Protection of Farmer's Rights over Plant Varieties in Southeast Asian Countries

Southeast Asian Council For
Food Security And Fair Trade

Protection of Farmers' Rights over Plant Varieties in Southeast Asian Countries

By Kamalesh Adhikari

for
Southeast Asian Council for Food Security & Fair Trade
(SEACON)

Kuala Lumpur, Malaysia

2008

Protection of Farmers' Rights over Plant Varieties in Southeast Asian Countries

List of Boxes

List of Tables

List of Charts

List of Abbreviations

ABS	Access and Benefit Sharing
ASEAN	Association of Southeast Asian Nations
CBD	Convention on Biological Diversity
COP	Conference of the Parties
DNA's	Deoxyribonucleic Acid
DUS	Distinct, Uniform and Stable
DUSN	Distinctness, Uniformity, Stability and Novelty
FAO	Food and Agriculture Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
IPRs	Intellectual Property Rights
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LDCs	Least Developed Countries
MFN	Most-Favoured-Nation
PGRFA	Plant Genetic Resources for Food and Agriculture
PIC	Prior informed consent
SAWTEE	South Asia Watch on Trade, Economics & Environment
SEA	Southeast Asia
SEACON	Southeast Asian Council for Food Security and Fair Trade
SEARICE	Southeast Asia Regional Initiative for Community Empowerment
SPLT	Substantive Patent Law Treaty
TK	Traditional Knowledge
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UPOV	International Union for the Protection of New Varieties of Plants
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Foreword

The implementation and realization of farmers' rights is critical to ensuring livelihood and food security of rural small-scale farmers. The contribution of measures that protect farmers' rights in ensuring the conservation and sustainable use of plant genetic resources for food and agriculture is also vital, especially in Southeast Asia, where more than 70 percent of the region population is involved in traditional small-scale farming. As various international frameworks exist to protect or challenge farmers' rights, continuing pressures and accountability should rest upon the national governments to facilitate the realization and implementation of farmers' rights arising from the past, present and future contributions of farmers in agriculture development and biodiversity conservation.

Following a regional consultation that was conducted by SEACON in July 2008, a common ground of understanding was clearly needed in order to bring forth and further highlight farmers' contributions to the conservation and sustainable use of genetic resources and the need for the protection of farmers' rights. It was also highlighted that this understanding should be commonly shared by the concerned actors and agencies at all levels and that the sharing of current concerns and reflections related to farmers' rights in Southeast Asia should be engraved in the ASEAN and national agendas.

We are grateful to Mr. Kamalesh Adhikari of South Asia Watch on Trade, Economics & Environment (SAWTEE), a regional network based in Kathmandu, Nepal for authoring this publication based on the issues discussed at the consultation. We would like to thank Prof. Dr. Ida Madiha Abdul Ghani Azmi (International Islamic University Malaysia) and Prof. Gurdial Singh (University of Malaya, Malaysia) for their contributions and inputs, Mr. Shashi Kumar for the legal analyses on the existing plant variety protection laws in Southeast Asia (Appendix A), and all the participants at the Southeast Asia Consultative Workshop 2008 for their valuable inputs and suggestions. We are indeed grateful that the consultation and this publication have been made possible by the generous funding from MISEREOR (Germany).

Indrani Thuraisingham
Chairperson, SEACON

Introduction

The history of the corporate seed business that uses modern biotechnology is not new. Crick and Watson's discovery of DNA's (deoxyribonucleic acid) double helix structure in the 1950s led to the application of techniques such as genetic modification over genetic resources, strongly enabling inventors (breeders) to develop genetically modified seeds. Such discovery, however, also raised a question of addressing the issue of protecting the commercial interests of breeders for developing such seeds and introducing the same to farmers. And due to corporate lobby, the stricter application of intellectual property rights (IPRs) such as patents and plant breeders' rights over seeds received a wider recognition.

Over the years, the application of modern biotechnology and stricter legal provisions for the protection of plant varieties — for example, through patent and plant variety protection laws — in many advanced countries have made it possible for private sector entities to establish corporate monopolies over seeds and influence greatly the global seed market. The introduction of multilaterally binding IPR rules under the World Trade Organization (WTO) in 1995 and the implementation of IPR rules under different bilateral and regional trade agreements have further strengthened the corporate sector to spread monopolies over the production, reproduction and sale of such seeds.

Today, it is in this sense that corporate monopolies over seeds dominate the farming systems across many countries, including developing and least-developed ones. Even multilateral organizations such as the World Bank, the Asian Development Bank and the Food and Agriculture Organization of the United Nations (FAO) have supported the policy of promoting the corporate sector in seed business. In recent times, particularly when many developing and least-developed countries are being hit by the Global Food Crisis, this issue can be seen as a hotly-debated issue. And, countries that do not want such stricter applications of modern biotechnology and IPRs have been expressing their serious concerns over their applications as well as implications.

There is internationally a kind of consensus — also recognized and legitimized in some international conventions and treaties — among many developing and least-developed countries that the State and its people are the ones to exercise sovereign and inalienable rights over their genetic resources as well as related knowledge. This consensus basically concerns with the way modern biotechnology and IPRs are being applied in the area of biodiversity

and agriculture. In particular, many countries in Asia and Africa have expressed several concerns over the ethical, moral, cultural, social, economic, environmental and political implications that the unjust practices associated with the use and spread of modern biotechnology and IPRs bring to negatively affect their economies, environment and people's livelihood. Among one of such concerns is the issue of the implications for traditional agriculture systems and farmers' rights to livelihood.

It has been widely held in many developing and least-developed countries that the growing and unjust application of biotechnology and the stricter extension of IPRs in agriculture significantly reduce farmers' rights to plant varieties (seeds) and related knowledge. Mostly in such countries, the major attention is, therefore, towards the policy and legal space that governments need to explore and exploit for the protection of the rights of farmers over their seeds and related knowledge.

This publication centers around some of the conceptual issues and technical notes concerned with the issue of farmers' rights to seeds and related knowledge. While analysing several international instruments that are of relevance and importance and discussing the implications of the use of IPRs in agriculture, this publication deals with some crucial legal and institutional measures that the Southeast Asian countries need to consider for the protection of farmers' rights to plant varieties and related knowledge.

SECTION ONE
Conceptual Issues and Technical Notes

1.1 Biodiversity and agricultural biodiversity

Biodiversity is the variability among living organisms and the ecological complexes of which they are part, including diversity within species (genetic diversity), between species, and of ecosystems (CBD Secretariat 2008a). In essence, biodiversity can also be understood as the variability of all living organisms, including animal and plant species; of the genes of all these organisms; and of the terrestrial, aquatic and marine ecosystems of which they are part (see www.ciel.org).

Biodiversity is also the basis of agriculture as it has enabled farming systems to evolve ever since agriculture was first developed some 10,000 years ago in regions across the world including Mesopotamia, New Guinea, China, Mesoamerica, and the Andes. Within biodiversity, agricultural biodiversity is a broad term that includes all components of biological diversity of relevance to food and agriculture. It also includes all components of biological diversity that support the ecosystems of which agriculture is a part (agro-ecosystems): the variety and variability of animals, plants and micro-organisms at the genetic, species and ecosystem levels (Box 1.1) (CBD Secretariat 2008a).

1.2 Plant biodiversity

Plants are universally recognized as a vital part of the world's biological diversity and an essential resource for the planet. In addition to the small number of crop plants used for basic food and fibres, many thousands of wild plants have great economic and cultural importance and potential, providing food, medicine, fuel, clothing and shelter for vast numbers of people throughout the world. Plants also play a key role in maintaining the planet's basic environmental balance and ecosystem stability and provide an important component of the habitats for the world's animal life (CBD Secretariat and Botanic Gardens Conservation International 2008; www.cbd.int).

Box 1.1: Biodiversity and agricultural biodiversity at three levels of diversity		
Level of diversity	**Biodiversity**	**Agricultural biodiversity**
Ecosystem	An ecosystem is a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. Different types of ecosystems include forests, grasslands, wetlands, mountains, costal areas, lakes, and deserts.	The diversity of agro-ecosystems partly results from both agricultural and non-agricultural land and water uses. Examples of agro-ecosystems include rice paddies, pastoral systems, aquaculture systems, and cropping systems and the broader ecosystems within which these are based. Elements of these systems may be combined to form mixed systems.
Species	A species is a group of morphologically similar organisms that are able to interbreed and produce fertile offspring. A diverse number of species exists for plants, animals and micro-organisms.	The diversity of plants and animals used in agriculture resulted from human management of biodiversity for food, nutrition and medicinal purposes. For example, domesticated livestock include cattle, sheep, chickens, and goats. Examples of crop species include wheat, banana, cabbage, sweet potato, and ground nuts.
Genetic	Genetic diversity is the variation of genes for all individuals within a species; it determines the uniqueness of each individual, or population, within the species. The expression of DNA into traits, such as the ability to tolerate drought or frost, facilitates adaptation to changing conditions.	The diversity within species partly results from the selection by farmers based on specific traits to meet environmental and other conditions. For example, many varieties of corn, or maize, have been developed based on traits such as taste, height, colour and productivity. Many of these are now maintained as distinct populations entirely within agriculture.

Source: CBD Secretariat 2008a.

At present, a complete inventory of the plants of the world has not been assembled, but it is estimated that the total number of vascular plant species may be of the order of 300,000 (CBD Secretariat and Botanic Gardens Conservation International 2008). However, of the total plants available, only about 7,000 species of plants have been cultivated since humans first began farming, and today, only 30 crops provide an estimated 90 percent of the world population's dietary energy requirements. Out of this also, wheat, rice and maize alone provide about half the dietary energy consumed globally (CBD Secretariat 2008a).

1.3 Loss of plant biodiversity

The great diversity of plants is the result of both human and natural selection. Its conservation depends on proper management and sustainable use. Working against such notion is the fact that many plants are already in danger of extinction, threatened by habitat transformation, over-exploitation, alien invasive species, pollution and climate change (CBD Secretariat and Botanic Gardens Conservation International 2008). For example, for several major crops, up to 80–90 percent losses in variety over the past century have been reported (Andersen 2007).

There are also estimations showing that more than 90 percent of fruit tree and vegetable varieties found in farmers' fields at the beginning of the 20th century are no longer there. In the 1970s, Spain had almost 400 varieties of melons but today there are no more than 10; China has lost 90 percent of the wheat varieties it had just 60 years ago; Mexico has lost 80 percent of its corn varieties; India has lost 90 percent of its rice varieties; and in the Republic of Korea, only 26 percent of the crops cultivated in home gardens in 1985 were still there in 1993 (www.planttreaty.org).

The disappearance of such vital and large amounts of plant biodiversity sets one of the greatest challenges for the world community: to halt the destruction of the plant diversity that is so essential to meeting the present and future needs of humankind (Box 1.2) (CBD Secretariat and Botanic Gardens Conservation International 2008).

Box 1.2: Rising pressure of food demand

Global demand for food is already increasing considerably, driven by growth in world population, by dietary change arising from urbanization and increasing real incomes of households worldwide, and by the need and international commitment to lift people from poverty and malnutrition. While the increase in population is above the rate of increase in the yields of the three major cereals (wheat, maize and rice) that supply most nutritional needs, not only the global population has doubled over the past 50 years and is expected to reach 9 billion by 2050, demand for food and feed crops is also estimated to nearly double in the coming 50 years. Therefore, in today's world, the pressure is to improve agricultural production by developing food crops that can adapt to environmental changes and meet the growing food demands of a constantly increasing population.

Adapted from: CBD Secretariat 2008a; www.planttreaty.org; FAO 2008.

The rapid loss of plant diversity also points to the need to make efforts towards identifying the new plants as well as developing new varieties of already used plants so that the world is prepared to meet the special agricultural, horticultural and environmental challenges of the 21st century. Thus, it is crucial that all actors and agencies, including governments, make concrete and collaborative efforts towards creating an enabling and conducive environment for future breeding, agriculture development and food security.

This effectively also means an implementation of concrete policy and institutional measures in support of both *ex situ*[1] and *in situ*[2] conservation of agricultural biodiversity, including diversity of plants in general and plant genetic resources for food and agriculture (PGRFA)[3] in particular. In both of these conservation measures, one of the major issues is how countries devise conservation strategies while also facilitating access to plant genetic resources so as to promote their sustainable use and ensure benefits to all, including local, indigenous and farming communities (Adhikari 2008).

Also important in this regard is to understand the fact that approximately 80 percent of the world's remaining biodiversity is still found within indigenous peoples' territories and farm lands. Thus, while these communities are the major actors in the conservation, development and utilization of biodiversity, they are also the first to face the impacts of biodiversity loss and not least

[1] *Ex situ* conservation means the conservation of biological diversity outside their natural habitats, often in a laboratories, gene banks, botanical gardens, zoo, or aquariums.

[2] *In situ* or On-farm conservation refers to plants or their wild relatives that are conserved in the very place where they developed their present-day characteristics.

[3] ITPGRFA defines PGRFA as "any genetic material of plant origin of actual or potential value for food and agriculture".

climate change (www.cbd.int). Hence, any effort towards the commercialization of biodiversity and agriculture must bring to the centre stage the concerns and the rights of the local, indigenous and farming communities.

1.4 Commercialization of plant genetic resources

Until the 1980s, access[4] to and commercial exploitation of genetic resources[5] was not an issue of strict regulations across many countries. Later on, such trends, however, became a major source of debate between technology-rich and biodiversity-rich countries. In particular, such countries viewed that such access generated several concerns, ranging from unauthorized bioprospecting[6] and biopiracy[7] to unfair and unethical monopolies over the use of seeds as well as products that relied on the resources and associated traditional knowledge (TK)[8] obtained from their territories.

In the early 1980s, a series of global negotiations were held to address many of the concerns associated with biodiversity conservation and access to and use of genetic resources, mainly at forums held under the auspices of FAO. In 1983, the International Undertaking on Plant Genetic Resources was adopted at the FAO Conference. The objectives were to ensure that PGRFA would be explored, preserved, evaluated and made available for plant breeding and scientific purposes. The Undertaking was based on "the universally accepted principle that plant genetic resources are a heritage of mankind and consequently should be available without restriction" (Andersen 2005).

---

[4] Access is the acquisition of biological (genetic) resources and / or TK, innovations, technologies or practices.

[5] Article 2 of the CBD defines the term, "genetic resources" to mean "genetic material of actual or potential value, and "genetic material" to mean "any material of plant, animal, microbial or other origin containing functional units of heredity."

[6] Bioprospecting is the systematic process of inventorying, sampling, collecting and testing the biological materials to search for economically and socially valuable genetic and biochemical resources in the nature (Posey and Dutfield 1996).

[7] Biopiracy does not merely mean unauthorized extraction and use of biological and genetic resources but also includes authorized extraction and use of such resources on the basis of an exploitative transaction. Such exploitative transaction occurs, when, among others, donors of the resources (who are the most ill-informed) are not adequately compensated (see Dutfield 2004).

[8] TK is a broad term referring to knowledge systems, encompassing a wide variety of areas, held by traditional groups or communities or to knowledge acquired in a non-systemic way. These knowledge systems have significance and relevance not only to its holders but to the rest of the humanity (www.traditionalknowledge.info). The protection of the rights of TK holders, communities who create or develop and practice TK relevant to the conservation, development and use of biological and genetic resources, including plant genetic resources, is a major issue in the debate of recognizing IPRs in the area of biodiversity and agriculture.

However, such principle created divisions between the technology-rich countries (mostly the users of resources) and biodiversity-rich countries (mostly the providers of resources). Moreover, while technology-rich countries made it possible for the Undertaking to recognize intellectual property rights (IPRs)[9] such as plant breeders' rights[10] while facilitating access to plant genetic resources, biodiversity-rich countries made some reservations to such recognition. The biodiversity-rich countries highlighted that while new plant varieties were allowed to generate significant amount of returns to the breeders and seed companies through exclusive rights over the production, marketing and distribution of new seeds, there was no system to address the equity considerations in the commercialization process of plant genetic resources and related knowledge, for example, with regard to sharing of benefits[11] arising out of the commercial use of genetic resources (see Adhikari 2008; Correa 2000).

These countries, therefore, feared that an exclusive recognition to plant breeders' rights would marginalize the local, indigenous and farming communities, restricting their rights over genetic resources and related TK and would institutionalize the inequitable and unfair practices such as:

- biopiracy and misappropriation of TK through unauthorized access to and / or commercial exploitation of their resources and TK (such as without obtaining prior informed consent (PIC)[12] from the government and the concerned communities);
- their exclusion in the benefits arising out of the commercial utilization of their resources and TK; and

---

[9] Intellectual property refers to the creation of the mind in the form of ideas and knowledge. IPR is the right granted to a person for his / her intellectual creation where he / she uses his / her ideas and knowledge. While granting an IPR to a person, the right is conferred exclusively for a definite period (in some types of IPRs for an indefinite period, e.g., trade secrets) to the creator. The main purpose of granting IPRs is to legally recognize and reward the creators for their intellectual creation and make the inventions available for consumption and use by other people and industries (see www.wto.org).

[10] Plant breeders' rights for the protection of new plant varieties are the rights provided to breeders for making available the invented seeds in the market. Such rights generally comprise exclusive marketing rights to breeders for the use, production, reproduction, and selling and marketing of new seeds (see www.upov.int).

[11] Benefit sharing is the sharing of benefits (either in a monetary or a non-monetary form or both) arising out of the commercial use of resources and / or TK between the provider (owner) and the receiver (user) of the resources and / or TK.

[12] PIC is the consent that the receiver (user) of resources and / or TK, based on complete and accurate information, needs to obtain from the provider (owner) of resources and / or TK. In international law, PIC has been defined to broadly mean "the consent of a party to an activity that is given after receiving full disclosure regarding the reasons for the activity, specific procedures the activity would entail, potential risks involved and the full implications that can be foreseen." It is a necessity during every stage of the access and benefit sharing agreement process as it ensures that the Parties to the agreement are aware of the possible gains as well as likely consequences of the agreement being made (Jairaj 2007).

- “strict” restrictions on the use of products (including seeds) and technologies protected by IPRs such as patents and plant breeders' rights.

These concerns led such countries to call for the protection of the rights of local, indigenous and farming communities by the International Undertaking so that there was a counterbalance to exclusive rights provided to IPR holders. Such a call from many developing and least-developed countries later made it possible for the Undertaking to realize the importance of recognizing farmers' rights over plant genetic resources (see Adhikari 2008).

1.5 Farmers' rights over plant genetic resources

Following a series of negotiations on the common heritage principle and implications of the exclusive recognition to IPRs within the International Undertaking, in 1989, for the first time farmers’ rights were formally recognized by the FAO Conference (Box 1.3). In 1991, the Conference then decided to set up a fund for the realization of the recognized farmers' rights but it did not materialize. Then in May 2002, the Convention on Biological Diversity (CBD) was adopted. CBD did not *per se* mention about farmers' rights but came up with a global understanding and commitment for the protection of the rights of local and indigenous communities over their genetic resources and related TK (see Andersen 2005; Adhikari 2008).

But as an important initiative, along with the adoption of the Convention, a resolution on the interrelationship between the CBD and the promotion of sustainable agriculture came into being. In this resolution, FAO was urged to commence negotiations for a legally binding international regime on the management of PGRFA, and in this context, to address the issue of the protection of farmers’ rights. Besides this, Agenda 21, which was approved at the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, also voiced such need and stated that the appropriate United Nations agencies and regional organizations should “strengthen the Global System on the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture (PGRFA) by...taking further steps to realize Farmers’ Rights” (See Andersen 2005; Correa 2000).

Box 1.3: First global recognition to farmers' rights

The establishment of a system of free access under the International Undertaking in 1983 provoked some concerns in developed countries regarding the situation of materials under private control, particularly those protected by plant breeders' rights. The aim of the International Undertaking was not to prejudge the means of appropriation that countries (while exercising their sovereign rights) could establish in respect of plant genetic resources. Hence, it was recognized that: *"Plant Breeders' Rights, as provided for under UPOV (International Union for the Protection of New Varieties of Plant) are not incompatible with the International Undertaking" (Article 1. of the Agreed Interpretation, FAO Resolution 4 / 89).*

In recognizing such legitimacy of plant breeders' rights, a serious asymmetry became apparent. Breeders were able to secure IPRs over the varieties they created, but the value added by traditional farmers received no recognition. The concept of farmers' rights, thus, emerged as a means to "provide a counterbalance to intellectual property rights". It was first introduced by FAO Resolution 4 / 89, unanimously approved by more than 160 countries, and was further defined by FAO Resolution 5 / 89 as: *rights arising from the past, present and future contribution of farmers in conserving, improving and making available Plant Genetic Resources, particularly those in the centres of origin / diversity. These rights are vested in the International Community, as trustees for present and future generations of farmers, for the purpose of ensuring full benefits of farmers and supporting the continuation of their contributions…."*

One of the objectives of farmers' rights, in accordance with the same Resolution, is to allow farmers, their communities, and countries in all regions, fully to participate in the benefits derived, at present and in the future, from the improved use of plant genetic resources, through plant breeding and other scientific methods. In sum, the concept of farmers' rights was adopted with a view to realizing the objective of balancing the rights of traditional breeders and of commercial plant breeders, while allowing the farmers to benefit, in some way, from the value that they have creatively contributed.

Though the concept was only defined in a broad, imprecise manner, it recognized the role of farmers as custodians of biodiversity and helped to call attention to the need to preserve practices that are essential for a sustainable agriculture. The adoption of that concept fostered an intense debate on the ways to recognize and reward traditional farmers, not only to the current benefit of such farmers but in order to ensure the continuity of activities that are crucial for humanity at large.

Source: Correa 2000

And in 1996, the International Technical Conference on Plant Genetic Resources in Leipzig adopted the Global Plan for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture, which also shared the vision of the need to recognize and protect farmers' rights. Finally, in 2001, when the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) was adopted, for the first

time, provisions for the protection of farmers' rights in relation to PGRFA and TK appeared in a legally binding international treaty. This historic accord, while representing a legally binding, international commitment to improvement of the world's key food and feed crops, deals with the issue of farmers' rights in the preamble, in a separate chapter and in two other articles (see Andersen 2005; www.planttreaty.org).

1.6 Convention on Biological Diversity

Negotiated under the auspices of the United Nations Environment Programme (UNEP), CBD opened for signature on 5 June 1992 at the Rio Earth Summit, and entered into force on 29 December 1993. The Convention is legally binding and Contracting Parties are obliged to implement its provisions. Presently, 190 countries, including all the ASEAN member countries (Table 1.1), and the European Community are its members. The Convention has three objectives — the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilization of genetic resources. It also addresses issues relating to research and training, public education and awareness, and technical and scientific cooperation (www.cbd.int).

Table 1.1: Ratification of CBD by ASEAN member countries

Brunei Darussalam	Acceded on 27 July 2008
Cambodia	Acceded on 9 February 1995
Indonesia	Signed on 5 June 1992 and ratified on 23 August 1994
Lao PDR	Acceded on 20 September 1996
Malaysia	Signed on 12 June 1992 and ratified on 24 June 1994
Myanmar	Signed on 11 June 1992 and ratified on 25 November 1994
Singapore	Signed on 12 June 1992 and ratified on 21 December 1995
Philippines	Signed on 12 June 1992 and ratified on 8 October 1993
Thailand	Signed on 12 June 1992 and ratified on 29 January 2004
Vietnam	Signed on 28 May 1993 and ratified on 16 November 1994

Source: www.cbd.int

The Convention recognizes the sovereign rights of States over their natural resources in areas within their jurisdiction. Parties to the Convention, therefore, have the authority to determine physical access to genetic resources in areas within their jurisdiction. Parties also have the obligation to take appropriate measures with the aim of sharing the benefits derived from their use (www.cbd.int).

In particular, access and benefit sharing (ABS) and PIC — the two major equity concerns in the commercialization process of biological diversity and TK — have been recognized and legitimized in CBD. Though negotiations for an International ABS Regime are underway within CBD (Box 1.4), Article 15 of the Convention currently provides a framework for the implementation of ABS on a bilateral basis among its parties. In recognition of the sovereign rights of the states over their biological resources, national governments, subject to their national laws, are conferred the authority to determine access to genetic resources. The Convention requires the Parties to create conditions, subject to allowed safeguards, to facilitate access to genetic resources for environmentally sound uses by other Parties (See Ravi 2005; Adhikari 2006).

According to CBD, access to genetic resources should be on mutually agreed terms and also on PIC of the Parties providing the access. The providing and accessing Parties are required to establish legal, administrative and policy measures on mutually agreed terms to achieve fair and equitable sharing of technological benefits arising from research and developments, and economic benefits arising from the commercial utilization of genetic resources (See Ravi 2005; Adhikari 2006).

In the preamble to the Convention, the international community has recognized the close and traditional dependence of many indigenous and local communities on biological resources. There is also a broad recognition of the contribution that TK can make to both the conservation and the sustainable use of biological diversity. And, Article 8(j) of the Convention provides for equitable sharing of benefits arising from the utilization of knowledge, innovations and practices of the local and indigenous communities embodying traditional life styles relevant for conservation and sustainable use of biological diversity. The Convention mentions that access to such knowledge, subject to national laws, has to be with the approval and involvement of the holders of such knowledge (See UNEP / CBD 2003).

Box 1.4: CBD negotiations on an international ABS regime

Within CBD, there have been some developments with regard to negotiations for an International ABS Regime. Such regime, by setting out a clear and transparent ABS framework, is being negotiated within CBD mainly to ensure that biodiversity-rich developing countries obtain a fair and equitable share of benefits arising out of the use of genetic resources originating from their territories. At the fourth meeting of the Conference of the Parties to CBD (COP4) in 1998, Parties established a Panel of Experts on ABS to clarify concepts and principles related to the ABS issue such as PIC and mutually agreed terms.

Taking into account the work of the Panel of Experts, in 2000, COP5 established the *Ad Hoc* Open-ended Working Group on ABS with the mandate to develop guidelines and other approaches to assist Parties and stakeholders with the implementation of the ABS provisions. The Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits Arising from their Utilization, developed by the Working Group, were adopted by COP6 in 2002. These guidelines are voluntary. They are meant to assist Parties when establishing administrative, legislative or policy measures on ABS and / or when negotiating ABS agreements.

At the World Summit for Sustainable Development in 2002, in Johannesburg, South Africa, governments called for the negotiation of an international ABS regime. Further to this call for action, at COP7 in 2004, the COP mandated the Working Group on ABS to elaborate and negotiate an international ABS regime with the aim of adopting an instrument / instruments to effectively implement the provisions in Article 15 (access to genetic resources) and 8(j) (traditional knowledge) of the Convention, and the three objectives of the Convention. The COP also agreed on the terms of reference for the Working Group, including the process, nature, scope and elements for consideration in the elaboration of the regime.

The mandate of the Working Group was extended at COP8, where the COP requested the Working Group to complete its work as soon as possible and no later than 2010. It also designated two Co-chairs to lead the negotiation process: Timothy Hodges from Canada and Fernando Casas from Colombia. Further to COP8, two meetings of the Working Group on ABS, as the negotiating body of the international regime, were held prior to COP9. The Working Group on ABS held its fifth meeting in Montreal, Canada, from 8 to 12 October 2007, and its sixth meeting in Geneva, Switzerland, from 21 to 25 January 2008.

And at COP9 in Bonn, Germany in 2008, Parties agreed on a firm process towards the establishment of international ABS rules. The global gathering also produced a plan for the negotiations that not only sets out a clear roadmap leading up to 2010, but also provides a short list of options as to which elements should be legally binding and which not.

Adapted from: CBD Secretariat 2008

1.7 International Treaty on Plant Genetic Resources for Food and Agriculture

After more than 15 sessions of the FAO Committee on Genetic Resources and its subsidiary bodies, ITPGRFA was approved during the FAO conference in 2001. The Treaty was introduced to harmonize the International Undertaking on Plant Genetic Resources signed in 1983 with CBD. The Treaty came into force on 29 June 2004 and, until now, 116 countries, including most of the Southeast Asian countries (Table 1.2), are its contracting parties.

Table 1.2: Ratification of ITPGRFA by ASEAN member countries

Brunei Darussalam	Yet to act upon for being a party
Cambodia	Signed and accepted on 11 June 2002
Indonesia	Acceded on 10 March 2006
Lao PDR	Acceded on 14 March 2006
Malaysia	Acceded on 5 May 2003
Myanmar	Acceded on 4 December 2002
Philippines	Acceded on 28 September 2006
Singapore	Yet to act upon for being a party
Thailand	Signed on 4 November 2002
Vietnam	Yet to act upon for being a party

Source: www.planttreaty.org

This Treaty only covers PGRFA and does not deal with other plant genetic resources. It sets up a multilateral system[13] of ABS, and the application of the Treaty's multilateral system is limited to 64 plant genetic resources — food and forages — that, according to FAO, are fundamental to food security and are either in the public domain or are under the hold of natural and legal persons.[14] In its Article 9, the Treaty recognizes the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centers of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world (www.planttreaty.org).

In Article 9, ITPGRFA has recognized their rights to save, use, exchange and sell farm-saved seed / propagating material. In addition, in the same Article, the Treaty also mentions other important farmers' rights: right to TK; right to participate in sharing benefits; and right to participate in making decisions at

[13] In the case of CBD, access to genetic resources and benefit sharing arrangements are a bilateral matter, i.e., Parties have to bilaterally deal with ABS issues based on mutually agreed terms between the two.

[14] See Annex 1 of the Treaty for the listed food and forages at http: / / www.planttreaty.org /

the national level. With regard to the implementation of farmers' rights, the Treaty, however, gives the responsibility to governments, which is one of its weakest aspects. Not all countries that ratify the Treaty have obligations to implement farmers' rights. The Treaty states, "...in accordance with their needs and priorities, each Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights...". In addition to it, the provisions of the Treaty on general obligations and financial resources also refer to farmers (See FAO 2002).

Box 1.5: Provisions on farmers' rights in Article 9 of ITPGRFA

Article 9 of the ITPGRFA has the following sub-articles on farmers' rights:

9.1 The Contracting Parties recognise the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centers of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world.

9.2 The Contracting Parties agree that the responsibility for realising Farmers' Rights, as they relate to plant genetic resources for food and agriculture, rests with national governments. In accordance with their needs and priorities, each Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights, including: (a) protection of traditional knowledge relevant to plant genetic resources for food and agriculture; (b) the right to equitably participate in sharing benefits arising from the utilisation of plant genetic resources for food and agriculture; and (c) the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.

9.3 Nothing in this Article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm saved seed / propagating material, subject to national law and as appropriate.

Adapted from: FAO 2002

In particular, it is important to note that though CBD and ITPGRFA have been perceived to be consistent with each other's objectives, in several of the cases, such as in relation to access to resources through the multilateral system, and benefit sharing from the multilateral funding mechanism, ITPGRFA seems to have weaken the spirit and objectives of CBD. In the case of CBD, access to resources, and benefit sharing arrangements have to be dealt by concerned Parties through bilateral negotiations, for example, based on mutually agreed terms. Supporters of ITPGRFA view that the Treaty's provisions are, however, consistent with the CBD objectives and its multilateral system as well as

benefit sharing mechanism merely mean to facilitate access to PGRFA so that breeding and scientific works continue in a desired scale.

1.8 International Union for the Protection of New Varieties of Plants

The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organization with headquarters in Geneva, Switzerland. UPOV was established by the International Convention for the Protection of New Varieties of Plants. The objective of the Convention is the protection of new varieties of plants by an IPR (www.upov.int).

So far, UPOV has 67 members, including two countries — Singapore and Viet Nam — from the Southeast Asia region. Most developed countries have chosen this Convention as their law for plant variety protection because it suits the requirement of their industrial farming and it is in their interest to promote breeders' rights and strengthen private control over seeds through corporations.

However, it is not considered an effective plant variety protection system for those developing countries that have traditional farming systems. Yet, it is much to the dismay of such countries that in order to provide protection to plant varieties, they are being forced to become UPOV members even though not a single provision of any of the WTO agreements has indicated that the adoption of UPOV is required to provide intellectual property protection to plant varieties (Adhikari and Adhikari 2003).

The UPOV Convention has undergone three revisions since it was signed in 1961. The 1972, 1978 and 1991 amendments to the UPOV Conventions have progressively strengthened the protection afforded to plant breeders (www.upov.int).

Compared to the earlier versions, UPOV 1991 provides the highest possible level of protection to breeders, severely diluting "Farmers' Privilege" and restricting farmers' rights to save, reuse, exchange and sell seeds (Box 1.6). For example, Article 15.2 of the latest UPOV Convention is in sharp contrast to the earlier system, which had allowed farmers to reuse protected materials without paying any royalty to commercial breeders. UPOV 1991 allows farmers to reuse protected material only if the "legitimate interests of the breeders" are taken care of — the legitimate interests being nothing but the royalty that farmers need to pay to the breeders to use their new varieties. Many actors and agencies, as well as developing and least-developed countries view it as "downgrading of the Farmers' Privilege" (Dhar 2002).

Box 1.6: Downgrading of farmers' privilege by UPOV 1991

Under UPOV 1978, though farmers were not allowed to sell seeds obtained from the protected varieties, there was no bar on them to store these seeds for cultivation, replant them and develop new plants from them, which was considered Farmers' Privilege. UPOV 1991 gives wider protection to plant breeders. Farmers are permitted use of the protected varieties only with respect to acts done: privately and for non-commercial purposes; for experimental purposes; and for the purpose of breeding varieties other than those which are "essentially derived varieties".

Adapted from: Adhikari and Adhikari 2003; ActionAid, Consumers International and Gene Campaign 2002

In the developing countries, almost all agricultural researches and plant breeding activities are financed by taxpayers' money. Public institutions in these countries play a vital role in this regard. Such researches in these countries, therefore, belong to the public. However, the laws under UPOV are formulated by societies where research on seed is conducted more in private domains than in public institutions, and where private capital finances plant breeding. Because they invest in expensive breeding methods and need to secure returns on their investments, seed companies in Europe and North America seek market control through strong IPRs. But these conditions do not apply to most developing countries (Sahai 2003).

Such countries do not have big seed companies. Their major seed producers are farmers and farmers' cooperatives (Box 1.7). Logically, their laws will have to concentrate on protecting farmers' interests and rights as producers as well as consumers of seeds (Adhikari and Adhikari 2003).

Box 1.7: Voice for farmers against UPOV

In the developing countries, farmers play a significant role as breeders of new varieties of plants. They often release very successful varieties by crossing and selection from their fields. These varieties are released for use as such. In addition, in almost all cases, these varieties are taken up by agriculture research stations as breeding materials for producing other varieties. Such farmers / breeders would not be able to participate in an expensive system like UPOV.

Obtaining an UPOV-authorized Breeders' Right Certificate is out of the capacity of most farmers and thus effectively aims to make only them the consumers of seeds produced by big enterprises. Instead, their materials along with their labour and innovation would be misappropriated by those with the money to translate such valuable germplasms into money-spinning varieties registered under the UPOV system.

Poor farmers unable to pay the costs for getting an UPOV certificate would tend to sell their varieties to larger seed companies, just for small sums. This will be the ultimate irony, creating an institution that will snatch away from a farmer, his / her materials and opportunities.

Adapted from: Adhikari and Adhikari 2003; ActionAid, Consumers International and Gene Campaign 2002

1.9 Agreement on Trade-Related Aspects of Intellectual Property Rights

When the issues relating to access to and commercial use of PGRFA, breeders' rights and farmers' rights were being discussed under the auspices of the FAO, other major developments concerned to these issues were taking place in a different forum, i.e., the Uruguay Round of multilateral trade negotiations (1986-1994) under the General Agreement on Tariffs and Trade (GATT) 1947. With the culmination of the Uruguay Round of negotiations in 1995, GATT 1947 was converted into a new rules-based multilateral trading system, the World Trade Organization (WTO). Out of the 10 ASEAN members, only Lao PDR is still undergoing the accession process and yet to be a member of the WTO, which currently consists of 153 member countries (Table 1.3).

The WTO, with its binding multilateral agreements and decisions, and sanction-based mechanism, is the most powerful international trade body of the present time. Unlike the GATT 1947, it does not merely deal with goods trade but encompasses rules on services trade as well as trade-related aspects of IPRs (Box 1.8).

In particular, the enforcement of IPRs under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the WTO has severe implications for the conservation and use of genetic resources, including PGRFA, and for the rights of local, indigenous and farming communities over their resources and related knowledge.

In connection to the multilateral protection regime for the trade-related aspects of IPRs, the application of patents and plant variety protection in agriculture has long been contentious, mainly because of the provisions under TRIPS Article 27. As a whole, this Article deals with patentable subject matter, mentioning which inventions WTO Members are obliged to make eligible for patenting and what they can exclude from patenting (based on their own needs and priorities). Inventions that can be patented include both products and processes, and should cover all fields of technology, including biotechnology[15] (www.wto.org).

[15] The TRIPS Agreement does not define biotechnology. Article 2 of the CBD defines the term "biotechnology" to mean "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use." Generally, the research on and development of agricultural products such as crop varieties and crop protection products by modifying genes to confer desirable properties such as pest resistance or improved nutritional profiles is known as agricultural biotechnology (www.traditionalknowledge.com).

Table 1.3: WTO and UPOV membership and plant variety protection laws			
Countries	**WTO membership**	**Status of plant variety protection laws***	**UPOV membership**
Brunei Darussalam	1 January 1995	-	No
Cambodia	13 October 2004	Developing a plant variety protection law	Not yet but has been forced to make a commitment during negotiations for WTO membership to join it
Indonesia	1 January 1995	Plant Variety Protection Act 2000	No
Lao PDR	Applied in 1998	Developing a plant variety protection law	No
Malaysia	1 January 1995	Protection of New Plant Varieties Act 2004	No
Myanmar	1 January 1995	Developing a plant variety protection law	No
Philippines	1 January 1995	Philippine Plant Variety Protection Act of 2002 (Republic Act No. 9168)	No
Singapore	1 January 1995	-	Became a member of UPOV 1991 on 30 July 2004
Thailand	1 January 1995	Plant Varieties Protection Act, B.E. 2542 (1999)	No
Viet Nam	11 January 2007	The Vietnamese Ordinance on Plant Varieties 2004 (based on UPOV 1991)	Became a member of UPOV 1991 on 24 December 2004

Source: www.wto.org; www.upov.int
** Kumar 2008; SEACON 2008a.*

Box 1.8: IPRs under WTO / TRIPS

Establishing a minimum standard for the implementation of IPRs is one of the major features of the TRIPS Agreement. This means that WTO members have to provide a minimum standard of protection for IPRs (e.g., 20 years in the case of patents), that too, in both products and processes, and in all fields of technology, including biotechnology. IPRs under TRIPS are two types such as copyright and related rights; and industrial property rights that include trademarks, geographical indications, patents, plant breeders' rights, industrial designs, trade secrets, and layout designs of integrated circuits.

Copyright and related rights: Copyright includes the right relating to literary and artistic works (e.g., book, article, music, etc.). Such a right is granted for a minimum period of 50 years after the death of the copyright holder. Likewise, under copyright, rights of performers (actor, singer, musician, etc.), producers of phonograms (sound recordings) and broadcasting institutions are also protected. The main purpose of granting such rights is to encourage and reward the creative literary and artistic works and the creators of such works.

Industrial property rights: These rights can also be grouped into two categories. In the first category, distinctive signs — especially trademark, which distinguishes a particular good or service from another good or service (e.g., a brand name in a product), and geographical indication, which distinguishes a particular good from another good on the basis of geography (e.g., tea of a particular place) — are protected. These IPRs can be given for an indefinite period provided the signs used continue to remain distinctive. The protection of these IPRs is meant to ensure fair competition and protect consumers, by enabling them to make informed choices between various goods and services.

In the second category of industrial property rights are IPRs such as patent, industrial design and trade secret. Patent is granted for innovations in products (e.g., new seeds) as well as processes (e.g., new technologies); industrial design for new designs of goods (e.g., designs of clothing and jewellery); and trade secret for maintaining secrecy in matters relating to trade (production-related information or marketing information, e.g., a formula to make a product). While patent can be protected for 20 years and industrial design for at least 10 years, trade secret can be protected till the period right holders want. The purpose of granting these IPRs is to provide protection to the creator and create incentives to stimulate investment in the development of new products and technologies.

Besides these, there are other IPRs that are dealt by TRIPS such as layout designs of integrated circuit, which are granted in the field of electronics (e.g., a digital programme) and plant variety protection (e.g., breeders' rights over new seeds).

Adapted from: www.wto.org

Specifically, Article 27.3 (b) allows member governments to exclude some kinds of inventions from patenting, i.e., plants, animals and "essentially" biological processes. The Article, however, makes it mandatory for WTO members to provide patent protection to micro-organisms, and non-biological and microbiological processes, on the basis of three patent eligibility criteria: they must be new, involve an inventive step, and should be industrially applicable (Box 1.9).

Box 1.9: Provisions of TRIPS Article 27.3 (b)

1. ..., patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application...., patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.

2. Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.

3. Members may also exclude from patentability:

(a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals;
(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 subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

Source: WTO 2002

Further, though Article 27.3 (b) gives an option to exclude plants from patenting in its first sentence, the same Article, in its second sentence, makes it mandatory for members to provide protection to plant varieties. As per the Article, plant varieties have to be eligible for protection either through patent protection or a system created specifically for the purpose (*sui generis*[16]), or a combination of the two (Box 1.9). The TRIPS Agreement does not specify

[16] *Sui generis* is a Latin phrase meaning "of its own kind". A *sui generis* legal system, for example, is a legal system specifically designed to address the needs and concerns of a particular issue.

any criteria for the protection of plant varieties but UPOV, on one hand, does explicitly mention that novelty, distinctness, uniformity and stability (DUSN) are the four essential criteria for the protection of new varieties of plants (www.upov.int).

Box 1.10: Patent and plant variety protection rights

Patents and plant variety protection are the two different forms of IPRs dealt by the TRIPS Agreement. Both provide exclusive monopoly rights over a creation for commercial purposes for a specified period of time, for example, for the use, reproduction and sale of new seeds.

A patent is a right granted to an inventor to prevent all others from making, using, and / or selling the patented invention for 20 years. The criteria for the patenting of any product or processes, which are also mentioned in the TRIPS Agreement, are: they must be new, involve an inventive step, and should be industrially applicable.

On the other hand, plant variety protection, though it is an alternative system to patent, provides patent like rights to plant breeders. Though the TRIPS Agreement does not mention about plant variety protection, the general essential criteria for the protection of new plant varieties are: novelty, distinctness, uniformity, and stability. For the seed industry, plant variety protection is regarded as the weaker sister of patenting mainly because of these exemptions. Yet, often touted as a "soft" kind of IPR regime, plant variety protection laws are just as threatening as patents and may pose severe impacts on farmers' rights to seeds.

Source: Kuyek 2002; www.grain.org

In particular, a number of biodiversity-rich developing and least developed countries view that TRIPS has generated several concerns due to the requirement to provide non-discriminatory[17] intellectual property protection in areas such as plant breeding. Such countries argue that the Agreement has created a route for the inventors to obtain “excessively broad patents” or breeders' rights over plant varieties (Box 1.10) in such a manner they not only affect the environment and biodiversity, but also the rights of local, indigenous and farming communities over their resources and related knowledge. It is for these and many other reasons, biodiversity-rich countries have been arguing at the WTO level to review Article 27.3 (b) and amend the TRIPS Agreement.

[17] There are two important non-discriminatory principles within the WTO system: most-favoured-nation (MFN) and national treatment. According to the MFN principle, a country should not discriminate between its trading partners and give them equally “most-favoured-nation” or MFN status. The national treatment principle means that a country should not discriminate between its own and foreign products, services, IPRs or nationals. These treatments also apply in the case of the implementation of TRIPS by Southeast Asian countries.

1.10 TRIPS review process and the Doha Declaration

Article 27.3 (b) of TRIPS has mandated WTO members to review its provisions four years after the implementation of the Agreement. As the Agreement came under implementation in 1995, the review negotiations started in 1999 at the WTO's Council for TRIPS. Due to diverse views and concerns, the negotiations did not, however, reach any consensus until 2000.

Then in 2001, at the WTO Ministerial level itself, a significant decision was made among all members. The Fourth Ministerial Conference of the WTO held in Doha in 2001 mandated the Council for TRIPS in the Main Doha Declaration to examine, *inter* alia, the relationship between TRIPS and CBD. Paragraph 19 of the Doha Ministerial Declaration states: "We instruct the Council for TRIPS, in pursuing its work programme including under the review of Article 27.3(b), the review of the implementation of the TRIPS Agreement under Article 71.1[18] and the work foreseen pursuant to paragraph 12 of this Declaration, to examine, *inter alia*, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore, and other relevant new developments raised by Members pursuant to Article 71.1. In undertaking this work, the TRIPS Council shall be guided by the objectives and principles set out in Articles 7[19] and 8[20] of the TRIPS Agreement and shall take fully into account the development dimension".

Notwithstanding such a breakthrough and consensus made in favour of biodiversity-rich countries, WTO members continue to remain divergent with regard to the review of Article 27.3 (b) during negotiations at the Council for TRIPS (Box 1.11).

---

[18] The Council for TRIPS shall review the implementation of this Agreement after the expiration of the transitional period referred to in paragraph 2 of Article 65. The Council shall, having regard to the experience gained in its implementation, review it two years after that date and at identical intervals thereafter. The Council may also undertake reviews in the light of any relevant new developments which might warrant modification or amendment of this Agreement.

[19] The protection and enforcement of intellectual property rights should contribute 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.

[20] 1. Members may, in formulating or amending their laws and regulations, 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, provided that such measures are consistent with the provisions of this Agreement. 2. Appropriate measures, provided that they are consistent with the provisions of this Agreement, may be needed to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology.

Box 1.11: Divergence during review negotiations under the Council for TRIPS

Many countries have expressed concerns with regard to the implementation and implications of Article 27.3 (b). In particular on the issue of the need to enforce domestic plant variety protection laws for protecting plant breeders' rights as a form of IPRs in the seed sector, WTO Members have expressed diverse interests and views. Some developed countries view that plant variety protection allows development of new technological solutions in the field of agriculture. They argue that such protection also encourages the easy introduction of new varieties and ensures that breeders continue breeding effectively.

They have also made a point that improvements in agricultural biotechnology have resulted in the design of new plants through direct manipulation of the genome of a plant rather than reliance upon conventional plant breeding techniques that involve a trial and error process. Advances in the area include the development of new crops with higher productivity, yields and disease resistance. Further, it has been said that strengthened plant variety protection ensures a more efficient agricultural sector, by providing incentives to the private sector to make investments in the plant breeding sector.

On the other hand, some developing countries argue that the protection of plant varieties can have adverse implications for the fulfilment of their national goals, in particular with regard to food security, health, rural development and equity for local communities, whose TK systems have produced staple varieties, including varieties that have medicinal and biodiversity value. A group of countries also view that plant variety protection could lead to excessive dependence on foreign commercial breeders, and that such persons could not always be relied upon. Concern has also been expressed about the possible adverse implications for the cooperative relationships among neighbouring farmers that are common in developing countries and the difficulty of traditional farmers in having the capacity or education required to use the system to protect their own interests. Therefore, many developing countries such as Brazil and India have been calling for the need to address such concerns and create a space within the TRIPS Agreement to balance the rights of both breeders and farmers.

A group of developing countries have also proposed for inserting some provisions in TRIPS Article 27.3 (b) so that global IPR rules safeguard farmers' rights to livelihood. They view that a footnote should be inserted after the sentence on plant variety protection in Article 27.3(b), stating that any *sui generis* law for plant variety protection can provide for: the protection of innovations of indigenous and local farming communities in developing countries, consistent with CBD and ITPGRFA; the continuation of traditional farming practices including the right to save and exchange seeds, and sell farmers' harvest; and the prevention of anti-competitive rights or practices which threaten the food sovereignty of developing countries. A group of another developing countries also view that provisions permitting specific exceptions to plant breeders' rights should be included in TRIPS covering, as a minimum, farmers' rights, in particular to sow and share harvested seed of a protected variety, communities' rights and compulsory licensing where plant varieties are not available on reasonable commercial terms, in times of national emergency and in cases of public non-commercial use.

Source: Adhikari and Adhikari 2007; WTO 2006

1.11 The IPR debate in the development context

IPRs are a tool that can support agriculture development through the creation of ideas, knowledge and innovations in the agricultural sector. However, to a great extent, IPRs may also affect the traditional patterns of farming and livelihood of farmers. Thus, intellectual property regime needs to be tailored to the conditions within each country, keeping in view the specific development needs and priorities in the agricultural sector. The goal should be to provide incentives for seed sector development through IPRs such as trademarks, trade secrets and plant breeders' rights but such incentives should not create unnecessary limitations on the practices and livelihoods of farmers (See World Bank 2006).

Hence, there is a need for the government as well as concerned stakeholders and community groups to work together and develop a comprehensive and development-friendly IPR policy so that both breeders and farmers benefit without unnecessarily affecting each other's rights.

It is due to these important reasons, at present, global negotiations at the WTO level as well as other international levels, including at the FAO, have been passing through a critical time. Negotiations in these forums have indicated that there is still a divide on how to facilitate access to genetic resources and associated TK and promote their commercialization and sustainable use.

The conflict between CBD and TRIPS, and limited efforts made at the WTO level to examine their relationship and narrow down the differences between technology-rich and biodiversity-rich countries have discouraged many countries to implement and take required institutional measures to implement IPR policies and laws in agriculture. In addition, the developments taking place at the World Intellectual Property Organization (WIPO)[21], for example, with regard to a Substantive Patent Law Treaty (also known as SPLT) are also likely to have significant influence on the available flexibilities for countries to design a pro-farmer IPR regime.

Therefore, it is crucial for Southeast Asian countries to devise such policy and legal measures that balance the interests of both breeders and farmers. In this

[21] WIPO was established by the WIPO Convention in 1967 with a mandate from its Member States to promote the protection of intellectual property throughout the world through cooperation among states and in collaboration with other international organizations. Its headquarters is in Geneva, Switzerland (www.wipo.int)

process, the fundamental thrust should be on the need to create a sustained base for the growth of the agricultural sector as well as promotion of mechanisms that protect farmers' rights that could be affected due to the implementation of IPRs in the seed sector.

SECTION TWO

The Economy and Agriculture Of Southeast Asia

2.1 Southeast Asian economy

The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967 in Bangkok by the five original Member Countries: Indonesia, Malaysia, Philippines, Singapore, and Thailand. Brunei Darussalam joined on 8 January 1984, Vietnam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999. As of 2006, the ASEAN region had a population of about 560 million, a total area of 4.5 million square kilometers, a combined gross domestic product of almost US$ 1,100 billion, and a total trade of about US$ 1,400 billion (www.asean.org).

The collective goal of peace, progress and prosperity among countries in Southeast Asia is anchored on a high economic growth path supported by competitiveness, economic integration, and regional peace as expressed in "ASEAN Vision 2020: A concert of Southeast Asian nations, outward looking, living in peace, stability, and prosperity, bonded together in partnership in dynamic development and in a community of caring societies." While this goal was expressed in the latter part of 1997, it actually describes the development paths that the majority of countries in the region have followed, especially since the mid-1980s. It was during that time that Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand became increasingly globally integrated. Cambodia, Laos, and Viet Nam have assimilated with the globalization process albeit at varying degrees. Since 1992, ASEAN countries have embarked on a path towards greater regional economic integration (UNDP 2004).

In today's context, Southeast Asia is among the most open economic regions in the world. Its linkages with the global economy extend beyond direct trade connections to include financial flows, tourism, remittances and commodities (Bhaskaran 2008). On an average, most of the countries in Southeast Asia are developing but the strong economic growth, rapid structural change, increasing affluence, probable continued strong economic performance in the region, and growing populations (a projected population of over 615 million by the year 2010) are causing a rise in demand for food to a great extent.

Table 2.1: Some features of Southeast Asian economies

Countries	GDP US$ billions	GDP US$ per capita	% GDP growth 2007	Foreign investment as % of GDP	UN human development index rank	Population below poverty line
Indonesia	1,054	4,130	6.2	23.6	107	17.8% (2006)
Thailand	645	9,331	5	27.4	78	10% (2004 est.)
Philippines	509	3,300	6.9	14.4	90	40% (2001)
Malaysia	342	11,674	6	20.2	63	3.6% (2007)
Viet Nam	318	3,384	8.5	33	105	19.5% (2004)
Singapore	163	32,749	7.5	25.3	25	-
Burma	140	1,900	3.3	12.2	132	-
Cambodia	54	3,041	7.1	20.3	131	40% (2004 est.)
Laos	15	2,329	7	-	130	30.7% (2005)
Brunei	10	32,749	0.5	-	30	-

Source: CSIS 2008; CIA 2006

The poverty levels in most of the newer member countries are still considerably high and a high percentage of population in ASEAN member countries (45 percent) have incomes of less than US$ 2 per day. It is indeed a concern for Southeast Asia that human activities have intensified, in search for additional agricultural production to meet added required food demand. As a result, the patterns of land use have been moving towards an unsustainable direction, causing destruction of natural resources, including agricultural biodiversity (ASEAN 2002).

The half a billion people in ASEAN depend primarily on the region's natural resource endowments for their livelihood. In many ASEAN countries, land resources and terrestrial ecosystems are under increasing stress due to a growing population and the extension of agricultural land into forest and other ecologically sensitive areas. External factors such as the greater incidence of poverty due to the economic crisis, low market prices for commodities, and unfavorable terms of trade have led to over-exploitation of these resources. The deforestation rate in ASEAN for 1990-2000 was estimated at 1.04 percent compared to the world average of 0.23 percent (ASEAN 2002).

And, while these domestic constraints are forcing the Southeast Asian countries to face a number of policy and institutional challenges in harnessing the potential of sustainable agricultural development and use of biodiversity, the recent pressures generated by the Triple "F" Crises — Food[22], Financial[23] and Fuel[24] — as well as the challenges being posed by international trade, biotechnology, IPRs, and climate change have necessitated these countries to seriously consider over how those developments have been directly as well as indirectly affecting the traditional agricultural patterns and the sustainable use and management of PGRFA, and what policy measures they need to adopt to address their negative impacts as well as to protect the rights of local, indigenous and farming communities.

2.2 Agriculture systems and agricultural biodiversity

The countries in Southeast Asia lie between 90° and 150° longitude and 27°N and 12°S latitude and show a great deal of similarity from the floral, agricultural and forestry points of view (FAO 1995). ASEAN's environment and natural resource endowments are unique and diverse. Forest cover in ASEAN is over 48 percent, compared to the world average of below 30 percent. Three (Indonesia, Malaysia and the Philippines) of the 17 mega-biodiversity countries are in ASEAN. The aquatic ecosystems and the marine environment in ASEAN are highly productive and species rich. In 1998, it contributed 14 percent of the world's marine fish production, and contained 35 percent of the world's mangrove forests, and 30 percent of the world's coral reefs (ASEAN 2002).

Like in developing countries, agriculture is far more than just a supplier of food for Southeast Asian countries. Agriculture developed in Southeast Asia as early as 9,000 years ago (Marten 1986). A majority of farmers in Southeast Asia depend on agricultural biodiversity and farming for their livelihood, although recent developments in the industrial and service sectors in countries such as Malaysia have led to the decline in the share of agriculture in their economies. The expression, *"In water we have fish and in the field we have rice,"* is quite common among Southeast Asian people, illustrating a close

[22] FAO predicts that the pressure on food prices will remain in the long term, mainly due to continuing economic and population growth in developing countries, the negative impact of climate change on food production in many countries, and the growing demand for biofuels across many countries (www.fao.org).

[23] According to Bhaskaran (2008), Southeast Asia is bound to be hurt materially by the global economic and financial crisis, for example, in areas of exports, tourism, foreign direct investment and remittances.

[24] While oil prices have of late retreated from their record levels, they have exhibited a rather high volatility in the past few years and there is no certainty that the prices will not rise in the near future.

relationship among people's livelihood, agricultural biodiversity and natural resources in the region (Marten 1986).

An overwhelmingly large number of plant species in Southeast Asia, estimated between 5,000 and 10,000 are useful to humankind. The Plant Resources of Southeast Asia Project lists a total of 6,186 species from the sub-region with reported economic use. Many of these species were reported to have more than one use. The list includes both endemic and introduced plant species, but majority of the species are endemic to the region (FAO 1995).

The types of farming systems predominating in the countries within the region show many similarities. The principle farming system is based on rice. The other common farming systems are based on the following crops or crop commodities: Maize (Vietnam, Cambodia, Myanmar, Philippines, Thailand); Wheat (Myanmar); Sweet potato (Vietnam); Cassava (Indonesia, Thailand, Vietnam); Soybeans (Cambodia, Thailand, Vietnam); Potatoes (Vietnam); Mung bean (Vietnam); Groundnut (Cambodia, Indonesia, Myanmar, Vietnam); Pepper (Malaysia); Oil seeds (Myanmar); Pulses (Myanmar); Sesame (Cambodia, Myanmar); Sugar cane (Myanmar, Thailand, Philippines); Vegetables (Malaysia, Vietnam); Fruit crops (Cambodia, Philippines, Thailand, Vietnam); Oil palm (Indonesia, Malaysia); Cocoa (Indonesia, Malaysia); Coconuts (Indonesia, Malaysia, Philippines, Thailand); Rubber (Cambodia, Indonesia, Malaysia, Thailand, Vietnam); Cashew (Vietnam); Coffee (Indonesia, Vietnam); Tea (Indonesia, Vietnam); Cotton (Cambodia, Myanmar); Jute (Cambodia, Myanmar); and Tobacco (Cambodia). These crops provide not only for home consumption and cash, but also for social and cultural needs within the family and community (FAO 1995).

Southeast Asian countries are facing severe problems in the agricultural sector; one of the major problems is the loss of biodiversity, including agricultural. The major threats to the region’s biological diversity are habitat loss, over-harvesting, pollution, introduction of alien species, desertification and climate change. The underlying causes of such threats are related to population growth, demographics, trade pressures, political instability, perverse incentives, economic performance, poverty, inadequate law enforcement, poor protection standards and lack of awareness (ASEAN 2002). Of late, aggressive pursuits of agricultural trade activities involving large-scale deforestation as well as farm intensification and concentration have encouraged mono-cropping practices with severe implications for the conservation of traditional agriculture resources and knowledge.

In particular, bias policies against traditional agriculture systems and haphazard policies for the modernization of agriculture are also considered the major factors behind the loss of landraces[25] and marginalization of local farmers, mostly in rural areas. For instance, in the case of Malaysia, the mandate by the government that would require paddy growers to use certified seeds produced by designated seed producers (primarily hybrid paddy seeds) by 2009 is being seen as having implications for the conservation of traditional rice varieties (FAMA 2006). In fact, many plant varieties of the region are in a state of rapid depletion, and the use of modern varieties is being promoted in many countries without any proper mechanisms to conserve the local landraces. For example, according to FAO estimates, in Malaysia, the Philippines and Thailand, local varieties of rice, maize and fruit are being replaced with improved varieties (www.planttreaty.org).

Moreover, the predominant informal seed use and exchange among farmers, mostly among rural farmers in many parts of Southeast Asia, is being threatened due to lack of policy and institutional mechanisms that support and strengthen traditional and informal seed systems. If the region fails to undertake effective measures to address the loss of agricultural biodiversity, it will not only make Southeast Asian farmers more vulnerable but will also worsen the situation of regional food security. For the region that has a major stake in agriculture sector, such loss of agricultural biodiversity is also a major concern from the viewpoint of poverty reduction, rural development and ecological balance. Southeast Asian countries should, therefore, pay increased attention towards implementing the measures that promote the conservation of agricultural biodiversity and its sustainable use.

Given the ratification of international instruments like CBD and ITPGRFA by most Southeast Asian countries and their membership in the WTO, with obligations and commitments to protect plant varieties through an IPR regime, it is important for the region to consider some crucial legal and institutional measures that contribute to protect farmers' rights to livelihood and regional food security, among other development objectives. An important aspect in this regard is the ability of countries to devise *sui generis* options for the protection of farmers' rights that could be jeopardized due to extension of IPRs in agriculture.

[25] Landrace is known as a crop cultivar or animal breed that evolved with and has been genetically improved by traditional agriculturalists, but has not been influenced by modern breeding practices.

Southeast Asia Regional Initiatives for Community Empowerment (SEARICE), a regional non-governmental development organization based in the Philippines, has developed an "ASEAN Framework Agreement on Access to Biological and Genetic Resources" in 2000. Though this is not a model for *sui generis* plant variety protection law as such, this work can be referred to have a kind of message that is important: It is not in the interest of Southeast Asian countries to ignore the implications of the ABS and PVP regimes over the rights of local, indigenous and farming communities, and governments of the region must take bold initiatives to safeguard their rights with measures that contribute to advance people's livelihood and food security, as well as biodiversity conservation and its sustainable use.

In particular, it is important to note that the SEARICE's ASEAN framework strongly recognizes that access to biological and genetic resources are currently unregulated and there is an urgent need for the governments of the region to protect ASEAN interests in these biological and genetic resources from biopiracy. The framework also demands Southeast Asian governments to acknowledge the need to ensure the uniformity and consistency of access regulations in the ASEAN region by setting minimum requirements for national implementation and maximize opportunities for the conservation and sustainable use of biological and genetic resources.

In fact, the nature, scope and objectives of the plant variety protection laws, some similar principles or assumptions can be derived for *sui generis* plant variety protection regimes, provided such principles and assumptions do not violate the fundamental interests of both farmers and breeders, or say, are not ambitious but have development objectives suited to the interests of the region.

Thus, it is desirable for the region to devise such rules and regulations that maintain a balance between the interests of breeders as well as farmers. And, in this process, it is crucial that Southeast Asian governments assess the implications of the corporate-led plant variety protection rules and make their best efforts to implement farmer-centred plant variety protections laws.

SECTION THREE

Way Forward For The Protection Of Farmers' Rights In Southeast Asian Countries

3.1 Assessment of the corporate-led plant variety protection regime

The history of the corporate seed business that uses modern biotechnology and applies IPRs such as patents and plant breeders' rights over seeds is not new. While Crick and Watson's discovery of DNA's double helix structure in the 1950s led to the application of techniques such as genetic modification, enabling breeders to develop genetically modified new seeds, the extension of IPR rules in agriculture strengthened the corporate sector to spread monopolies over the use, reuse and sale of such seeds.

However, corporate monopolies over seeds have not been deliberately brought into discussions even when the world, especially countries in Asia and Africa, are facing one of the toughest times due to the Global Food Crisis. Understandably, the organized interests of the global seed corporations have been becoming stronger than the "political will and capacity" of the global agencies, including the FAO, and not least developing-country governments. There are many technology-rich powerful countries that want to defend such vested interests at any cost and by any means, be it through the global institutionalization of the agencies they fund or the enforcement of IPR rules through the WTO, UPOV, and any other means.

Such companies and their proponents argue that the corporate seed system largely contributes to the attainment of the millennium goal of halving the number of hungry populations by ensuring wider supply and availability of quality seeds that guarantee higher yields. However, four critical aspects that are deliberately ignored by such companies and proponents and also not brought into considerations by the global agencies committed to address food insecurity in developing countries are:

First, with the rapid and unjust application of modern biotechnology and IPRs in the agricultural sector, multinational seed corporations are securing unprecedented power vis-à-vis farmers and are transforming farmers from seed owners to mere licensees and consumers of IPR-protected new seeds. In 2006, six companies — Monsanto, DuPont, Syngenta, Dow, Aventis and Grupo Pulsar — owned 74 percent of the existing patents on the major food

crops, including rice, wheat, maize and sorghum. This is not merely a source of disincentives for farmers to conserve genetic resources, but is also in opposition to "seed sovereignty", the critical realisation of the need to guarantee farmers' rights over seeds.

Second, even if IPR-protected seeds are useful for farmers, they are expensive and thus severely restrict farmers to access such seeds. This is due to monopolistic pricing mechanisms that are enforced on the pretext of the need to make up for the investments that companies make for undertaking research-and-development activities and obtaining IPRs such as patents and plant breeders' rights.

Third, in cases when IPR-protected genetically modified seeds are used, strict corporate monopolies restrict farmers to use, reuse and sell them. This basically means that farmers are forced to pay exorbitant amounts for new seeds for every season of crops or harvests, in direct contravention of the traditional farming system in Southeast Asian countries.

Fourth, amidst the absence of adequate environment-impact assessments and conservation initiatives, the corporate-led seed system has promoted such industrial farming that is based on transgenic seeds and mono-cropping. But there are now evidences even across many developing countries such as China, India and the Philippines that such farming has led to the loss of traditional varieties of seeds with severe implications in the context of biodiversity conservation, climate change and food security.

All these indicate that there is a dire need to make seed systems favourable to farmers, for which farmer-centered plant variety protection rules are important.

3.2 Pursuit of the farmer-centered plant variety protection regime

A fundamental thrust of the *sui generis* plant variety protection system should be to ensure that plant breeders' rights do not restrict farmers' rights to livelihood and contribute to achieve food security and overall development objectives, especially in developing countries. Given the nature of the Southeast Asian agricultural economy, care should, thus, be given to develop a system that enables farmers to benefit from the IPR regime rather than to be more vulnerable and marginalized in the globalized era. This can be done, for example, through the implementation of such legal measures that establish farmers' rights in relation to traditional varieties and related TK, as well as new varieties of farmers and breeders.

Singapore is the only country in the Southeast Asia region to have become a member of UPOV out of its choice. It is because its national interest does not lie in protecting farmers' rights over plant varieties, or say, introducing any balancing approach for the realization of both farmers' and breeders' rights. In fact, this is also evident from the positions it has taken during the review negotiations of TRIPS Article 27.3 (b) at the Council for TRIPS of the WTO. Singapore has, more or less, supported a hardliner group led by the US, Australia and Japan, and together has been advocating that there is no need to lower down the protection demanded by the TRIPS Agreement in the present form (WTO 2006). This group of countries has also been arguing that TRIPS Article 27.3 (b) does not need amendments, and access and benefit sharing is a matter of bilateral contractual arrangements among the two countries concerned and should not be dealt at the WTO level.

Unlike Singapore, most of other Southeast Asian countries want to protect farmers' rights due to their stakes in the agricultural sector. However, the ways through which such Southeast Asian countries already enacted plant variety protection laws or are in the process of developing such laws and the ways through which they were forced to become a member of UPOV (for example Viet Nam) tells different stories.

First, farmers' rights provisions in the enacted plant variety protection laws are weak and protection provided to breeders for the use, reproduction and sale of their plant varieties are very strict. Second, even countries that are not required to implement TRIPS until 2013 have developed plant variety protection laws based on UPOV 1991 or are making efforts to implement the UPOV-tuned laws in the near future.

For example, Indonesia, the Philippines and Thailand enacted plant variety protection laws between 1999 and 2002. Thailand's Plant Varieties Protection Act, B.E. 2542 (1999) came into force on 26 November 1999. Indonesia's Plant Variety Protection Act came into effect from 20 December 2000. The Philippine Plant Variety Protection Act of 2002 (Republic Act No. 9168) was signed into law on 7 June 2002. Though these three countries were not the members of UPOV, they have developed their plant variety protection laws based on UPOV provisions. It is not merely because these countries were bilaterally pressured by the developed countries, such as the US, to devise laws based on UPOV, but also because aid was given to these countries by UPOV or by its members, such as the US, Australia and Japan, to develop UPOV-tuned plant variety protection laws (see Kenniah 2004).

Similarly, Vietnam has also enforced the Vietnamese Ordinance on Plant Varieties 2004, based on UPOV 1991. This, in fact, does not seem to be a domestic choice but is a clear case of the imposition of a "TRIPS-plus"[26] condition during its accession negotiations for WTO membership. This also happened with an LDC of the region — Cambodia — as it has been pressured during WTO accession negotiations to make a commitment to implement a plant variety protection law based on UPOV 1991 (see www.wto.org).

In this regard, two other LDCs of the region — Lao PDR and Myanmar — need to realize that it is not binding for them to implement such laws until 1 July 2013. This is because a decision made at the WTO level on 29 November 2005 has exempted LDC members from implementing TRIPS until 1 July 2013 (www.wto.org). Hence, if these countries are developing their plant variety protection regimes so as to extend plant breeders' rights for the protection of plant varieties out of external pressures, they need to find ways to avoid such pressures, as this is legally possible at least until 1 July 2013 (A list of selected plant variety protection laws in Southeast Asian countries and their features is provided in Appendix A).

In pursuit of the farmer-centered plant variety protection laws, two issues need special attention. First, countries which have enacted laws need to explore possibilities for revisions and amendments into the laws; and second, countries that are under consideration to devise such laws need to be careful of the timelines for the implementation of such laws as well as the measures and flexibilities that can be used to safeguard farmers' rights. In this process, it needs to be considered that while protection of farmers' rights concerned with traditional varieties and related knowledge (including wild varieties) can be ensured under the national ABS laws (as part of commitment to implement CBD), protection of their rights over farmer- as well as breeder-developed new varieties can be dealt under the plant variety protection laws (as part of TRIPS obligations).

Likewise, the SEA countries can also capitalize on ITPGRFA to deal with a broad framework of farmers' rights issues over plant genetic resources and associated TK. However, in this process, careful consideration is critical in order to avoid contradictions that may occur due to the differences in the nature, scope and core objectives of these international instruments, in

[26] TRIPS-plus refers to the implementation of more extensive levels and standards of IPR protection beyond that required under the TRIPS Agreement, e.g., extending certain periods of protection beyond the requirements of the TRIPS Agreement.

particular those of CBD and ITPGRFA. For example, while CBD seeks to implement ABS rules for genetic resources on a bilateral basis, ITPGRFA has been designed to implement ABS rules through a multilateral system that deals only with 64 plant genetic resources that have importance for food and agriculture (See Lewis-Lettington 2008).

3.3 Farmers' rights over plant varieties and related knowledge

Southeast Asian farmers have not merely been contributing to farming and agricultural biodiversity conservation as guardians and custodians of plant genetic resources but, as breeders, have also developed several varieties that are crucial for agricultural biodiversity and food security. Thus, the *sui generis* system of plant variety protection should enable farmers to obtain legal ownership over their varieties and knowledge (Box 3.1).

Box 3.1: Options for the registration of farmers' varieties

The operational difficulties have generated a challenge for the legal system to set criteria for and define farmers' varieties. There are also challenges with regard to the registration of such varieties; identification of the authority representing the local communities or indigenous people having varieties; and the operationalization of a legally binding format for PIC. Given that farmers' varieties are developed over a longer period of time and in highly complex systems of human-plant-environment interactions, it would be difficult to use distinct, uniform and stable (DUS) criteria to define such varieties. However, the criteria to define farmers' or traditional varieties can include the following elements that have been proposed under the revised draft provisions for the protection of TK published by the WIPO in 2006:

- developed, conserved and used in a traditional and intergenerational context;
- distinctively associated with a local or indigenous community which conserves and uses the varieties between generations;
- integral to the cultural identity of an indigenous or local community which is recognized as holding the varieties through a farm of custodianship, guardianship, stewardship, collective ownership or cultural responsibility; and
- have distinctive functional traits such as taste, aroma, cooking quality, colour and medicinal value which are associated with the culture of the local communities.

Source: Lim 2008; WIPO 2006.

This requires the enforcement of such legal measures that enable farmers to register farmers' varieties and related knowledge, and provide farmers with ownership rights with regard to obtaining benefits from the ABS rules devised as part of CBD commitments. In this process, importantly, the registration of

such varieties and knowledge should not be interpreted as to have implications for the saving, exchanging, re-using and sale of seeds by other farmers, as this will prevent other farmers from benefiting from the use of quality seeds.

The ownership right obtained through registrations should, in fact, be interpreted to enable farmers to benefit from the ABS regime and obtain protection from misuses such as biopiracy and misappropriation of knowledge. Farmers should not, however, be required to pay any fee or subject to cumbersome bureaucratic processes for such registration and ownership.

Besides, at the minimum, while establishing such ownership rights, Southeast Asian governments should implement the following farmers' rights:

- Right to grant PIC over the use of their varieties and knowledge. In order to enable farmers to realize their right to grant PIC, governments need to make effective institutional arrangements, for example, the legal recognition as well as the registration and mobilization of farmers' groups are vital to facilitate this process. The nature of such interventions, however, depends on political and administrative structures of the government concerned.

- Right to provide or regulate access to their varieties and knowledge if PIC is not taken from them. In this case also, governments need to make effective institutional arrangements so that the spirit of imposing legal restrictions for the access to resources and related knowledge is not misinterpreted but be capitalized to safeguard farmers' interests with adequate institutional efforts.

- Right to know about the primary, secondary as well as any other use of their varieties and knowledge such as through the PIC process and the requirement for the IPR applicants to disclose the source of origin of resources and associated knowledge as well as provide the evidence of ABS and PIC agreements (also known as "disclosure requirement"). This aspect is critically important to encourage accessing Parties to fulfill the obligations of ABS and PIC. It will also be instrumental for governments to develop their positions on disclosure requirements for international negotiations, including WTO negotiations.

3.4 Farmers' rights over breeders' varieties

If breeders' rights are not balanced with farmers' rights, there is a greater possibility of seed insecurity at the national and regional level, with serious implications for food security and farmers' livelihood. Hence, plant breeders' rights should not restrict farmers from saving, exchanging, reusing and selling the farm-saved seeds for livelihood purposes, as these are their traditional rights and have been recognized in several national and international forums as well as documents and international and national laws, including ITPGRFA.

In addition, it is important to check whether breeders have developed new varieties based on farmer-developed varieties and related knowledge or other varieties and related TK (such as traditional and wild varieties). It is here important to note that ABS laws (implemented as part of CBD commitments) can deal with the issue of the use of traditional and wild varieties in relation to access as well as benefit sharing and PIC issues. However, in the case of the exploitation of farmer-developed varieties, plant variety protection laws (implemented as part of TRIPS commitments) need to address the issue of equity and fairness in the ABS process. Thus, in the plant variety protection laws, at the minimum, legal and institutional measures need to be enforced for the implementation of the following farmers' rights:

- Right to legally challenge breeders' rights and claim compensation if evidence is made that breeders did not comply with national laws on plant variety protection and ABS or made a case of biopiracy while commercially exploiting the farmers' varieties and knowledge, or obtaining breeders' rights over varieties that have been derived from farmers' varieties;

- Right to a fair and equitable share in the benefits arising out of the use of farmers' varieties and knowledge by breeders for development of other varieties;

- Right to compensation in cases of crop failure or any damage caused due to misinformation about the quality of breeders' seeds, or supply of bad seeds; and

- Right to access breeders' seeds if breeders indulge in anti-competitive practices such as artificial shortages, or irregular supply, or unreasonable price rise of seeds (Even if breeders fail to supply seeds

for reasons of financial and technical capacities or any other genuine causes, the right of farmers to access new seeds should be protected with adequate provisions such as "compulsory licensing").

3.5 Farmers' right to participate in decision making

Stakeholders' participation in decision making is crucial for safeguarding their concerns and rights in any process of law making and its implementation. ITPGRFA has mentioned adequately about the right of farmers to participate in decision making on matters related to plant genetic resources at the national level.

In Southeast Asian countries, it is, however, still not an institutional practice, particularly with regards to the composition and conduct of administrative and legal bodies. For example, policies and laws are often drafted, enacted and implemented without adequate consultations and participation of relevant stakeholders in decision-making processes.

Thus, there is a need for Southeast Asian countries to put in place a mechanism for farmers' participation in decision-making processes and bodies of the plant variety protection, and related policies and laws. Identification and strengthening or formation of farmers' groups (such as genetic resources custodians groups at the village and central levels) for their "active and effective" representation and participation in policy-making processes and bodies could help in this regard.

This, however, also requires the government, and, to a great extent, other stakeholders such as non-governmental organizations, community-based organizations and the media to undertake strategic and coordinated initiatives, mostly in rural areas, to empower farmers to raise concerns regarding the protection of their rights.

3.6 Institutional arrangements

The implementation of the plant variety protection law, i.e., the rights of breeders and farmers, and other provisions — such as those relating to the registration of varieties and knowledge, and the management of biodiversity or gene fund — requires effective institutional arrangements at the government, farmers' as well as other stakeholders' levels. Importantly, mechanisms also need to be put in place to enable the centre- and local-level government institutions to identify, recognize and empower local farmers and

their groups to work with them in the area of agricultural biodiversity conservation and development, including plant breeding.

Southeast Asian governments should also identify the role of and provide space for non-governmental and community-based organizations in the entire process of the implementation of the plant variety protection and related policies and laws. This is important not least because such organizations have been working with and for communities in helping them conserve and develop agricultural biodiversity through programmes such as community-based biodiversity management programmes. Acknowledging the constructive development works of NGOs, the ASEAN Secretariat has formally recognized SEARICE[27] as a regional organization.

This might mean that governments have started to seriously work for the recognition of relevant stakeholders' role in government programmes as well as decision-making processes. Indeed, the experience of such organizations in ensuring farmers' participation in decision making as well as protecting farmers' rights to plant varieties and associated knowledge can be used through an institutional process built within national policies and laws. Strengthening of this commitment by ASEAN governments will definitely be a promising step towards realizing farmers' rights in the region.

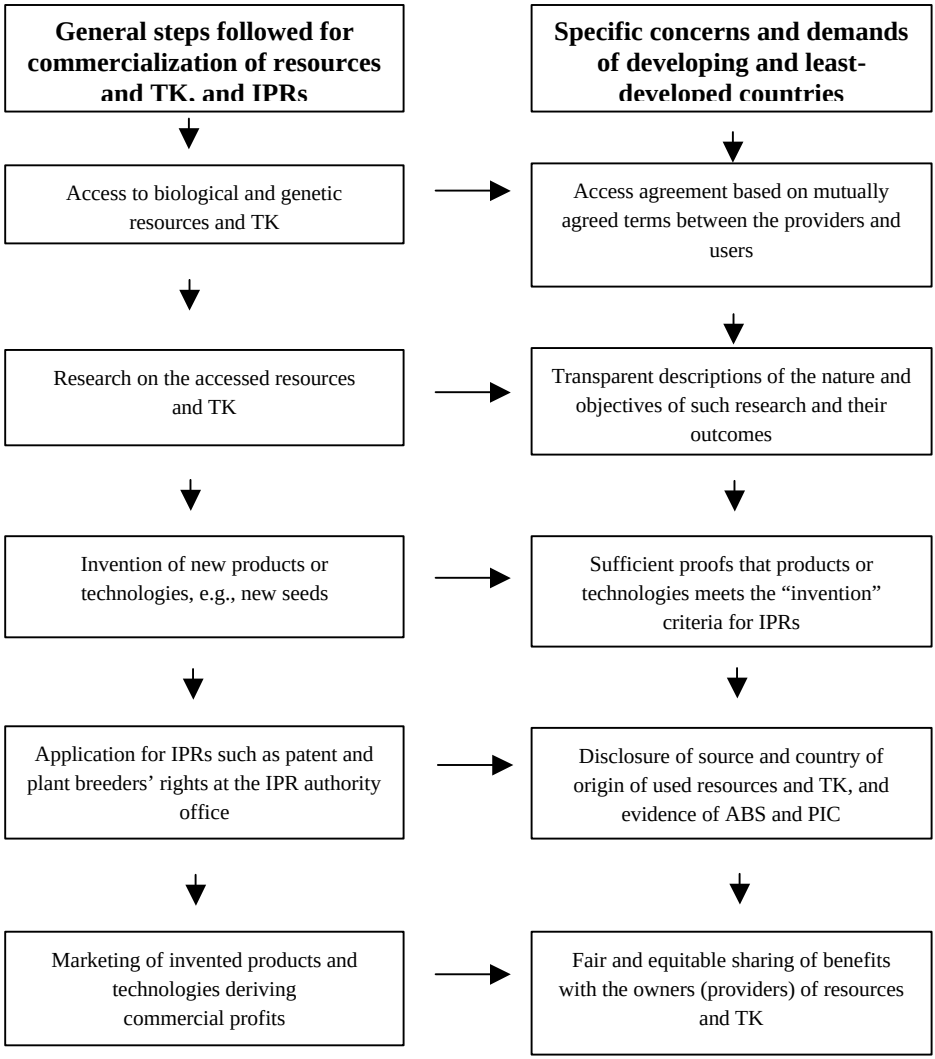
Besides, the establishment, strengthening and effective operationalization of community seed banks; and implementation of farmers' rights-friendly participatory plant breeding projects should be made an integral component of agricultural biodiversity policy. In fact, these initiatives will be critically important in the IPR regime, including ABS, such as for capacity building and awareness raising, management of biodiversity or gene fund, plant breeding, as well as negotiations for fair and equitable ABS contracts and agreements.

3.7 Position for international negotiations on IPR

During negotiations for the review of Article 27.3 (b) at the Council for TRIPS, developing countries such as Brazil, India and a number of African countries have been increasingly calling for the harmonization between TRIPS and CBD. These countries have been proposing the entire WTO Members to agree to incorporate some important measures within TRIPS (Chart 3.1) so that TRIPS does not conflict with CBD.

[27] see www.searice.org.ph

Chart 3.1: Measures necessary for the harmonization between TRIPS and CBD



In addition, through the amendment of TRIPS Article 27.3 (b), they have also been calling for the incorporation of some specific provisions for the protection of farmers' rights in TRIPS (Box 3.2).

Box 3.2: Incorporation of farmers' rights provisions in TRIPS

A number of developing countries view that a footnote should be inserted after the sentence on plant variety protection in Article 27.3(b), stating that any *sui generis* law for plant variety protection can provide for: the protection of innovations of indigenous and local farming communities in developing countries, consistent with CBD and ITPGRFA; the continuation of traditional farming practices including the right to save and exchange seeds, and sell farmers' harvest; and the prevention of anti-competitive rights or practices which threaten the food sovereignty of developing countries, as is permitted by Article 31 of the TRIPS Agreement.

A group of another developing countries also view that provisions permitting specific exceptions to plant variety rights should be included in TRIPS covering, as a minimum, farmers' rights, in particular to sow and share harvested seed of a protected variety, communities' rights and compulsory licensing where plant varieties are not available on reasonable commercial terms, in times of national emergency and in cases of public non-commercial use.

Source: WTO 2006

Such concerns and demands of developing and least-developed countries with regard to the amendment of TRIPS Article 27.3 (b) need a thorough review by Southeast Asian governments as well as concerned stakeholders, including farmers' groups. The governments should urgently initiate consultations at different levels to develop the region's common positions on these crucial issues. In particular, the requirement for the IPR applicants to disclose the source of origin of biological resources and associated TK, as well as provide the evidence of ABS and PIC agreements enables a country to effectively regulate unauthorized access to agricultural biodiversity and associated knowledge, thus preventing the threat of biopiracy and misappropriation of local knowledge. Notably, efforts in this connection at the global level have already generated a significant amount of support from more than 80 countries. Hence, Southeast Asian countries, after consultations with concerned stakeholders, should also support such proposal and negotiate accordingly in international forums. Basic provisions or prerequisites for Farmer's Rights pertaining to the management of plant genetic resources for food and agriculture should be considered (see SEACON 2008b).

Such preparations will also help the governments of Southeast Asian countries to negotiate accordingly in forums such as WIPO, CBD and ITPGRFA. In particular, these countries should follow up with the developments taking place within WIPO for a Substantive Patent Law Treaty, and develop negotiating positions so that this does not create severe implications for ABS and IPR laws that these countries should be implementing for the protection of farmers' rights.

References

ActionAid, Consumers International and Gene Campaign. 2002. *Why we oppose UPOV and why it is urgent that developing countries enact their own plant variety protection laws*. Media Briefing, 17. October 2002, Geneva.

Adhikari, Kamalesh. 2006. *Access, Benefit Sharing and Prior Informed Consent under CBD, ITPGRFA and TRIPS: Legal Mechanisms to Protect Farmers' Rights in South Asia*. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

Adhikari, Kamalesh. 2008. *Intellectual Property Rights in Agriculture: Legal Mechanisms to Protect Farmers' Rights in Nepal.* Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

Adhikari, Ratnakar and Kamalesh Adhikari. 2003. *UPOV: Faulty Agreement and Coercive Practices*. Policy Brief. No. 5. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

Adhikari, Ratnakar and Kamalesh Adhikari. 2007. *Review of Article 27.3 (b) of TRIPS Agreement: Policy Issues for South Asia*. Policy Brief. No. 14. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

Andersen, Regine. 2005. *The History of Farmers' Rights.* Background Study, Oslo: The Fridtjof Nansen Institute.

Andersen, Regine. 2007. *Protecting Farmers' Rights in the Global IPR Regime.* Policy Brief, No. 15, Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

ASEAN. 2002. ASEAN Report to the World Summit on Sustainable Development. Held from 26 August-4 September in Johannesburg, South Africa. Jakarta: ASEAN Secretariat. ISBN: 979 – 8080 – 91 – 2

Bhaskaran, Manu. 2008. *Challenging Times for Southeast Asian Economies*. Cover Feature. Global Asia Vol.3, No.4.

CBD Secretariat and Botanic Gardens Conservation International. 2008. *Global Strategy for Plant Conservation.* Montreal and Surrey: The Secretariat of the Convention on Biological Diversity and Botanic Gardens Conservation International.

CBD Secretariat. 2008a. *Biodivesity and Agriculture: Safeguarding Biodiversity and Securing Food for the World.* Montreal: The Secretariat of the Convention on Biological Diversity.

CBD Secretariat. 2008b. *Year in Review 2008.* Progress Report, Montreal: The Secretariat of the Convention on Biological Diversity.

CIA World Factbook 2006, Retrieved from http: / / www.theodora.com / wfb2006

Correa, Carlos M. 2000. *Options for the Implementation of Farmers' Rights at the National Level.* Working Paper. Geneva: South Centre.

CSIS. 2008. International Security Bulletin. April Issue. Washington D.C.: Center for Strategic and International Studies, www.csis.org / isp

Dhar, Bishwajit. 2002. *Sui Generis Systems for Plant Variety Protection: Options under TRIPS*, A Discussion Paper, Quaker United Nations Office, April 2002, Geneva.

Dutfield, Graham. 2004. "What is Biopiracy?". Paper presented at the International Expert Workshop on Access to Genetic Resources and Benefit Sharing. Organised by Comision Nacional para el Uso y Conocimiento de la Biodiversidad (conabio). 24-27 October. Cuernavaca.

FAMA. 2006. "Farmers take to 'pulling strings' for productivity". Kuala Lumpur: Federal Agricultural Marketing Authority. http: / / www.fama.gov.my / index.php?ch=emedia_ eng&pg=nst&ac=1695&lang=eng

FAO. 1995. *Conservation and Sustainable Use of Plant Genetic Resources in Southeast Asia.* Bangkok: The Food and Agriculture Organization of the United Nations.

FAO. 2002. *International Treaty on Plant Genetic Resources for Food and Agriculture*. Adopted by the Thirty-First Session of the Conference of the Food and Agriculture Organisation of the United Nations on 3 November 2001. Rome: The Food and Agriculture Organization of the United Nations.

FAO. 2008. *The State of Food Insecurity in the World 2008.* Rome: Food and Agriculture Organization of the United Nations.

Jairaj, Bharath. 2007. *Cases of Access and Benefit Sharing: Lessons for South Asian Governments.* Research Brief, No.1. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

Kenniah, Rajeswari. 2003. *TRIPS, Farmers' Rights and Food Security: The Issues at Stake*, Consumers International, Asia Pacific Office, Kuala Lumpur.

Kenniah, Rajeswari. 2004. *Plant Variety Protection in Indonesia, Phillipines and Thailand.* Kuala Lumpur: Consumers International, Asia Pacific Office.

Kumar, Shashi. 2008. "Matrix on PVP Legislation in ASEAN Countries". Presented at the Southeast Asian Regional Consultative Workshop on Farmers' Rights. 30 July, 2008 in Shah Alam, Malaysia. Organized by Southeast Asian Council for Food Security and Fair Trade (SEACON).

Kuyek, Devlin. 2002. *Intellectual Property Rights in African Agriculture: Implications for Small Farmers.* Barcelona: GRAIN.

Lewis-Lettington, Robert J. 2008. *Access and Benefit Sharing Laws in South Asia: Enforcement, Implementation and Monitoring Challenges.* Research Brief, No.2. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

Marten, Gerald G. 1986. *Traditional Agriculture in Southeast Asia: A Human Ecology Perspective*. Colorado: Westview Press.

Posey, Darrel A. and Graham Dutfield. 1996. *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*. Ottawa: International Development Research Centre (IDRC).

Ravi, Bala S. 2005. *Access and Benefit Sharing: Policy Concerns for South Asian Countries.* Policy Brief, No.12. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

Sahai, Suman. 2003. "CoFaB: A Developing Country Alternative to UPOV" in Ratnakar Adhikari and Kamalesh Adhikari. eds. *Farmers' Rights to Livelihood in the Hindu-Kush Himalayas.* Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

SEACON. 2008a. *Farmers' Rights in Southeast Asia.* Briefing Paper July 2008. Malaysia: Southeast Asian Council for Food Security and Fair Trade (SEACON).

SEACON. 2008b. *Prerequisites for Farmers' Rights: Terminology and Applications.* Malaysia: Southeast Asian Council for Food Security and Fair Trade (SEACON).

Siang, Lim Eng. 2008. *Implementing the ITPGRFA.* Policy Brief. No. 16. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

UNDP. 2004. *Southeast Asia Human Development Report.* Phillipines: United Nations Development Programme.

UNEP / CBD. 2003. *Convention on Biological Diversity: Text and Annexes*. Montreal: United Nations Environment Programme / Secretariat of the Convention on Biological Diversity.

WIPO. 2006. *Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions / Folklore*. Information Resources. Geneva: World Intellectual Property Organization.

World Bank. 2006. *Intellectual Property Rights: Designing Regimes to Support Plant Breeding in Developing Countries.* Washington, D.C.

WTO. 2002. *The Legal Texts: The Results of the Uruguay Round of Multilateral Trade Negotiations.* Geneva: The World Trade Organisation.

WTO. 2006. Review of the Provisions of Article 27.3 (b): Summary of Issues Raised and Points Made. *Note by the WTO Secretariat.* IP / C / W / 369 / Rev.1. Council for Trade-Related Aspects of Intellectual Property Rights. 9 March. Geneva: The World Trade Organisation.

Websites:

- www.asean.org
- www.cbd.int
- www.ciel.org
- www.fao.org
- www.grain.org
- www.planttreaty.org
- www.searice.org.ph
- www.traditionalknowledge.com
- www.upov.int
- www.wipo.int
- www.wto.org

APPENDIX A

Comparative Matrix On Plant Variety Protection Laws Existing In Selected ASEAN Countries

Country	Provisions / Legislation
Thailand	Plant Varieties Protection Act 1999
Indonesia	Plant Variety Protection 2000
Vietnam	Ordinance On Plant Varieties 2004
Philippines	Philippine Plant Variety Protection Act 2002
Malaysia	Protection of New plant Varieties Act 2004

Country	Objectives
Thailand	Protection for plant varieties are stated under the given provision
Indonesia	• Recognizes agriculture plays an important role in the country's development. • To provide plant protection in accordance with international convention.
Vietnam	• Recognizes the need for management and conservation of plant varieties. • Protection of these plant varieties through proper management and production.
Philippines	• Focuses solely on breeders' rights • Encouragement of private sectors in development of plant varieties for the purposes of investment from the private sectors. • Acknowledgement of the use of research and development for the interest of the country.
Malaysia	• Recognition for the contribution of farmers and the local communities alike. • To encourage investment. • To promote development of the breeding of new plant varieties.

Country	Definition of plant variety
Thailand	• Plant variety which share identical characteristics (including genetically). • Contains features such as; uniformity, stable and distinct from other of similar species. • Does not include other micro organisms.
Indonesia	• Plant variety consists of a group of plants / crops from one type or species which is identified by its shape, growth, leaves, flowers, fruits or seeds. • Its genetic characteristics are different from species.
Vietnam	• Plant varieties mean a group of plants which are uniform and have some economic value. • Recognizable by the characteristics of its genotype. • Distinguishable from other plant groupings through the expression of at least one of the said characteristics through propagation.
Philippines	• Plant varieties consist of a grouping within a single botanical taxon. • Considering its suitability for the purpose to propagate remains unchanged.
Malaysia	• Means new varieties being developed • Cultivated varieties • Living organism.

Country	Definition of breeders
Thailand	Connotes the person / persons who have developed the plant variety.
Indonesia	Those who carry out breeding activities.
Vietnam	Not defined.
Philippines	Those who bred or, develop the plant variety.
Malaysia	Person who developed, bred, discovered or genetically improved by means of genetic modification.

Country	Criteria for Granting Protection to a Plant Variety
Thailand	*Plant Variety* • Uniform, distinct and stable. *New Plant Variety* • Having plant variety the propagating material of which has not been exploited • Distinct from other plant varieties.
Indonesia	• New, distinct, uniform, stable and given a denomination.

Vietnam	• Commercially novel • Distinct, stable and uniform
Philippines	• Uniform • Distinct • New • Stable
Malaysia	*Varieties* • New, distinct, stable and uniform *Through genetic modification* • New, useful and non-obvious *Community / farmers' development methods* • Novel and characteristics which is easy to identify.

Country	**Breeders' rights over new plant variety**
Thailand	• Exporting / importing • Sell • Produce
Indonesia	• Offering • Selling • Exporting / importing • Advertisement • Production and multiplication of seeds • Preparation for propagation purposes
Vietnam	• Variety production • Propagation • Varity processing • Sale offer • Sale or other forms of exchange • Exporting / importing • Storing purposes for the above activities
Philippines	• Exporting / importing • Selling • Stocking purposes • Production / reproduction • Conditioning for the purpose of propagation
Malaysia	• Exporting / importing • Producing / reproducing • Production / reproduction • Selling • Conditioning for the purpose of propagation • Stocking purposes

Country	Duration / Timeframe of protection
Thailand	• 17 years for plants that generates fruits after the cultivation of its propagating materials within 2 years. • 12 years for plants that generates fruits after the cultivation of its propagating materials of not more than 2 years. • 27 years in respect of the plant which is of tree-based utilization and able to generate fruits in accordance with specific features of the variety after the cultivation of its propagating material within the period of 2 years.
Indonesia	• 20 years for seasonal plants • 25 years for annual plants
Vietnam	• 20 years for timber trees • 25 years for grapes
Philippines	• 20 years for other types of plants • 25 years for trees and vines
Malaysia	• 15 years for new variety • 20 years for genetically modified varieties • 25 years for trees and vines • 10 years for farmer's varieties

Country	Reasons for the revocation / nullity of plant breeder's rights
Thailand	• The right given to those who are not entitled to it • Omission / fraudulent information given by the applicant • Non-conformity of the said plant with the description provided under the Act • Prescribed plant variety has negative impact on the safety of the public, health or adverse impact on the environment.
Indonesia	• Failure to pay the annual fees within 6 months • Characteristics of the protected variety have changed / no longer correspond with the intended nature • Breeder cannot provide / prepare sample seeds for the said variety • The breeder did not supply the seed of the said variety • Breeder on its own accord submits request to have the rights revoked in writing.
Vietnam	• Plant no longer satisfy with requirement of uniformity and stability • Failure / omission to submit documents and propagating materials necessary for the preservation and storage of the said plants • Breeder voluntarily cancels the right

	• Plant variety is not commercially novel, distinct at the time of granting of the right.
Philippines	• Failure to pay the prescribed fees • Uniformity and stability could not be maintained • Omission of providing necessary information, documents for the purposes of verifying the plant variety. • Inaccurate information supplied by the plant breeder • Breeder's rights that have been granted to an individual who is not entitled to it unless otherwise
Malaysia	• Failure to pay the prescribed fees • Omission of providing necessary information, documents for the purposes of verifying the plant variety. • Breeder's rights that have been granted to an individual who is not entitled to it unless otherwise. • Failure to propose in situation where the denomination of the said plant variety is cancelled, another suitable denomination.

Country	**Exceptions to breeders' rights**
Thailand	• Acts committed are non-commercial in nature • Acts committed without the intention to use it as propagating material • Acts done in bona fide • For the purposes of education, study or research for the purposes of breeding or developing plant varieties • Sale / distribution by any means, importation or exportation of, having in possession for the purpose of any of the prescribed conduct, the propagating material of the protected new plant variety which has been distributed by the right holder / with the right holder's consent
Indonesia	• Part of the harvested crop of a protected variety is used for non-commercial purposes • The protected variety is used for research activities, plant breeding and for constituting new variety • The protected variety is used by the government in the framework of the policy for the supply of food and medicines without infringing the economic rights of the plant variety owner
Vietnam	• For the purposes of using the plant variety for hybridization to create new plant varieties or for scientific research • For personal use • Non- commercial purposes • The new plant varieties or propagating materials have been sold on the market by the owners of the new plant variety titles
Philippines	• Acts committed on non-commercial basis

	• Purposes of experiment • Acts done for the purpose of breeding other varieties, except in the case of essentially derived varieties propagating materials by small farmers in their land (a product of their harvest).
Malaysia	• Acts committed on non-commercial basis • Purposes of experiment • For the purposes of breeding other varieties • Exchange of propagating materials by small farmers within the time limit • Propagation by small scale farmers on their own land using the product of the harvest from the protected variety planted on their own land

Country	**Exhaustion of Breeder's Right**
Thailand	Not expressly stated
Indonesia	Not expressly stated
Vietnam	Not expressly stated
Philippines	• Involved the further propagation of the variety in question • Involved the export of the variety, which enables the propagation of the variety into a country that does not protect the variety of the plant genus or species to which the variety belongs except where the exported material is for final consumption purpose
Malaysia	Not expressly stated

Country	**Farmers' rights**
Thailand	Only exemptions for farmers
Indonesia	Not stated
Vietnam	Not expressly stated
Philippines	Only exemptions for farmers
Malaysia	Only exemptions for farmers

Country	**Compulsory licensing**
Thailand	After the expiry of 3 years from the date of registration of the new plant variety, other persons may file an application with the Authority for the grant of the compulsory license if it appears at the time of such application that : • There has been no sale of the propagating material of that new

	plant variety • The sale thereof has been made in the quantity insufficient for the need of the people within the State • The sale thereof has been made at exorbitant prices within the State The Authority has the power to authorise compulsory license upon payment by the applicant of reasonable remuneration to the right holder
Indonesia	After the expiry of 3 years from the date of issuance of plant variety protection rights, may request of for compulsory license whereby it is given when : • The applicant is able to provide convincing proof that he has the capability and capacity to exercise the plant variety protection rights and has exhausted all other means to obtain a license from the plant variety protection rights owner based on reasonable conditions but has failed • The State Court shall conduct a hearing for the compulsory license application and hear the opinion of plant variety protection officers and the relevant plant variety protection owner. The compulsory license is given for a time period that is not longer than a plant variety protection right.
Vietnam	Not expressly stated
Philippines	Any interested parties may file a petition for the compulsory licensing with the Authority after 2 years from the grant of the certificate may : • There is an overseas market for the sale of parts of the variety • The plant variety developed relates to or required in the production of medicine or other prescribed manner (this compulsory license will be in force until the criteria of its issuance been revoked)
Malaysia	• Where the Authority is satisfied that the requirement of the farming community for propagating material of a protected variety has not been met then the Board shall, if need be, license a person / agency to undertake all actions pertaining to the breeder's rights regarding materials of the protected variety with / without the consent of the Breeder. • Where the Authority considered that too high a proportion of the protected plant variety offered for sale is being imported, it may license a person to produce it locally. • The period of validity of the license will vary in accordance to the varieties in question.

Country	Contents / Form of application
Thailand	• Name of the new plant variety • Particulars of features of the new plant variety • Name of the breeder • Details showing the origin of the new plant variety / genetic material used in the breeding of the variety • Statement that the propagating material of the new plant variety in respect of which the application for registration has been filed • The genetic materials used in the breeding process • Other items of particulars as prescribed in the ministerial regulation
Indonesia	• Date, month, year of the application • Full name and address of the applicant • Name, address and nationality of the plant breeders and their successor in title • Denomination of the variety • Full description of the variety, including the genealogy traits, morphology characteristics and other important features • Pictures of the features mentioned in the description to clearly illustrate the description
Vietnam	• The application for a new plant variety protection title • A written description of the plant variety, made according to a set form together with photos The dossiers must be in Vietnamese. Where foreign organizations apply for new plant variety rights, it must be submitted the Vietnamese language dossiers together with the English language dossiers
Philippines	• Name of the applicant • Address of the applicant • Description of the said variety (including the particulars of its characteristics • The variety denomination • Samples of propagating materials • The claim that specifies the distinctness
Malaysia	The provision states that such application to be in a prescribed form set by the Board, together with the prescribed fee and supported by documents and or other materials prescribed.

Country	Prior informed consent
Thailand	No provision
Indonesia	No provision
Vietnam	No provision
Philippines	No provision
Malaysia	Where new varieties are developed from land acres / using traditional cultivars developed by the local communities / indigenous people; prior informed consent must be obtained from the Authority to represent these people / groups

Country	Community rights and benefit sharing
Thailand	• The application for registration shall contain a profit sharing in situation where a general domestic plant variety has been used in the breeding of the variety for a commercial purpose • When a plant variety exists only in a particular surrounding and is exclusively maintained by a particular group of local community, then that community will have the right to submit to the local government, a request for initiating an application for registration of the local plant variety in the name of such community • Upon the receipt of the request from the community, the local government shall proceed to apply to the Commission for registration of the local plant variety on behalf of the local community
Indonesia	No Provision
Vietnam	Not expressly stated • For the interest of the nation or community, the Ministry of Agriculture and Rural Development shall issue decisions to force the transfer of the protected new plant varieties and add names of such plant varieties to the list of plant varieties permitted for production and trading if such varieties are not yet included in the list
Philippines	No Provision
Malaysia	No Provision

Country	Gene fund
Thailand	A fund called the **Plant Varieties Protection Fund** to be expended for the purposes of assisting and subsidising activities related to the plant varieties conservation, research and development shall consists the following : • Donated money or property • Subsidies from the government • Money / property received from the registration of plant varieties • Income accruing from profit-sharing Money from the fund will be expended for the following: • Assisting and subsidising activities of local communities in connection with the conservation, research and development of plant varieties • Serving as expenses in the management of the fund • Serving as expenses of local government organisation for the purposes of their subsidising the conservation, research and development of plant varieties of the local communities
Indonesia	No provision
Vietnam	Plant gene source means whole living plants or living parts thereof carrying hereditary information, able to create, or take part in creating, new plant varieties. • Plant gene source is a national asset uniformly managed by the State. • Investigating, collecting gene sources suitable to the nature and characteristics of each plant species • Evaluating gene sources according to biological criteria and use value • Building databases and system of information on plant gene sources • Conserving for a long time and safely gene sources already determined to be suitable to the specific biological characteristics of each plant species • The State shall invest in and support the collection and conservation of the gene sources of precious and rare plants, the building of establishments for the storing the gene sources of precious and rare plants and the conservation of the gene sources of precious and rare plants in the local communities.
Philippines	No provision
Malaysia	No provision

Country	Remedies and penalties for infringements
Thailand	• Any competent official having the responsibility in connection with registration of new plant varieties for protection thereof, unlawfully or without consent of the applicant for registration; • Allows other persons to use; 1.) Shall be liable to imprisonment not more than 2 years; or fine not exceeding 400,000 Baht; or both. Any right holder of a new plant variety who fails to display a mark on the propagating material of the new plant variety, shall be liable to imprisonment for a term not exceeding 1 month or fine not exceeding 20, 000 Bhat or both
Indonesia	Anyone found to have deliberately committed an offence, without the consent of the owner, is subject to a maximum imprisonment of 7 years and a maximum fine of up to Rp 2,500,000,000.00 (2.5 Billion Rupiah)
Vietnam	Not stated
Philippines	The court may award actual, moral, exemplary damages and attorney's fee according to a proven amount including a reasonable royalty for the use of protected variety • Cause their distribution to charitable organisations • Cause sale and provide the proceeds thereof to research organisations • The Court may order confiscation of infringing of infringing materials • Imprisonment not less than 3 years but not more than 6 years;and or • Fine up to 3 times the profit derived by virtue of the infringement but in no case should be less than 100,000 pesos
Malaysia	A person who: • Contravenes any of the conditions imposed on him; or • Obtains protection of plant variety by fraudulent means; or • Illegally use the deposited samples; or • Assist in obtaining protection of plant variety by fraudulent means shall be guilty of an offence and shall, on conviction be liable to imprisonment not exceeding 2 years; or fine not exceeding RM200,000; or both.

Source: Kumar 2008.

About SEACON

The Southeast Asian Council for Food Security and Fair Trade (SEACON) provides a coordinated approach to food security, agriculture and trade issues. We integrate local initiatives of agrarian reform and agricultural development with trade concerns at the Southeast Asian level. In each of our member countries, we support people centred national based food security councils that enable government, private sector and civil society representatives to meet and dialogue on agriculture and trade issues.

The establishment of the national food council is to ensure that whatever analysis / positions taken on at the regional level, would have the secure backing from the grassroots and vice versa.

Our role is thus to:

- Monitor and keep in check the adverse effects of free trade on peasant farmers
- Monitor the development of relevant economic and social domestic policies in the region ecologically that promote economically and sustainable production
- Offer alternative agro-trade strategies based on the principles of fair trade and food sovereignty
- Improve and lobby for policies related to food, agriculture and trade at regional and international levels

ISBN 978-983-43301-5-6

Published by:
SOUTHEAST ASIAN COUNCIL FOR
FOOD SECURITY AND FAIR TRADE
No. 24, Jalan SS1/22A, 47300 Petaling Jaya,
Selangor Darul Ehsan, Malaysia.
Tel : (6) 03-7876 0520
Fax : (6) 03-7873 0636
Email : seacon@tm.net.my
Web : www.seacouncil.org

Printed by Syarikat Asas Jaya

Published in 2008

ISBN 978-983-43301-5-6