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Farmers, Seeds & the Laws: Importing the Chilling Effect Doctrine

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As an increasing number of countries are formulating Plant Variety Protection (PVP) laws, a growing number of farmers are affected by plant breeders' rights. In addition, the seed certification law also affects farmers' relations with seeds. Discussing the farmers' interaction with the PVP law and seed certification law in Indonesia, this article establishes that the farmers have internalised the law beyond the scope of the legal text, such that they self-limit breeding, saving, and exchanging of seeds even in legally permissible situations. Based on the chilling effect doctrine, this article argues that the related laws should be relaxed to ensure that they do not over deter farmers from exercising their rights. This article calls for both negative and positive state obligations to address the chilling effect on farmers arising from both state and private actors.

Alors qu'un nombre croissant de pays élaborent des lois sur la protection des obtentions végétales (POV), un nombre croissant d'agriculteurs sont concernés par les droits des obtenteurs. De plus, la loi sur la certification des semences affecte également les relations des agriculteurs avec les semences. En discutant de l'interaction des agriculteurs avec la loi de POV et la loi sur la certification des semences en Indonésie, ce document de recherche indique que les agriculteurs ont intériorisé la loi au-delà de la portée du texte juridique, de sorte qu'ils se limitent eux-mêmes par rapport à la sélection, la conservation et l'échange de semences même dans des situations légalement autorisées. Sur la base de la doctrine de l'effet paralysant, ce document soutient que les lois connexes devraient être assouplies pour s'assurer qu'elles ne dissuadent pas trop les agriculteurs d'exercer leurs droits. Ce document envisage à la fois des obligations négatives et positives de l'État pour faire face à l'effet dissuasif sur les agriculteurs découlant à la fois des acteurs publics et privés.

A medida que más y más países desarrollan leyes de Protección de Variedades Vegetales (PVV), más y más agricultores se ven afectados por los derechos de obtentor. Además, la ley de certificación de semillas también afecta las relaciones de los agricultores con las semillas. Al discutir la interacción de los agricultores con la ley de PVV y la ley de certificación de semillas en Indonesia, este documento de investigación señala que los agricultores han internalizado la ley más allá del alcance del texto legal, de modo que se autolimitan en cuanto al cultivo, la conservación y el intercambio de semillas, incluso en situaciones legalmente permitidas. Con base en la doctrina del efecto paralizante, el documento argumenta que las leyes pertinentes deben relajarse para garantizar que no disuadan indebidamente a los agricultores de ejercer sus derechos. Este documento contempla obligaciones estatales tanto negativas como positivas en lo que respecta a abordar el efecto paralizante sobre los agricultores, el cual se deriva tanto de actores públicos como privados.



1. Introduction

The concerns about the asymmetry between the extensive monopoly rights created by Intellectual Property Rights (IPRs) on plant genetic resources and the exercise of farmers' rights have been extensively discussed.^[1] The cumulative analysis in academic literature is unequivocal in proving that the laws based on the International Convention for the Protection of New Varieties of Plants 1991 (UPOV Convention 1991) are not suitable for developing countries that rely on informal seed systems.^[2] However, the global north countries continue to push for the UPOV convention or even a higher standard of IPR protection.^[3] As of November 2021, the number of International Union for the Protection of New Varieties of Plants (UPOV) members has increased to seventy-eight.^[4] Furthermore, a recent study indicated that around 60% of the countries in the global south allow for the patenting of plants or parts thereof.^[5]

In its recent report on the protection and enforcement of IPRs in its priority countries, the European Commission emphasised, "[w]eak IPR enforcement continues to be an acute problem" in these countries.^[6] Amongst other issues, the report identifies non-deterring sanctions against IPR infringements as one of the concerns.^[7] Besides claiming a lack of effective plant variety protection (PVP) legislation in these countries, the report states, "the most relevant problems are the overly broad exceptions to the breeders' rights and the limited scope of protection."^[8]

The UPOV-based PVP laws, favoured by developed countries, and often pushed through bilateral or regional trade agreements, regulate farmers' interactions with seeds in many countries. The following paragraphs show how the UPOV-based PVP law and seed certification laws have affected farmers in Indonesia in exercising their right to save, exchange seeds, and breed new varieties.

[1] Aoki (2009); Correa (2000); Fowler (2000); Kloppenburg (1988).
 [2] Braunschweig *et al.* (2014); Christinck and Tvedt (2015); De Schutter (2011); Haugen (2007); Narasimhan (2008).

[3] Often, countries accede to the UPOV Convention or adopt even higher standards through bilateral or regional trade agreements, including with the United States (US), the European Union (EU), Japan, and the European Free Trade Association (EFTA). Dutfield (2019), p. 289; The non-governmental organization GRAIN maintains a list of such agreements. See GRAIN (2018).

[4] See https://www.upov.int/edocs/pubdocs/en/upov_pub_423.pdf (accessed on 24 February 2022).

[5] Correa *et al.* (2020).

[6] The report enlists China, India, Russia, Turkey, Ukraine, Argentina, Brazil, Ecuador, Indonesia, Malaysia, Nigeria, Saudi Arabia, Thailand as priority countries where ineffective IPR protection and enforcement are deemed to cause the greatest economic harm to EU interests. European Commission (2021), p. 11.

[7] European Commission (2021), p. 11.

[8] European Commission (2021), p. 13.

2. Farmers and the Law - Indonesia

A few years before, a series of prosecutions of farmers in Indonesia involving seed breeding and intellectual property drew much attention from the international community. A study was carried out in Indonesia inquiring about the interplay between the IPRs of seed companies and farmers' rights.^[9] The study found the prevalence of a strong mechanism to protect the PVP rights of seed companies, such that the farmers are under constant scrutiny and receive threats of lawsuits, which has affected their freedom to save, exchange and breed seeds.^[10] Further, the study revealed that the seed companies in Indonesia have used both PVP and seeds certification laws to restrict farmers' involvement in plant breeding and exchanging seeds.

Although the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) offers flexibility to design a *sui generis* legislation, the Indonesia-Japan Economic Partnership Agreement (IJEPA) obliges Indonesia to become a party to the UPOV Convention 1991.^[11] There is a similar provision in the draft of the European Union (EU) proposal for the EU-Indonesia Free Trade Agreement (FTA).^[12] Indonesia is not a party to the UPOV Convention yet; however, it has been in continuous contact with UPOV for assistance in making laws based on the UPOV Convention.^[13] While drafting its Plant Variety Protection (PVP) Act, Indonesia sought comments from UPOV on the conformity of its draft with the UPOV Convention 1991.^[14] Eventually, Indonesia adopted the 'Laws of the Republic of Indonesia No. 29 of 2000 on Plant Variety Protection', which closely follows the UPOV model.^[15] UPOV has been assessing the situation of plant variety protection in Indonesia and providing comments on its PVP Act about its conformity with the UPOV Convention 1991.^[16]

A plant variety protection right in Indonesia is granted to a plant breeder for a plant variety that is new, distinct, uniform, and stable.^[17] Upon fulfilling these conditions, a

[9] See Ghimire *et al.* (2021).

[10] See Ghimire *et al.* (2021).

[11] Indonesia-Japan Economic Partnership Agreement 2008, art (3)(c).

[12] The European Union's (EU) proposal for a legal text on intellectual property in the EU-Indonesia FTA (19 December 2016). Available from https://trade.ec.europa.eu/doclib/docs/2017/february/tradoc_155281.pdf (accessed on 28 December 2018).

[13] UPOV (2019).

[14] UPOV (2001), para 119.

[15] Barizah (2012), p. 59.

[16] UPOV (2007), para 49.

[17] Laws of the Republic of Indonesia No. 29 of 2000 on Plant Variety Protection, art 2(1).

breeder is entitled to the PVP right, which grants the right holders the right to prevent others from using the variety for commercial purposes without their consent.

Infringement of breeders' rights is punishable with imprisonment of a maximum of seven years and a fine of up to 2.5 Billion Rupiah.[18] The breeders' rights cover not only the seeds but also the use of any harvested products for propagation.[19] The rights are also extended over a range of varieties including (i) an Essentially Derived Variety (EDV), (ii) the varieties that cannot be clearly distinguished from a protected variety, and, (iii) a variety produced by repeatedly using a protected variety.[20]

Similarly, the Indonesian PVP Act defines plant breeding as "a series of research activities and experiments or the discovery and development of a particular variety, in accordance with, standard methods for the production of new varieties while protecting the purity of the new seed that is produced".[21] This definition leaves it open to interpretation, the parameters of 'standard methods' of plant breeding and whether conventional breeding methods used by farmers would qualify as plant breeding. [22]

The Indonesian Human Rights Committee for Social Justice, a non-governmental organisation, records about fifteen cases involving the criminalisation of farmers' activities related to seeds.[23] In most of these cases, often initiated by seed companies, allegations of IPR infringement, particularly of plant variety protection was raised, but ultimately the main ground for convicting farmers was drawn from the seed certification law, Law No. 12 of 1992. [24] The farmers were convicted for releasing and trading seeds without authorisation, collecting germplasm without approval, etc.[25] Seed certification laws, which were initially introduced to protect farmers from bad seeds, later began to serve the purpose of seed companies to push farmers out of the plant breeding scene.[26]

In 2013, the Constitutional Court of Indonesia ordered to rephrase the provisions of the law to exempt small farmers

from the requirement of a permit to search and collect germplasm for plant breeding and to exempt their varieties from the requirement of a permit to release.[27] The new law on the sustainable agricultural cultivation system of 2019 codifies this exemption.[28] However, the change has not been adequately socialised as the latest charges against a farmer for selling uncertified seeds occurred in August 2019.[29]

In terms of implementation of the Indonesian PVP law, the field study found that the plant breeders in Indonesia exercise the PVP rights to a greater extent than the text of the PVP law by misinterpretation and deterrence of farmers.[30] "[A]t the sales points, while buying the seeds [of protected varieties], farmers are told that they cannot sell, distribute, or save the seeds and, in case they do so, the saved seeds have to be given to the company; if not, these saved seeds would be destroyed, or the company would initiate a lawsuit against the farmer. It must be noted that the PVP law [in Indonesia] allows the seeds to be saved for non-commercial use." [31] The company ensures that the harvest is done in the presence of its representatives. The farmer's address is recorded, and every month a company representative inspects the farmer's holding.[32] Police officers and company officials often visit the fields and the farmers' houses, sometimes forcibly, to check if the farmers have been illegally using the PVP protected seeds.[33] Farmers are fearful that if PVP protected seeds somehow enter their seed network, it would drag them into legal trouble and are therefore cautious about exchanging seeds because the law does not explicitly protect innocent infringers. Furthermore, in some instances, seed companies claim PVP rights over the varieties bred independently by farmers. A maize farmer was sued by an Indonesian subsidiary of a multinational seed company for allegedly pirating the company's seed. However, a genetic test in the laboratory of the Indonesian Centre for Biodiversity and Biotechnology proved that his seeds were genetically different. Nevertheless, the farmer was imprisoned for ten months for trading in uncertified seeds.[34] The PVP law and seed certification law operate hand in hand to restrict farmers' seed system.

[18] Laws of the Republic of Indonesia No. 29 of 2000 on Plant Variety Protection, art 71.

[19] Laws of the Republic of Indonesia No. 29 of 2000 on Plant Variety Protection art 6(1)(4).

[20] Laws of the Republic of Indonesia No. 29 of 2000 on Plant Variety Protection art 6(2).

[21] Laws of the Republic of Indonesia No. 29 of 2000 on Plant Variety Protection, art 1(4).

[22] Kanniah (2005), p. 295.

[23] IHCS (2016).

[24] Criminal provisions of the Law No. 12 of 1992.

[25] See Ghimire *et al.* (2021).

[26] See Ghimire *et al.* (2021).

[27] Hendrianto (2018), p. 193.

[28] However, this new law has several reporting requirements, and it allows the farmers to distribute their varieties only in their locality (regency, city of town). See Antons *et al.* (2020a), p. 603.

[29] See Antons *et al.* (2020b), p. 132.

[30] For the finding of the study in Indonesia, see Ghimire *et al.* (2021).

[31] Ghimire *et al.* (2021), p. 1020.

[32] Ghimire *et al.* (2021), p. 1020.

[33] Ghimire *et al.* (2021), p. 1020.

[34] See Antons *et al.* (2020b), p. 132.

Although the UPOV-based PVP system provides for breeders' exemption authorising other breeders' use of protected varieties for creating a new variety, the concept of EDV introduced by UPOV 1991 restricts this exemption. The Indonesian PVP law has followed the same path extending the breeders' right to the varieties that are EDV and the varieties that cannot be clearly distinguished from the protected variety.^[35] Such provisions create confusion for farmers and limit their possibility of using the protected variety for further breeding. Besides, the series of legal suits against farmers and frequent visits by representatives of seed companies to warn them about the implication of infringements have caused a deterrent effect amongst farmers. Consequently, they prefer to abstain from using PVP protected seeds.^[36]

Dissatisfied with PVP laws, farmers try not to violate them. However, for the farmers, not violating the law, in a real sense, has become abstaining from breeding new varieties and being cautious while exchanging seeds.^[37]

The restrictive and ambiguous provisions of Indonesian PVP law in terms of the definition of plant breeding or extension of plant breeders' rights to EDVs; the seed certification law; the series of lawsuits against farmers; the frequent surveillance by the company and the police, all compounded, have a chilling effect on farmers, such that they are self-limiting even their legitimate freedom to breed and exchange seeds.^[38]

3. The chilling effect doctrine

A chilling effect occurs when individuals seeking to engage in a legally protected activity are deterred from doing so, by a regulation not specifically directed at that activity.^[39] It results in pre-emptive dissuasion from exercising one's legal rights for fear of punishment or threats.^[40] Such deterrence does not stem from direct legal prohibition but as an indirect consequence of the prohibition.^[41]

The chilling effect doctrine is a well-established legal doctrine, conceived in the United States (US), predominantly used in cases related to freedom of speech to invalidate regulations censoring speech if they also

deter or chill rightful speech.^[42] In Europe, the European Court of Human Rights (ECHR) regularly uses the doctrine of chilling effect in cases related to freedom of expression.^[43] In a case concerning an order to a journalist to reveal sources of information, the ECHR reasoned that such order of disclosure would produce a chilling effect in the exercise of press freedom.^[44]

Although the doctrine was initially developed to protect freedom of speech, it has been extended to provide protection to other human rights as well. For instance, in one case the ECHR relied on the notion of chilling effect to protect an opposition politician and the right to freedom of assembly in Russia.^[45] Similarly, the chilling effect doctrine has been explored in the area of abortion rights as well. A study measuring chilling effect in the exercise of abortion rights concluded that the late-term abortion restriction also chills doctors' willingness to perform near-late-term abortion, affecting women's right to carry out legally permissible abortion.^[46] In *A, B and C v. Ireland*,^[47] the ECHR acknowledged that the criminal provisions of the Irish abortion law, coupled with substantial uncertainty of the law constituted a significant chilling factor for both women and doctors, regardless of whether or not prosecutions have been pursued under the law.

The notion of chilling effect perfectly describes any act of deterrence from undertaking a legally permissible action by a person. We can observe the concept being gradually diffused to other human rights. Furthermore, the doctrine of chilling effect has historically been limited to state actions or actions that have some state involvement. More recently, scholars have been arguing to broaden its scope to include chilling effect caused by private actions.^[48] In practice, social media platforms like Facebook and Twitter are being implicated in creating a chilling effect on free speech.^[49]

[42] The US Supreme Court used the term "chill" in constitutional reference in 1952 in *Wieman v. Updegraff*, 334 U.S. 183,195 (1952). The literal term "chilling effect" was first used in 1963 in *Gibson v. Florida Legislative Investigation Comm.*, 372 U.S. 339 (1963), where the court explained that "...the deterrent and 'chilling' effect on the free exercise of constitutionally enshrined rights of free speech, expression, and association is consequently the more immediate and substantial." See Schauer (1978), p. 685.

[43] Pech (2021), p. 9.

[44] "Having regard to the importance of the protection of journalistic sources for press freedom in a democratic society and the potentially chilling effect an order of source disclosure has on the exercise of that freedom, such a measure cannot be compatible with Article 10 (art. 10) of the Convention unless it is justified by an overriding requirement in the public interest." *Goodwin v. the United Kingdom* 17488/90, ECHR (27.03.1996), para. 39.

[45] *Navalny v. Russia* 29580/12 [2018] ECHR 1062 (15.11.2018)

[46] *Canes-Wrone and Dorf* (2015).

[47] *A, B and C v. Ireland* 25579/05 ECHR (16.12.2010), see para 131 and 254.

[48] See Youn (2013), pp. 1496-1505.

[49] E.g. See Hooker (2019) for discussion on the application of the first amendment on social media platforms.

[35] Laws of the Republic of Indonesia No. 29 of 2000 on Plant Variety Protection, art 6(2); UPOV Convention 1991, art 14(5)(a).

[36] See Ghimire *et al.* (2021).

[37] See Ghimire *et al.* (2021).

[38] See Ghimire *et al.* (2021).

[39] Schauer (1978), p. 963.

[40] Pech (2021), p. 4.

[41] Youn (2013), p. 1481; Solove (2007), pp. 142-143.

There are also some initiatives to voice and document the chilling effect of copyright law. A project at Harvard University, Lumen, collects and analyses legal complaints and requests for the removal of online materials and seeks to help Internet users to know their rights.[50] Their old website, named 'Chilling Effects Clearing House', states that some individuals and corporations are using IPRs and other laws to silence online users.[51] The project encourages "respect for intellectual property law while frowning on its misuse to "chill" legitimate activity." [52] Started in 2002, it was initially focused on complaints submitted under the US's Digital Millennium Copyright Act and later the project has grown to include complaints of all varieties, including trademarks, defamation, privacy, etc. with partners around the globe.[53]

Criticising the chilling effect of copyright law on free speech, Netanel writes, "[c]opyright's speech-chilling effect arises from a complex interplay of bloated copyright holder entitlements, forbidding litigation costs, copyright holder overclaiming, media's clearance culture, speech intermediaries' overdeterrence, and widespread uncertainty about just how expansive are copyright holder rights at the intersection of fair use, the idea/expression dichotomy...." [54] The convergence of these factors, he argues, magnifies that proprietary control of copyright "through a penumbra of censorship and self-censorship extending far beyond even that which copyright holders would likely obtain if they had to litigate their copyright infringement claims in court." [55] When the chilling effect arises from existing IPRs, it can unduly benefit the IPR holder *de facto* by broader protection than the text of the law and unjustly restrict the users.

4. Farmers' rights and the doctrine of chilling effect

Whether the doctrine of chilling effect is relevant in the issue of the exercise of farmers' rights depends on how we perceive the farmers' rights. If farmers' rights are seen as just exceptions to the rights of breeders, as UPOV does, breeders' rights can easily override farmers' rights. In his seminal account of chilling effect theory, Schauer argues that the chilling effect doctrine is based on the view that

[50] See <https://www.lumendatabase.org/> (accessed on 06 March 2022).

[51] See <https://chnm.gmu.edu/digitalhistory/links/cached/chapter7/link7.62.ChillingEffects.html> (accessed on 06 March 2022).

[52] See <https://chnm.gmu.edu/digitalhistory/links/cached/chapter7/link7.62.ChillingEffects.html> (accessed on 06 March 2022).

[53] See https://www.lumendatabase.org/blog_entries/763 (accessed on 06 March 2022).

[54] Netanel (2008), p. 115 (emphasis added).

[55] Netanel (2008), p. 116 (emphasis added).

free speech is a "preferred value"[56] and the suppression of speech is "a particularly harmful and undesirable situation." [57] In the same fashion, if the rights of farmers to freely circulate seeds and to breed new varieties adaptable to their local conditions are seen as a "preferred value", there is no reason for chilling effect doctrine to be non-applicable.

Recent international and regional policy discourses have shown a shift in the way smallholders farmers are seen, "from being a part of the hunger problem, to now being central to its solution".[58] A report by the United Nations (UN) High-Level Panel of Experts on Food Security and Nutrition (HLPE) states that the orientation of policies towards large-scale and industrial, rather than small-scale and agrarian agriculture can be attributed to the inability to achieve the first of the Millennium Development Goals, the alleviation of poverty alleviation and the eradication of hunger.[59] Similar findings were reported in a World Bank Report of 2019 that affirms that increasing smallholder productivity is effective at reducing poverty because it raises the income of the poor directly.[60]

Furthermore, the right to save, sell or exchange seeds is crucial to maintaining the livelihood of the farmers and a nation's self-reliance in agriculture.[61] From a human rights perspective, introduction of legislation that creates obstacles to the reliance of farmers on informal seed systems also violates the human rights obligation of the state, since it would deprive farmers of the means to achieve their livelihood.[62] In 2018, the UN adopted the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP). According to UNDROP, states shall, *inter alia*, "take measures to respect, protect and fulfil the right to seeds of peasants"[63] and "take appropriate measures to support peasant seed systems, and promote the use of peasant seeds and agrobiodiversity".[64] And they shall "ensure that seed policies, plant variety protection and other intellectual property laws, certification schemes and seed marketing laws respect and take into account the rights, needs and realities of peasants".[65] Therefore, if chilling effect doctrine can be extended to other human rights, there is no reason that this doctrine does not extend to secure the right of farmers.

[56] Schauer (1978), p. 705.

[57] Schauer (1978), p. 649.

[58] Graeub *et al.* (2016), p. 1.

[59] HLPE (2013), p. 45.

[60] Christiaensen and Vandecasteele (2019).

[61] Braunschweig *et al.* (2014), p. 7; Gene Campaign (nd).

[62] De Schutter (2009), para. 4.

[63] UNDROP Art 19(3).

[64] UNDROP Art 19(6).

[65] UNDROP Art 19(8).

Youn differentiates between the situations when the chilling effect derives from government actions and the situations when the chilling effect derives from the action of private parties, which she calls "private chill".[66] While the PVP laws, seed certification laws and the related regulations are the government actions causing the chilling effect, the surveillance of farmers, threatening to sue them, carrying out secret investigation, etc. can be grouped as the source of private chill. As Youn suggests private chill can be classified into those arising from legal private activity and illegal private activity.[67] While company officials visiting farmers' fields with their consent in a casual manner might appear in general as a legally permissible action, activities like threatening to sue, giving false legal information (e.g., that law prohibits them to save seeds of protected variety) are unethical if not defined as illegal by the law. Whether legal or illegal, in effect these actions have a chilling effect on farmers to freely exercise their rights. When the source of chill is an illegal private activity, the courts may exercise authority against such illegal action from occurring and provide equitable relief. [68] However, if the source of chill is a legal private activity, it will require a legislative solution.

The chilling effect doctrine in relation to farmers' rights demands both negative and positive state obligations. Negatively, the state has the obligation to refrain from taking measures that have a chilling effect on farmers by deterring or discouraging the legitimate exercise of their rights. In terms of positive obligation, the state should intervene when there are threats that aim to chill farmers to operate in their seed system, and it should create a favourable environment for them to exercise their rights.

Facilitating breeding activities of farmers enhances their innovation and allows them to adapt new varieties to local conditions. Since the varieties locally bred by farmers under very challenging natural conditions continue to be a source of breeding materials for formal breeders[69], utmost effort should be also made to enable farmers to use the new commercial varieties for further breeding. Unclear laws may often work in favour of the stronger party. For instance, to answer whether a variety is an EDV of an initial variety, the genetic distance estimate between two varieties should be compared to threshold distances, and these threshold values are not statistical questions, rather they are subjective value judgements.[70] And as

discussed above, there are instances where seed companies have extended their claims over farmers' varieties, which after the tests in a laboratory could not be proven. The law is already restrictive to farmers, and as argued, in practice laws have a higher impact due to the chilling effect. Such a legal environment shrinks the operational field of farmers to freely exchange and breed new varieties.

Similarly, the absence of adequate legal or judicial protection and high legal costs can discourage farmers to pursue a legal remedy to make claim of their rights. In most of the cases in Indonesia, the farmers did not have legal representation.[71] Besides, high legal fees and lack of adequate protection may further chill farmers from bringing suit to protect their varieties or other rights. A chilling effect on making claims by farmers due to high legal cost and lack of clear laws was also observed in a parliamentary inquiry in Western Australia examining mechanisms for compensation for economic loss to farmers caused by contamination by genetically modified (GM) material.[72]

5. Conclusion

While the reports from the perspectives of developed countries like the EU continue to point to the "overly broad exceptions to the breeders' rights" and non-deterrent sanctions as problems in several developing countries, [73] the farmers in developing countries with stronger laws have been bearing the chilling effect of the law.

Lawmakers should be cautious about the text of the law protecting breeders' rights and that seed certification laws do not chill farmers in exercising their rights to maintain their seed system. As argued above, the farmers abstain from doing perfectly legal activity due to fear of being dragged into legal trouble. Such chilling effect of PVP law and seed certification law is allowing seed companies to obtain higher level of protection than the actual text of the law. Strong PVP and seed certification laws should not be a means of excessive deterrence to farmers whose operational field has been already shrunken by various regulations.

[71] Ghimire *et al.* (2021).

[72] In *Marsh v. Baxter* [2014] WASC 187, an organic farm in Western Australia was contaminated with GM canola from a neighbouring farm. The organic farm lost its certification (along with the price premium for organic produce). The organic farmer sued the GM farmer for the damages of A\$ 85,000. He lost the case and appeal, and instead, legal fees were in the order of A\$ 2,000,000. The Committee observed that the case may have had a chilling effect on the making of claims for GM contamination. See Standing Committee on Environment and Public Affairs (2019), p. 26.

[73] European Commission (2021), p. 13.

[66] See Youn (2013).

[67] See Youn (2013), p. 1538.

[68] See Youn (2013), p. 1537.

[69] Ignacio *et al.* (2013), p. 38.

[70] Lombard *et al.* (2001), p. 61; Janis and Smith (2007), p. 1599.

Broader restrictions compounded with the chilling effect of such regulations will impede the process of farmers' innovation. As discussed above, legally the farmers in Indonesia are allowed to use the PVP protected seed for further breeding under breeders' exemption, but the complex law governing EDV and frequent warnings by seed companies deter farmers from using such material for breeding. Policies should promote farmers as innovators rather than mere receptors of the final product. Law should be able to guarantee a safe environment for farmers to carry out their farming activities by incorporating provisions like protection of innocent infringement, guarantee of legal representation, amongst others. The legislators should also address the chilling effect of private actions of companies to protect farmers from harassment and facilitate their seed sharing and breeding activities.

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