

# **INTEGRATING FARMERS' RIGHT TO TRADITIONAL AGRICULTURAL KNOWLEDGE INTO MALAYSIA PLANT VARIETY LAW**

**Murshamshul Kamariah Musa\***

*Universiti Sultan Zainal Abidin*

**Zuhairah Ariff Abdul Ghadas**

*Universiti Sultan Zainal Abidin*

**Abdul Majid Tahir Mohamed**

*Universiti Sultan Zainal Abidin*

**Abdul Majid Hafiz Mohamed**

*Universiti Sultan Zainal Abidin*

## **ABSTRACT**

Lauded as stewards of agricultural biodiversity, successive generations of farmers have engaged in collective systems of conservation and innovation in improving crops since the earliest plant domestications. Their ancestral knowledge and practices have witnessed the sharing of the reproductive material between them since thereon. Modern agricultural expansion and development have contributed to the flow of crops globally. Intellectual property rights in the agricultural field such as patents and plant breeders' right, to a certain extent have affected these traditional agricultural practises of the farmers. Nonetheless in many parts of the world, where small farming communities still form an integral part of their food production chain, farmers' traditional farming practices and knowledge are still widely used. This paper argues that over reliance on modern system of agricultural and intellectual property rights in the long run might threaten these small farmers' communities and suggest that the Farmers' Rights concept as enshrined in the FAO Treaty 2004 should be integrated into national legislations affecting farmers. Applying doctrinal analysis on existing plant variety law in Malaysia, this article investigates the extent to which the concept of Farmers' Rights to their traditional agricultural practices has been incorporated into the law. By way of comparison with the practices in India, a country quoted as having best practices in implementing Farmers' Right, the paper attempt to suggest on the possible way to integrate their practices into the Malaysia plant variety law.

**Keywords:** Farmers' rights; Right to traditional agricultural knowledge; FAO Treaty 2004; Plant variety law; Malaysia.

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\* Corresponding Author: Faculty of Law & International Relations, Universiti Sultan Zainal Abidin, Kuala Terengganu, 21300, Malaysia. Tel: (601) 39210767, E-mail: msham@unisza.edu.my

## 1. INTRODUCTION

Taking cue from the four core components articulated under Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture 2004 (FAO Treaty); namely the right to save and sell seed, right to traditional knowledge, right to participate in equitable benefit-sharing and right to participate in decision-making processes – this analysis seeks to identify whether the Farmers' Right provisions in Malaysian legislation incorporates the four essential components identified under the FAO Treaty.

The basis of Farmers' Rights is explained and affirmed in the Preamble of the FAO Treaty as follows:

“that the past, present and future contributions of farmers in all regions of the world, particularly those in centres of origin and diversity, in conserving, improving and making available these resources, is the basis of Farmers' Rights”.

The above affirmation in the FAO Treaty is based on the resolution reached by the Food and Agriculture Organisation (FAO) in their 1989 Conference under Resolution 5/89.

The Resolution provides: “Farmers' Rights means rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly those in the centers of origin or diversity. These rights are vested in the International Community, as trustee for present and future generations of farmers, for the purpose of ensuring full benefits to farmers, and supporting the continuation of their contributions...”. Para 8 of the Preamble, also lists out few fundamental rights for the realisation of Farmers' Rights such as the farmers' traditional rights (to save, use, exchange and sell farm-saved seeds and other propagating material), rights to self-determination and decision-making and the fair and equitable sharing of benefits from the utilisation of PGRFA. Para 8 of the Preamble to the FAO Treaty states as follows: “Affirming that the rights recognized in this Treaty to save, use, exchange and sell farm-saved seed and other propagating material, and to participate in decision-making regarding, and in the fair and equitable sharing of benefits arising from, the use of plant genetic resources for food and agriculture, are fundamental to the realization of Farmers' Rights, as well as the promotion of Farmers' Rights at national and international levels;”.

Article 9, which forms Part III of the FAO Treaty and explains the concept of Farmers' Rights. Article 9.1 of the FAO Treaty states:

“The contracting Parties recognise the enormous contribution that local and indigenous communities and farmers of all regions of the world, particularly those in the centre 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.”

Article 9.2 of the same Treaty puts forward subject matters which are included under Farmers' Rights concept as follows:

(a) protection of traditional knowledge relevant to plant genetic resources for food and agriculture;

- (b) the right to equitably participate in the sharing of 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.”

Article 9.1 specifically recognizes the enormous contribution that indigenous and local communities and farmers have made to conserve and develop plant genetic resources. Article 9.2 identifies three measures to protect and promote farmers’ rights (protection of traditional knowledge relevant to plant genetic resources for food and agriculture (PGRFA), right to benefit from equitable benefit sharing of PGRFA and right to participate in decision making processes relating to farmers) and Article 9.3 (right to seed saving practices). The optional measures enumerated under Article 9.2 and 9.3 are those that member countries can adopt according to the needs of their own countries. India’s legislation on plant variety protection law (PVP) which is the Protection of Plant Varieties and Farmers’ Rights Act 2001 and the Organisation of African Union Model Law (the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources) have been identified as two pieces of legislations that had strongly supported the rights of farmers and provided a balance with rights of breeders by incorporating the four core components of Farmers’ Rights concept in them (Gulzar, 2013; Singh, 2002).

India is considered particularly important in discussions (Andersen & Winge, 2009) on the development of a legal framework for Farmers’ Right as it is among the first countries in the world to adopt extensive legislation on Farmers’ Rights. Its Protection of Plant Varieties and Farmers’ Rights Act 2001 (PPVFR 2001) which provides simultaneous legal protection for both breeders and farmers is considered unique because it enables farmers to claim special forms of intellectual property rights over their own traditional plant varieties. The uniqueness of India’s PPVFR 2001 lies in its innovative provisions relating to the rights of its farming communities. By combining the features of plant breeders’ rights in UPOV and elements of CBD and the FAO Treaty, the PPVFR 2001 is a step forward from other legislations as it recognises the various rights of farmers’ parallel to those of the commercial breeders (Peschard, 2014). India’s PPVFR has been described by Dang and Goel (2009) as a *sui generis* piece of legislation representing the “vulnerabilities and ambitions of developing nations.”

## 2. PROBLEM STATEMENT & OBJECTIVES OF STUDY

Although a framework is already in place for the realisation of the Farmers’ Rights as perceived under Article 9 of the FAO Treaty, there are gaps and lack of guidance towards its complete implementation in national legislations. Regardless of the slow process at the global level, individual states should play a more active role towards the realisation of Farmers’ Rights especially in the developing countries to ensure the continuous livelihood of the large population of rural farming communities in those regions. Instead of competing or trying to be IPR-like, Farmers’ Rights should reflect the particular needs and address the concerns of each particular country as echoed throughout the FAO Treaty.

Malaysia is a member of the World Trade Organizations (WTO) which regulates international trade between governments. In compliance with the requirement of Article 27.3(b) of Agreement on

Trade-Related Aspects of Intellectual Property Rights (TRIPS) which is a trade instrument under the auspices of WTO, Malaysia has enacted the Protection of New Plant Varieties Act of 2004 which grants exclusive intellectual property rights, the plant variety protection (PVP), to plant breeders. Malaysia has also ratified both the FAO Treaty and Convention on Biological Diversity (CBD) as part of its international commitments (Ministry of Foreign Affairs, Malaysia). Both of these international instruments recognise the contribution of farmers towards conservation and development of plant genetic resources.

Section 13 of the Patent Act of Malaysia excludes from patentability “plants or animal varieties or essentially biological processes for the production of plants or animals.” As the Act expressly excludes plant varieties from the scope of patentable subject matter, Malaysia is obliged to protect plant varieties under a *sui generis* system or a system which combines both patent and *sui generis* as mandated by Article 27.3 (b) of TRIPS. In furtherance of this obligation, Malaysia enacted the Protection of New Plant Varieties Act in 2004 (PNPVA). Given that Malaysia is not a member of UPOV, there is no requirement to enact PVP legislations according to the requirements of either of the UPOV Conventions of 1978 or 1991. Malaysia has in fact chosen to emulate India’s formula by recognising the contributions of local indigenous and traditional farming communities in its plant variety legislation (Azmi, 2004).

Commendably the PNPVA 2004 does recognise the importance of the contributions of these three communities in the Preamble of the Act where it provides as among its objectives – “.. the recognition and protection of contribution made by farmers, local communities and indigenous people towards the creation of new plant varieties”.

Nonetheless an overall reading of the Act suggests the legislation focuses more on the process of registering and acquiring breeders’ rights so that the above objectives on recognition of farmers, local and indigenous communities are recognised more as an exception rather than as a stand-alone right (Protection of New Plant Varieties Act 2004 (Malaysia). By and far, the farming communities in Malaysia has yet to be given recognition in the creation of new plant varieties which was developed by commercial breeders by using the traditional cultivated varieties, developed by farmers. An analysis of the register of the plant variety of Malaysia as maintained under the Department of Agriculture of Malaysia, indicates most of the registered varieties are under the name of commercial companies rather than individual farmers.

If the overall objective of Farmers’ Rights is to ensure continued maintenance of plant genetic resources for food and agriculture – partly as a means in the fight against poverty – it is vital to have the stewardship approach as the leading principle, also when seeking to combine the two approaches. However, the emphasis on traditional knowledge may pave the way for the recognition of farmers’ rights more in line with farmers’ needs and the stewardship approach. India’s Act represents an advanced attempt to combine the two (Andersen, 2005).

### 3. METHODOLOGY & FINDINGS

Farmers’ Rights concept includes the self-determination rights of farmers to seed saving practices and to be involved in any decision-making processes affecting the farmers’ community, local or global. The concept also acknowledges the important role farmers have played in the domestication and adaptation of crops in various weather and natural conditions. The farmers’ efforts have

resulted in the availability of a wealth of materials for commercial plant breeders to utilise for further crop improvement. The foundation of this concept stresses on the important role that farmers of all regions have made in the past, present and in future - towards the conservation and development of PGR as the basis of food crop production throughout the world (Mekouar, 2002). Plant breeding has become a highly developed science, becoming more and more sophisticated through the knowledge of genetics and biotechnology. Presently, breeding of plants are done by farmers, public research agencies, small-and-medium sized breeding companies and multinational specialized breeding corporations. Commercial plant breeders, be them public or private establishments, make and will make use of genetic resources which are available and many of these genetic resources consists of plant varieties developed by the farmers. Through the method of recombination of desired traits of plants in one variety, it resulted into a new variety of plant with increased yield, with resistance and tolerance to abiotic stress. The new variety can generate huge profit to the commercial plant breeders (den Hurk, 2011). The question remains – as to the possibility of rewarding the farmers for their efforts in providing important base materials for breeding activities. In the same manner plant breeders' rights protect and allow commercial plant breeders to legally claim reward for their breeding activities, it is hoped that Farmers' Rights would be able to provide the same for farmers (Hardon, 1992).

As stressed earlier, the term Farmers' Rights is not accorded any official definition as the predicaments of farmers differ greatly from one country to another; giving rise to many interpretations and perceptions. However, to reduce uncertainty and ensure a fruitful cooperation between all stakeholders in the agricultural world, a working definition is available under the Pre-Ambles and Article 9 of the FAO Treaty. The FAO Treaty also devotes two other articles namely Article 13.3 and Article 18.5 to elaborate more on this concept. Article 13.3 states – “The Contracting Parties agree that the benefits arising from the use of plant genetic resources for food and agriculture that are shared under the Multilateral System should flow primarily, directly and indirectly, to farmers in all countries, especially in developing countries, and countries with economies in transition, who conserve and sustainably utilize plant genetic resources for food and agriculture.” Article 18.5 further clarifies that – “The Contracting Parties agree that priority will be given to the implementation of agreed plans and programs for farmers in developing countries, especially in the least developed countries, and in countries with economies in transition, who conserve and sustainably utilize plant genetic resources for food and agriculture.”

While it may appear that the suggested measures under Article 9 are optional provisions for State governments, allowing them to tailor the methods of realisation of Farmers' Rights according to the needs and priorities of their respective countries, provisions under Article 13.3 and Article 18.5 are legally binding on signatory members (Andersen, 2006). These two provisions ensure that benefits arising from the utilisation of the PGRFA under the Multilateral System established will directly benefit farmers who contribute to the maintenance and conservation of PGRFA especially from developing countries (Andersen, 2006).

This working definition under Article 9 establishes a common ground of understanding for all parties involved in realising Farmers' Rights concept, while at the same time allowing countries to adopt measures to do so according to their own priorities and needs (Andersen & Winge, 2009). The definition also emphasises on the recognition of contributions and conservation effort made by traditional farmers especially from the genetic rich countries, in developing and maintaining PGRFA. Under the Farmers' Right concept, recognition can be either monetary or non-monetary;

through benefit sharing mechanisms or by enabling the farmers to claim exclusive rights over the plant varieties they cultivate traditionally. However, the specific nature of these bundle of rights and the standard for its enforcement are left to the discretions of each national government. Article 9.2 and 9.3 of the FAO Treaty, provide the responsibility for each national government, to carry out appropriate methods in harmony with their respective national laws in realising the Farmers' Rights concept.

Interestingly, due to international trade requirements under the World Trade Organisation, most countries have to conform and adopt intellectual property legislations that comply with the patenting system and plant breeders' rights. Farmers' Rights concept conflicts with the patent system as the later concentrates on protection of an individual right rather than of a community, whereas plant breeders' rights offer inadequate protection on rights of farmers (Chopra,2004). These legislations regulate Farmers' Rights as an exception within the IP systems. The optional nature of provisions under Article 9 and the strengthening of the IP rights under the international trade regulations, makes it quite difficult to assess whether the steps by the national governments are in line with the whole objective of Farmers' Rights concept. Any action towards realisation of Farmers' Rights can be defended by a national government as appropriate and in accord with the needs and priorities of the respective country. It therefore appears that by allowing the countries to determine and set the standards themselves, the FAO Treaty becomes a weak mechanism for enforcement of Farmers' Rights (Andersen, 2006).

#### **4. CONTRIBUTIONS & SIGNIFICANCE OF STUDY**

The importance of allocating the right to traditional knowledge for farmers is to prevent extinction of such knowledge related to crop genetic resources. This core component under Article 9.2(a) of the FAO Treaty relates only to traditional knowledge on PGRFA. This knowledge includes understanding of plant properties, their uses and methods of cultivation. It also refers to the basic ability of farmers and their knowledge in seed selection, storage and usage of seeds and propagating materials for the next harvest in order to maintain genetic diversity of crops (Food and Agriculture Organizations, 2009). The right confers upon farmers the legal space to carry on with their customary agricultural practices as innovative plant breeders.

Naluwaro and Tabaro (2010) suggested two approaches in protecting farmers' rights to traditional knowledge against extinction and misappropriation. One of the best methods to avoid such knowledge from being extinct and to keep it alive, according to them is by sharing this knowledge with others. Among measures for sharing includes documentation of such knowledge in catalogues, registries, books, websites, gene banks and allowing accessibility to the traditional knowledge by others. It can also be by way of sharing and exchanging of information and other propagated materials between farmers during communal gathering and seed fairs. Stringent measures are required in protecting traditional knowledge of farmers against misappropriation. The aim is to avoid such agricultural knowledge and propagating seeds and materials from being developed commercially without the consent or approval from the holders of such knowledge, and without equitable sharing of the benefits derived therein. Misappropriations of farmers' traditional agricultural knowledge can be minimised by having proper regulations on access to genetic resources and associated traditional knowledge, with proper terms on requirement of prior informed consent and equitable sharing of benefits between parties concerned (Food and

Agriculture Organization, 2009). For example, in the case Asian Chick pea (*Cicer arietinum*), which originated in the farmers' fields in India and Iran. Two Australian government agencies collected samples of Asian chick pea from the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), an internationally funded public research centre based in Hyderabad, India. In April 1997, the agencies representing Australian seed industry applied for patents and plant breeder's rights (PBR) on two strains of these chick pea varieties from those samples. As these varieties were locally used by farmers in India and Iran, there were objections by the two governments. In 1998, the claims for the intellectual property rights over the two varieties by the Australian agencies were withdrawn. From this case it shows that maintaining proper documentation of farmers' traditional plant varieties and related knowledge can assist in ascertaining whether or not an application for new plant variety is genuine or based on prior knowledge of the farmers. Plant variety protection system can formally document farmers' traditional varieties and register them under more flexible requirements compared to those required from a plant breeder. Once a farmers' variety is registered, no one can apply for an IPR over it.

The following discussion compares the measures taken in the three respective jurisdictions namely of India, Malaysia and the OAU Model Law relating to protection of right of farmers to traditional knowledge.

Out of the three jurisdictions, only Section 2(l) of India's PPVFR provides a definition of farmers' (plant) variety describing it as a variety "that has been traditionally cultivated and evolved by farmers in their field or is a wild relative or land race of a variety about which farmers possess common knowledge" (Section 2(1)(i)(ii) of PPVFR 2001). The possibility of farmers in India claiming IPR similar to commercial breeders ensures that their rights as traditional breeders and conservers, in line with Article 9.2(a) of the FAO Treaty. A farmer in India can apply to register a farmers' variety under Section 14(c) of PPVFR 2001. Once registered, the holder of PBR over the variety is able to exclusively produce and market the seed of that registered variety. Peschard (2014) in her examination of the Indian PPVFR observed that among the efforts initiated by the PPVFR Authority of India to increase registration of farmers' varieties is providing exemption of fees for registration of farmers' variety under the PPVFR.

In Part V (Farmers Rights) of OAU Model Law, farmers' varieties and breed are given full recognition and should be protected in accordance with the customary practices and any law (written or unwritten) of the local community where such varieties are found (Article 25.1 of OAU Model Law). Article 25.2 of the OAU Model Law states:

"A variety with specific attributes identified by a community shall be granted intellectual protection through a variety certificate, which does not have to meet the criteria of distinction, uniformity and stability. This variety certificate entitles the community to have the exclusive rights to multiply, cultivate, use or sell the variety, or to license its use without prejudice to the Farmers' Rights set out in this law."

Thus the definition of farmers' varieties, varies according to the laws and customary practices where the said farmers' varieties are found. The broad definition under Article 25 of the OAU Model Law takes into consideration the diverse nature of biological resources that exist on the continent. Being a model framework, each nation member of AU is free to develop appropriate definition suitable to their own county's needs. A variety certificate acknowledging the said

farmers' varieties entitles the concerned community to exclusive IP rights over the said farmers' varieties. Article 27 grants a certificate of farmers' varieties to any product derived from the sustainable use of a biological resource. This broad recognition of farmers' varieties does not exist under both Indian and Malaysian plant variety legislation.

In contrast to both India PPVFR and AU Model Law, Malaysia allows a very limited definition of farmers' varieties under the PNVP 2004. Farmers' role in the conservation and development of a traditional plant variety is recognised under Section 2 of the PNVP 2004. It states as follows:

“farmer” means any person who— (c) conserves and preserves, severally or jointly, with any person any traditional variety of crops or adds value to the traditional variety through the selection and identification of their useful properties;

There is no detailed elaboration on the meaning of traditional or farmers' variety available in the Act. Nonetheless, Section 13 (2)(d) enables a farmer to apply for a grant of breeders' right over a plant variety “bred and discovered or developed” as long as the variety fulfils the requirement of new, distinct and identifiable plant variety as outlined in the Act and regulations. The stringent requirement under Section 14 (1) of PNPV 2004 applies to other applicants except farmers. Farmers who applied for a grant of breeders' right over their developed variety are required to meet a lower threshold of requirements compared to commercial or scientific breeders (Section 14(2) PNVP 2004). The applicable criteria that need to be proved before a plant can be considered as a new plant variety is that it must be new, distinct and identifiable. In Malaysia, a farmer who wants to apply for protection and register a farmers' variety must not include wild varieties discovered or maintained by him as provided in Indian PPVFR, and exclude customary practices of the local community as the determining factor.

A comparative analysis of the relevant provisions in the Indian and Malaysia plant variety law as well as AU Model Law, suggests that the respective jurisdictions view preservation of farmers' traditional agricultural knowledge against misappropriation as a serious matter. This is evident through requirement to furnish detailed information either upon the application for a new variety or to gain access to local biological resources. Of the three, the OAU Model Law demonstrates stricter procedural requirements before access to biological resources can be granted to others. Indian and Malaysian provisions, however, focus on the need to furnish details on consent for usage of genetic materials originating from traditional farming communities, only in an application for granting a breeder's right. Both Indian and Malaysian provisions subject such non-disclosure or false information to a rejection or cancellation of the application for a breeder's right. Respectively section 40(2) of the PPVFR 2001 and Section 23 of PNVP 2004 allows an objection to the grant of a breeder's right for non-conformity which includes failure to furnish relevant information and consent on farmers' contribution or genetic materials used as required by the respective Acts.

Section 40 (1) and (2) of the Indian Act requires the disclosure and information regarding the use of any genetic material which is conserved by any tribal or rural farmers in the breeding and development of the new variety to be registered. Wilful non-disclosure or concealment of such information entails the rejection of the application. Section 43 requires consent to be obtained from the respective farming groups or communities who have made contributed to the development of the variety for the usage of farmers' genetic material in breeding of a new variety. In the event that a commercial breeder knowingly fails to disclose the usage of a traditional variety in its breeding



activity, Section 41 allows farming communities or a third party with reasonable knowledge of such usage to file a claim for compensation which is to be paid into the Gene Fund.

## **5. CONCLUSION AND POLICY RECOMMENDATIONS**

In short, the rights of farmers to the traditional agricultural practices are given legal consideration in each respective jurisdiction albeit the emphasis might vary between India, Malaysia and OAU Model Law which can be attributed to the difference in availability or utilisation of biological resources from farmers' or local communities and the rate of demand for them. Again as reiterated under Article 9 of the FAO Treaty, the rights of farmers to their traditional agricultural practices remain only on paper, if national governments do not take appropriate measures to ensure legal guarantees are provided for the particular right. The main effect of the weakening of this right towards farmers would be the loss of genetic diversity and sustainable practices of agriculture that help reduce environmental hazards.

Among means by which this right to traditional agricultural knowledge can be preserved by national governments is through its documentation and inclusion in databases or registries. These databases or registries could serve a dual purpose. One is to maintain traditional knowledge and avoid its loss as it is traditionally kept orally by local communities. Another aim for having such databases and registries is as a defensive way to prevent intellectual property rights' claims involving traditional knowledge being accessed without the prior informed consent and/or mutually agreed terms of the legal holders of such knowledge. By including traditional knowledge in databases or registries, knowledge becomes of public domain and the novelty requirement for intellectual property rights is invalidated. Any access by a third party to the traditional knowledge particularly pertaining to agricultural and genetic resources, requires documented proof of prior informed consent, of the legal holder of the knowledge.

National governments should also ensure that local agricultural practices be promoted and complemented by modern agricultural practices rather than totally replacing the traditional with modern practices. To maintain the existence of traditional knowledge it needs to be put in use rather than in documents per se. Thus the local agricultural practises constitute important avenues to maintain and re-create traditional knowledge related to agriculture and plant genetic resources. For instance, the indigenous and traditional farmers' methods of soil classifications and seed selection and breeding are based on principles and parameters which are different from those used by the modern plant breeders.

Lastly, among the simplest way to ensure the preservation of the traditional knowledge related to agricultural, is by respecting and promoting the indigenous or local names for crop varieties jointly with scientific names. The traditional or local names of a plant variety reflect and are associated with the nature of the specific crop, its characteristics, place of harvest and its traditional uses. By replacing the traditional varieties with new commercial varieties, it would in the long run contributed to the loss of genetic diversity and the traditional knowledge associated with those genetic resources and the local agricultural practices used for harvesting and consuming them. Instead of replacing a variety with new and modern commercial crops, traditional crops should be re-introduced, conserved and not be replaced.

Whatever means the national governments choose to adopt in order to realize the Farmers' Right concept, it is important that the methods adopted would not be a hindrance to sharing of knowledge among the farmers and would not contribute to the genetic erosion and loss of traditional knowledge.

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### REFERENCES

- Andersen, R. (2005). The history of farmers' rights: A guide to central documents and literature. *FNI Report 8/2005*, Norway. Retrieved from <http://www.farmersrights.org/fr-project/>
- Andersen, R. (2006). Realizing farmers' rights under the international treaty on plant genetic resources for food and agriculture, summary of findings from the farmers' project, phase 1. *FNI Report 11/2006*. Norway. Retrieved from <http://www.farmersrights.org/fr-project/>
- Andersen, R., & Winge, T. (2009). The plant treaty and farmers' rights: Implementation issues for South Asia. *InforMEA*. Retrieved from <https://www.informea.org/en/literature/plant-treaty-and-farmers-rights-implementation-issues-south-asia>
- Azmi, I. M. A. G. (2004). The protection of plant varieties in Malaysia. *Journal of World Intellectual Property*, 7(6), 878-889.
- Chopra, S. (2004). *Protecting Farmers' Rights under the Intellectual Property Law regime: Barriers and Possibilities*. (Master's Thesis, Dalhousie University, Halifax, Canada).
- den Hurk, A. (2011). The seed industry – Plant breeding and the international treaty on plant genetic resources for food and agriculture. In Frison, C., Lopez, F., Esquinas-Alcazar, J.T. (Eds.), *Plant Genetic Resources and Food security: Stakeholder Perspectives on the International Treaty on Plant Genetic Resources for Food and Agriculture* (pp. 163-174). United Kingdom: FAO and Bioversity International with Earthscan.
- Dang, R., & Goel. C. (2009). Sui generis plant variety protection: The Indian perspective. *American Journal of Economics and Business Administration*, 1(4), 303-312.
- Gulzar, U. (2013). Problems and concerns of FR under IPR. *International Journal of Intellectual Property Rights*, 4(1), 1-8
- Hardon, J. (1992). Biotechnology, plant breeding and resource poor-farmers in the third World. In Brouwer, H., Stokhof, E., Bunders, M. & Joske, F.G. (Eds.), *Opportunities and Threats for Small-scale Farmers in Developing Countries* (pp.73-77). Amsterdam (Belgium): VU University Press.
- Food and Agriculture Organization, United Nations. (2009). *Report of the governing body of the international treaty on plant genetic resources for food and agriculture*. Retrieved from <http://www.planttreaty.org>
- Mekouar, A. (2002). A global instrument on agrobiodiversity: The international treaty on plant genetic resources for food and agriculture. *Food and Agriculture Organization*. Retrieved from <http://www.fao.org/3/a-bb057e.pdf>
- Naluwaro, R., & Tabaro, E. (2010). In defence of farmers' community rights: Justifying their inclusion in Uganda's plant variety protection. *ACODE Policy Briefing Paper*, 10.

- Peschard, K. (2014). Farmers' rights and food sovereignty: Critical insights from India. *Journal of Peasant Studies*, 41(4), 1085-1108.
- Singh, H. (2002). Emerging plant variety legislations and their implications for developing countries: Experiences from India and Africa. *National Centre for Agricultural Economics and Policy Research*. Retrieved from <https://www.iprsonline.org/ictsd/docs/ResourcesTRIPSharbir-singh>
- Protection of New Plant Varieties Act 2004* (Malaysia). (2013, October 13). Retrieved from <http://pvpbkkt.doa.gov.my/>
- Protection of Plant Varieties and Farmers' Rights Act 2001* (India). (2013, October 3). Retrieved from <https://indiacode.nic.in/>
- Organisation of African Union Model Law (the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources)*. (2013, October 1). Retrieved from [http://www.farmersrights.org/database/african\\_union.html](http://www.farmersrights.org/database/african_union.html)