic Resources', in Martha Chouchena-Rojas *et al* (eds) *Disclosure Requirements: Ensuring Mutual Supportiveness between the WTO TRIPS Agreement and the CBD*. Gland and Cambridge: International Union for the Conservation of Nature (IUCN); Geneva: International Centre for Trade and Sustainable Development (ICTSD).

Plant Variety Protection Office, Department of Agriculture, Republic of the Philippines, portal <http://bpi.da.gov.ph/PVPO/pvpo.html>.

Pusat Perlindungan Varietas Tanaman dan Perizinan Pertanian [Centre for Plant Variety Protection and Agricultural Licensing] <http://ppvt.setjen.deptan.go.id>.

Ratanasatien, Chutima 2008. 'Current Situation of PVP Legislation in Thailand' Pre-Congress power point presentation, Asian Seed Congress, <www.apsaseed.org>.

Republic of the Philippines (2009), *Assessing Progress towards the 2010 Biodiversity Target: The 4th National Report to the Convention on Biological Diversity* <www.cbd.int/>.

Sadjad, Sjamsoe'oed (1994) 'Perlindungan Varietas Tanaman', *Kompas*, 17 December 1994.

Sati, Yasmon Rangkayo (2008) *Indonesian Intellectual Property Directory*. Jakarta: ShortCUT Gagas Imaji.

SEARICE [South East Asia Regional Initiatives for Community Empowerment] (undated a). *Briefing Folder on Plant Variety Protection System*, Quezon City: SEARICE

SEARICE, (undated b). 'Defend Farmers' Rights, Scrap the PVP Act!' A Position Paper on Republic Act 9168. Quezon City: SEARICE

SEARICE, (2002a). *Mang Gimo and the Plant Variety Protection System*, Quezon City: SEARICE

SEARICE (2002b) *SEARICE Notes*, June

Smith, Sanya (2007) 'Thai Human Rights Commission Attacks FTA with US', Third World Resurgence No 197, January 2007, Penang: Third World Network, 39, 41

Secretariat of the Convention of the Convention on Biological Diversity (2002), *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*. Montreal: Secretariat of the Convention on Biological Diversity.

Siaw, Timothy (2007) 'Malaysia Realizes Biotechnology Potential', *Managing Intellectual Property*, May (Issue 169), 90.

Smolders, Walter (2005) 'Disclosure of Origin and Access and Benefit Sharing: The Special Case of Seeds for Food and Agriculture', Occasional Paper 17. Geneva: Quaker United Nations Office

South Centre (1997) *The TRIPS Agreement: A Guide for the South. The Uruguay Round Agreement on Trade-Related Intellectual Property Rights*. Geneva: South Centre.

Stevenson, Mark (2002) 'China Brazil, India, 9 Other Nations Form Alliance Against Biopiracy', Associated Press, 19 February 2002.

Stewart, T (ed) (1993) *The GATT Uruguay Round. A Negotiating History (1986-1992).* The Hague: Kluwer Law and Taxation Publishers.

Swiderska, Krystyna, Dano, Elenita and Dubois, Olivier (2001) *Developing the Philippines' Executive Order No 247 on Access to Genetic Resources*, Participation in Access and Benefit-Sharing Policy, Case Study No 4. London: International Institute for Environment and Development (IIED)

Tjahjadi, Riza V 'Kisah Indonesia: Kepentingan bisnis menggugat (hak) penghargaan? Hak Varietas Tanaman (PVP) Digali', *Terompet*, April–June No 14/1995, 25.

Tjahjadi, R V (1998) 'Country Report – Indonesia: Situations for Assessing *Sui Generis* Options', unpublished, 29 January. OR

United Nations Development Program (UNDP) (2003) *Making Global Trade Work For People*. London: Earthscan Publications Ltd.

United States Department of Agriculture, Foreign Agricultural Service (USDA FAS) (2009) *Agricultural Economy & Policy Paper: Indonesia*, March <www.fas.usda.gov>.

UPOV (1998) Press Release No 30 'The 1991 Act of the International Convention for Protection of New Plant Varieties (the UPOV Convention) Enters into Force' Geneva: 21 April.

UPOV (2000a) *Annual Report of the Secretary-General for 1999*, UPOV Council Thirty-Fourth Ordinary Session, Geneva, October 26, 2000. Geneva: 16 March 2000, C/34/2.

UPOV (2001) *Annual Report of the Secretary- General for 2000*, UPOV Council Thirty-fifth Ordinary Session, Geneva, October 25, 2001. Geneva: 27 September 2001, C/35/2, 17.

UPOV (2005a) 'Examination of the Conformity of the Protection of New Plant Varieties Act 2004 of Malaysia with the 1991 Act of the UPOV Convention', Twenty-Second Extraordinary Session, Geneva, April 8, 2005. Geneva: 2 February 2005, C (Extr.)/22/2.

UPOV (2007a). *Annual Report of the Secretary-General for 2006*, UPOV Council Forty-First Ordinary Session, Geneva, October 25, 2007. Geneva: 13 September 2007, C/41/2, 9.

UPOV (2007b) 'Examination of the Conformity of the Philippines Plant Variety Protection Act of 2002 with the 1991 Act of the UPOV Convention', Twenty-Fourth Extraordinary Session, Geneva March 30, 2007. Geneva: 5 March 2007, C (Extr.)/24/2.

UPOV (2007c) 'Report on Activities during the First Nine Months of 2007', UPOV Council Forty-First Ordinary Session, Geneva, October 25, 2007. Geneva: 4 October 2007, C/41/3

UPOV (2011) 'Report of Activities during the First Nine Months of 2011', UPOV Council Forty-Fifth Ordinary Session, Geneva, October 20, 2011. C/45/3, Geneva: 11 October 2011, 11.

UPOV (2012) *Members of the International Union for the Protection of New Varieties of Plants* [Status at 12 April 2012] <www.upov.int/members/en/>.

Watal, Jayashree (2001) *Intellectual Property Rights in the WTO and Developing Countries*. The Hague: Kluwer Law International.

Weeraworawit, Weerawit (2004) 'The Harmonisation of Intellectual Property Rights in ASEAN', in Christoph Antons, Michael Blakeney and Christopher Heath (eds), *Intellectual Property Harmonisation Within ASEAN and APEC*, The Hague: Kluwer Law International, Appendix 2, 220–6.

Wheatley, Alan (2008), 'High Food Prices Sound an Alarm across Asia', *International Herald Tribune*, January 21.

Winichakul, Thongchai (1994) *Siam Mapped – A History of the Geo-Body of a Nation*. Honolulu: University of Hawai'I Press.

WIPOlex database <www.wipo.int/wipolex/en/>.

Wolters, O W (1999) *History, Culture and Region in Southeast Asian Perspectives*, Revised edition. Ithaca NY & Singapore: Cornell Southeast Asia Program Publications/Institute of Southeast Asian Studies, ch. 2.

World Trade Organization, Council for Trade-Related Aspects of Intellectual Property Rights (2006) *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity – Summary of Issues and Points Made*, Note by Secretariat, Revision, UN Doc IP/C/W/368/Rev.1, 8 February 2006.

World Trade Organization, Council for Trade-Related Aspects of Intellectual Property Rights (2006) *Review of the Provisions of Article 27.3(B) – Summary of Issues Raised and Points Made*, Note by the Secretariat, Revision, UN Doc IP/C/W/369/Rev.1, 9 March 2006.

World Trade Organization, Council for Trade-Related Aspects of Intellectual Property Rights (2006) *The Protection of Traditional Knowledge and Folklore – Summary of Issues Raised and Points Made*, Note by Secretariat, Revision, UN Doc IP/C/W/370/Rev.1, 9 March 2006.

Legislation, Treaties/Conventions

Administrative Guidelines on Application and Registration of New Varieties of Plants 2008 (Malaysia)

Agreed Interpretation of the International Undertaking (Resolution 4/89) FAO Res 4/89, Report of the Conference of FAO, 25th sess, Rome, 11–29 November 1989, UN Doc C/89/24 (1989).

Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), Annex 1C to the Agreement Establishing the World Trade Oganization, opened for signature 15 April 1994, 1869 UNTS 299 (entered into force 1 January 1996).

ASEAN Framework Agreement on Access to Biological and Genetic Resources (Draft 2000)

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, opened for signature 23 March 1989, 1673 UNTS 57 (entered into force 3 May 1992).

Cancun Declaration of Like-Minded Megadiversity Countries, 18 February 2002, UN Doc UNEP/CBD/COP/6?INF/33 21 March 2002

Cartagena Protocol on Biosafety to the Convention on Biodiversity, opened for signature 15 May 2000, 2226 UNTS 208 (entry into force 11 September 2003))

Chapter: 490 Plant Varieties Protection Ordinance (PRC).

Convention for Biological Diversity (CBD), opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993).

Draft ASEAN Framework Agreement on Access to, and Fair and Equitable Sharing of Benefits Arising from the Utilisation of, Biological and Genetic Resources, as agreed at the 15th Meeting of the AWGNCB 2005. Text: Southeast Asia Regional Capacity Building on Access and Benefit-Sharing, Regional Workshop on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS): Understanding the Nagoya Protocol, 25–26 October 2011 <http://abs.aseanbiodiversity.org/index.php?option=com-content&view=article&id=2&Itemid=129>

Farmers Rights (Resolution 5/89) FAO Res 5/89, Report of the Conference of FAO, 25th sess FAO Conference, Rome, 11–29 November 1989, UN Doc C/89/REP (1989).

Implementing Rules and Regulations of the Plant Variety Protection Act 2002 (Republic Act No 9168) of the Philippines.

Implementing Rules for the Regulations of Peoples Republic of China on Protection of New Varieties of Plants (Agriculture Part) Decree of the Ministry of Agriculture, No 13, 27 April 1999 (PRC) PVP Gazette 90, December 2000.

Implementing Rules for the Regulations of the People's Republic of China on Protection of New Varieties of Plants (Forestry Part) Decree of the State Forestry Administration, No 3, 1999 (PRC) PVP Gazette 90, December 2000.

Indigenous Peoples Rights Act of 1997 (Republic Act No 8371) (Philippines).

Industry Seed Law 1997 (Republic of Korea) [Plant Varieties Protection Law of Korea 1997]

Intellectual Property Code of the Philippines (Republic Act No 8293).

Intellectual Property Law, Law No 50/2005/QH11 [Rights for the Plant Variety] 2005 (Viet Nam).

International Convention for the Protection of New Varieties of Plants (UPOV Convention), opened for signature 2 December 1961 (entered into force 10 August 1968).

International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). opened for signature 4 November 2001 (entered into force 29 June 2004).

International Undertaking on Plant Genetic Resources (Resolution 8/83) FAO Res 8/83, Report of the Conference of FAO, 22nd sess, Rome, 5–23 November 1983, UN Doc C/83/REP (1983).

Law No 29 of 2000 concerning Plant Variety Protection (Indonesia).

Law on Intellectual Property of 2008 (Lao PDR).

Law on Seed Management and Breeders Rights of 2008 (Cambodia).

Ministerial Declaration, adopted 14 November 2001, 4th WTO Ministerial, Doha. UN Doc WT/MIN(01)/DEC/1 (20 November 2001) (Doha Declaration 2001)

Ordinance on Plant Varieties (Order No 03/2004/L-CTN of 5 April 2004 (Viet Nam)

Patents Act 1995 (Singapore).

Peraturan Pemerintah Republik Indonesia Nomor 13 Tahun 2004 Tentang Penamaan Pendaftaran dan Penggunaan Varietas Asal untuk Varietas Turunan Esensial [Government Regulation on the Naming, Registration and Use of Original Varieties for the Making of Essentially Derived Varieties].

Philippine Plant Variety Protection Act of 2002 (Republic Act No 9168).

Plant Patent Act 1930, 35 USC 161.

Plant Varieties Protection Ordinance 1997 (Hong Kong)

Plant Variety and Plant Seed Act 2004 (Republic of China / Taiwan).

Plant Variety Protection Act 1999 (Thailand).

Plant Variety Protection Act 2004 (Singapore).

Plant Variety Protection and Seed Act 1998 (Japan)

Protection of New Plant Varieties Act 2004 (Act 634) (Malaysia).

Protection of New Plant Varieties Regulations 2008 (Malaysia)

Protection of New Plant Varieties (Size of Holdings) Regulations 2008 (Malaysia)

Regulations of the People's Republic of China on the Protection of New Varieties of Plants 1999 (PRC) (entered into force 1997) PVP Gazette 85, October 1999.

Rotterdam Convention on Prior Informed Consent for Certain Hazardous Chemicals and Pesticides in International Trade, opened for signature 11 September 1998, 2244 UNTS 337 (entered into force 24 February 2004).

United States – Philippines Free Trade Agreement 2003

UPOV, Act of 1961 International Convention for the Protection of New Varieties of Plants, adopted by the Diplomatic Conference, 2 December 1961. <www.upov.int/>

UPOV, Act of 1978 International Convention for the Protection of New Varieties of Plants of December 2, 1961, as revised at Geneva on November 10, 1072, and on October 23, 1978. <www.upov.int/>

UPOV, Act of 1991 International Convention for the Protection of New Varieties of Plants of December 2, 1961, as revised at Geneva on November 10, 1972, on October 23, 1978, and on March 19, 1991. <www.upov.int/>