Liberating seeds
with an Open Source Seed Licence

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Photo: Seeds of parsnip chervil, ARCHE NOAH, Schiltern

Editorial note: Commons or Commons-based plant breeding has become a topic of significant societal relevance and AGRECOL has been committed to this subject for a number of years. The present paper is based on several pieces of work, above all on an expert report by Claudia Schreider (2015) and a working paper by Johannes Kotschi and Lisa Minkmar: “Liberating seeds with open source licenses“ (2015).

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Preface

We live in an era of privatisation. Wherever possible exclusive rights are asserted, use rights are sold, and goods are subjected to economic interests. This applies to physical (or material) goods, such as water, as well as to immaterial goods, such as scientific findings, music and theatre plays. It is irrelevant whether goods are scarce, such as land, or could be reproduced and used by everyone, such as seeds.

Not surprisingly, therefore, resistance to these developments has emerged and there is a counter-movement calling for a return to commons. Debate about the preservation of common goods – or simply commons – was instigated by Elinor Ostrom. Together with her working group she has studied countless commons and has confirmed: commons do not come into existence by themselves, they are made. Commons are the result of complex interactions of resources, communities and care taking; that is, of commoning. In her life-work Ostrom defined universal rules – which she calls “design principles” – and demonstrated that compliance with these rules guarantees the sustainable use of common goods. In 2009 she was the first woman awarded the Nobel Prize in Economics.

A pioneer in the implementation of these ideas has been the computer industry. Software development in the last 30 years has meant that many computer programmes today are "open source". Open source software has been widely adopted, and is financed by business models without royalties. The Linux kernel (used in a variety of operating systems and embedded devices) is a prominent example.

Can something similar be devised for seeds, or more specifically for securing new varieties of bred and cultivated crops? With this question in mind, plant breeders, agronomists, commons activists and lawyers have formed an interdisciplinary working group in the search for answers.

This working group is looking for ways to apply the insights of Elinor Ostrom to seeds. At the same time, it draws upon the software industry’s experiences with legal protection of (open source) software. On this basis, the working group has developed a new concept for the protection of seeds, the Open Source Seed Licence (OSS Licence). The current results are presented in this paper.

1. Context and rationale

Over many millennia seeds were a common good and as such were accessible to almost everybody. The breeding and cultivation of crops was thus a community effort. Recreating seeds in each production cycle, farmers used to share, trade, and cultivate plants from these seeds.

This changed in the second half of the 19th century. The findings of Gregor Mendel and the emergence of genetics as a new branch of science formed the basis for scientifically informed plant breeding practices, which have contributed greatly to agricultural intensification. For instance, yields increased several-fold and resistance to plant diseases strengthened significantly.

In Germany there were initially different organisational forms. In northern and eastern Germany, plant breeding was mainly driven by large farm estates and commercial breeders. Individually and in working groups, farms commenced breeding and selling improved seeds. This resulted relatively early in specialised plant breeding companies, which then grew into an independent small to medium sized industry sector.

In addition to these developments, a wide variety of associations, organisations, and some state institutions, including technical schools, especially in southern Germany, began breeding with the support of public plant-breeding facilities.

Very soon conflicts arose between private and public plant breeders. Private breeders perceived public or publicly supported farming systems as “unfair competition”, and it came to the first conflicts over intellectual property in seed propagation and seed sales. As is common in other sectors, private breeders demanded state guarantees for the protection of their varieties (i.e. investments). Hence, also relatively early, regulations and laws recognising and protecting intellectual property in seeds were implemented in Germany. In 1900, the first registration system for new varieties was introduced, although it was not mandatory. However, in 1933 the Seed Act was enacted, which meant that "authorisation" and examination of a variety became mandatory and subsequently many varieties that were not permitted simply disappeared.

UPOV, the International Association for the Protection of New Varieties of Plants, established in 1961, was based on the German seed acts and laws. Through UPOV the system of exclusive ownership of plant genetic material, in the traditional spirit of private property rights, has spread worldwide. As a result, many countries have been forced to abandon their own systems of public seed provision and to privatise them.

In other countries it was for a long time primarily public research institutions that performed plant breeding; private breeders were successful only in certain niches. A prominent example of such a niche is hybrid maize in the US[1]. Apart from that, the use of new varieties - for many decades - remained free of intellectual property rights. Only in the 1980s did it come

to major changes when the development of engineering processes for genetic modification of plants, and the decision of the US Supreme Court (1982) that gene sequences can be patented, opened up possibilities for the patenting of seeds.

Each of these approaches to seeds - UPOV and patent legislation - has increasingly promoted privatisation of plant breeding and the development of seeds, which in turn has resulted in market concentration. The market concentration of the seed industry began in the 1970s, when international chemical corporations discovered plant breeding as a synergetic and highly profitable new business, and consequently began buying up seed companies. In Germany alone, 25% of existing seed companies were either abandoned or were bought up over the last 15 years. In 2015, the German plant breeders' federation had only 58 separate breeding companies registered[2]. Given the wide range of desirable crops in agriculture and horticulture, the number of remaining breeding companies is very low and the diversity in variety supply is in sharp decline.

Thus, ultimately, the opposite of what had been hoped for by small and medium breeding enterprises has been achieved. With the creation of laws to protect intellectual property rights, the private breeding sector should have been strengthened. Instead, more and more breeding companies are disappearing. Plant breeding and seed supply have become investment focuses of global corporations; the revolution devours its children.

The concentration of companies in the global seed sector, tending to pure monopoly, is threatening because it leads to the reduction of genetic diversity and one-sidedness in agricultural production. It also creates a growing dependence of seed users (and society as a whole) on a few companies. As a result, the sustainability of agricultural production as well as food security is at risk.

Instead of a small number of crops and little choice of varieties within one crop, a large diversity is necessary because:

- Only in this way will agriculture be able to adapt to climate change and provide food security.

- Secondly, in order to produce nutritious food while at the same time reducing environmental impacts, varieties with local, site-specific characteristics, which require only little or no chemical input, are needed; even if such varieties are not suitable for large-scale cultivation and therefore not attractive in an "economy of scale" geared toward expansion.

- Finally, varieties that are suitable for organic farming are needed. This is necessary to maintain thriving landscapes that can provide clean air, drinking water and recreational spaces etc.

These tasks concern the provision of general public goods. Private plant breeding, given market dynamics, is less and less able to provide such public goods. Especially mass production run counter to such provision, and the lack of innovation associated with a monopoly market is best understood as "institutionalised market failure".

So we are now at a turning point. Private plant breeding on its own, it appears, cannot deliver on all accounts necessary for human survival. A non-private, non-profit plant breeding sector is required, which can perform the tasks and deliver the goods listed above. In the past, states were the providers of these goods, but they have increasingly withdrawn from plant breeding.

In this vacuum, a non-profit, civil society, plant-breeding sector has emerged in recent decades, which has lobbied for change and generated public awareness about these problems, but which above all provides a counterpoint to corporate seeds by way of their breeding practices.

Rather than being in direct competition with the private sector, however, civil society plant breeding is more of a methodological laboratory for public service breeding with the aim to increase the common good. In this context, questions concerning the creation of commons are relevant, since the current IPR regime provides no such possibilities.

With the development of an Open Source Seed licence, OSS licence, we have found a way to keep seeds free from the logics of patenting and plant variety protection. In the following sections, we present this approach. Specifically, we look at the open source principle that has inspired this work, the legal basis of the OSS licence, as well as the licence itself and its applicability.

2. What is open source?

The term open source is derived from computer science. It refers to free and open access to computer source code facilitated by a clever hack of intellectual property rights. Open source is not the same as open access, which is completely free and unlimited access. Essentially, open source ensures access to a common good by protecting it against privatisation and as such it is a regulated and "protected commons" (Kloppenburg)[3]. It constitutes, in principle, a conceptual framework that could be adapted to protect seeds.

The open source concept is a further development of the free software[4] principles first articulated in the GNU General Public Licence (1989) by Richard Stallman, but already declared in the GNU Manifesto (1983). His aim was that developers and users of computers should always be allowed to investigate how software works and be able to modify and share their work freely with others. Stallman defined four conditions ("*freedoms*") required for software to be considered free[5]:

(1) The freedom to run the program as you wish, for any purpose.

(2) The freedom to study how the program works, and change it so it does your computing as you wish. Access to the source code is a precondition for this.

(3) The freedom to redistribute copies so you can help your neighbour.

(4) The freedom to distribute copies of your modified versions to others. By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

In order for software not just to be free, but also remain free in a way that is legally enforceable, the four freedoms of software were articulated in the GNU General Public Licence (GPL), which is a legal document that rests on and extends the rights defined in copyright law. In short, the GPL ensures that any further and future developments of software code (based on the four freedoms) remain free and open source. The general method of doing so – using copyright to build commons - Stallman cleverly called “copyleft”.

The copyleft principle obliges developers to pass on the same rights as those they themselves enjoyed in the first place[6]. As we shall see below, this turns on the GPL as a contractual agreement between parties in extension of – as a subclause to - existing copyright. If the rights are not passed on, the freedoms fall away and basic copyright comes into play, leaving the user with no rights of use and no access at all (apart from, of course, the rather minimal rights provided in variants of the so-called fair use clauses, depending on national legal definitions). Thus, the code and the freedoms become inseparable and that principle, much to the dismay of Stallman, has been called the “viral clause”, because the freedoms “spread” with the code like a virus.

In other words, copyleft (“all rights reversed“) transforms the original purpose of copyright (“all rights reserved") to ensure software freedom in perpetuity. While copyright normally requires nothing of the author and allows the user very little, copyleft changes this. Paradoxically, perhaps, the concept of copyleft, as briefly mentioned above, rests on copyright[7]. Using the rights of the author enshrined in copyright, a legally binding contract (the GPL) is entered into between authors and users, where the authors relinquish their exclusive right to their creation (software code) under certain conditions (the software freedoms, as articulated in the GPL) that require the user to release their modified code under the same conditions. That is what is known as the viral clause. If the user breaches that contract (or if the contract under any given legal regime is deemed invalid), the code in question is automatically covered and hence protected by copyright. In other words, to repeat, copyleft does not replace copyright, but transforms it to ensure continued freedom, i.e. access to the code in the future by anyone. Copyleft, then, is simply an additional (viral) clause to copyright, which is based on the exclusive rights of an author to do what she/he sees fit with a given creation, such as sharing it with the world and contribute to commons.

3. The legal basis of the seed licence

Licence agreements regulate contracts between companies, between people or between businesses and individuals. The Open Source Seed licence (OSS licence), following the GPL, differs from traditional licences in that the licensor receives no exclusive rights. Also, the rights and duties of the licensee may be transferred only by way of the same private contract, i.e. the OSS licence.

The licence we have developed is not a specifically regulated type of contract. It contains elements of different types of contracts (rent, lease, purchase, among others) and is thus a "sui generis contract". The OSS licence, under German Civil Law[8], therefore falls under general business terms and conditions (Allgemeine Geschäftsbedingungen, AGB), because it satisfies the conditions of relevant regulation (§ 305 I BGB): it is literally a contract, which is pre-written for general, multiple and unilateral use by one single party, and not individually negotiated.

The basic properties of the OSS licence are that any user (licensee/contractee), free of charge, receives a simple use right on the condition of fulfilling the duty to make available for public use, on the same conditions, any development on or enhancements to the seed/crop that they may have made. That means:

(1) *"Upon the materialisation of the licence agreement, the Licensee will be granted the right to use all the seeds, as he or she has received them, under the terms and conditions of this licence.*

(2) *The seeds may be used for any purpose, and by anyone who accepts the terms and conditions of this licence, in particular also for enhancement.*

(3) *The Licensee may pass on the seeds to others, propagate them, enhance them and disseminate propagated or enhanced seeds (…).*

(4) *The copyleft principle obliges the Licensee to impose the same rights and obligations on the future owners of the seeds, any seeds propagated from the latter or enhancements of the seeds as he or she personally acquired and assumed. Any limitation of the rights in the seeds vis-à-vis third parties going beyond that, in particular any limitation based on statutorily granted special protective rights (plant variety rights, patent rights, trademark rights, copyrights, etc.) is prohibited and illegitimate."*

The complete OSS licence can be found in the annex.

4. The object of protection

Time and again we have asked ourselves what is it that we actually want to protect – is it a variety, a population, a source, or simply the seed? We decided on the term "seed" for the following reasons.

The OSS licence confers use rights together with the material object (seed, crop). Given the transfer of material (seed or other plant material) a contract is entered into, which ensures the mutual, reciprocal rights and duties associated with the material in question, as well as all future developments to that material, in perpetuity. As such, the OSS licence - and its contractual nature - implicitly also pertains to the genetic information contained within the given seed or crop. Possible alternatives to denote the object of protection, then, would be terms such as "biological material" or "(plant) genetic resources", but these are likely less obviously understood by lay people, than "seed" is.

The term “variety”, however, denotes something immaterial and cannot be subject to a material transfer agreement. In this respect, the OSS licence also has a fundamentally different character than the plant variety protection regime. Rights to a variety – i.e. something intangible/immaterial – can only be held by someone who in this variety has intellectual property rights. Such variety protection can be sanctioned by the state, but a variety (immaterial) can only be marketed as seeds (material)[9].

Independently of this, breeders can register as a variety a cultivar that has been OSS licensed and described and named, as long as it complies with the provisions of the German Seed Marketing Act. This may be necessary for the purposes of marketing. But seeds of a registered variety that features in the catalogue of the German Federal Office of Plant Varieties, which does not enjoy plant variety protection (PVP), can be marketed by anyone.

5. Taking note of the licence terms

The OSS licence is a private contract, which means it can come into effect by way of writing, or orally or simply by conduct implying an intent. However, if you want to sell, give away or exchange seeds under the OSS licence, you must – *unambiguously* – disclose the licence conditions of the transfer. Paragraph § 305 II BGB (German Civil Code) states that a user of General Business Terms & Conditions (AGB) - the *licensor* – must expressly point the other party – the *licensee* – to the terms and conditions of the licence and provide the possibility for the licensee to peruse these terms and conditions in order to reasonably comprehend them. In addition, the licensee must agree to their validity.

A so-called "shrink-wrap licence", in which the licence conditions are accepted by tearing the wrapping would probably violate the legal conditions of German general business terms and conditions (AGB), because specific usage requirements for seeds are not (yet) common

practice and therefore cannot be supposed as generally known. Therefore, a shrink-wrap licence is not currently in question.

This means that any transfer is valid only if the licensee is fully aware of the terms and conditions of the licence. The abridged version on the seed packaging – with link to the full, online version - should be sufficient for the acceptance of the terms and conditions. However, all significant terms and conditions of the OSS licence (or contract) must be included in this summary.

This is the abridged version:

> *"By acquiring or opening the packet of these plant seeds you accept, by way of an agreement, the provisions of a licence agreement where no costs shall be incurred to you. You especially undertake not to limit the use of these seeds and their enhancements, for instance by making a claim to plant variety rights or patent rights on the seeds' components. You shall pass on the seeds, and propagations obtained therefrom, to third parties only on the terms and conditions of this licence. You will find the exact licensing provisions inside the packet and at www.opensourceseeds.de/licence. If you do not wish to accept these provisions, you need to refrain from acquiring and using these seeds."*

For professional traders, who for instance sell seeds in small quantities in supermarkets or garden centres, it means that the abridged OSS licence must be printed on the wrapping of the seeds with reference to the full text, online version. However, even a short text is difficult to print on the generally relatively small size of the seed wrapping, which also has to accommodate other product information. This could be solved by using larger-than-usual wrapping, or by adding a flap to the packaging.

For individuals and for farmers and other small actors, it means that they (the licensors) must ensure that a copy of the OSS licence accompanies the materials being transferred; and that they must explicitly inform the recipient (the licensee) of the materials about the terms and conditions of the OSS licence.

6. The Open Source Seed licence and "the breeders' privilege"

The open source seed licence ensures that not only the seed itself is protected, but also that any and all future improvements and developments to the seed remain free of intellectual property rights and thus accessible to anyone. The OSS licence thus instantiates a translation of the copyleft principle – from software to seeds. As copyleft is viral, the licensing results in a chain of contracts, which may branch or fork in various directions. Licensees become licensors: the licensor is always the one who passes on the seed and the licensee the one who receives it.

The OSS licence creates a parallel universe to private plant breeding. The OSS licence, on one hand, and patents and plant variety protection on the other, are mutually exclusive, or incommensurable. And, the licence entails consequences for exchange of seeds between the two sectors. While anyone can use OSS licensed material, no one is allowed to do so if they release their developments based on that material under plant variety or patent protection that incurs a fee for future users. Material released under the OSS licence and any further development to that material, therefore, cannot legally be subjected to exclusive intellectual property rights; and as such is, in effect, not freely available for corporate breeding.

This limitation is seen by some as a violation of the so called “breeder's privilege”. The breeder's privilege, also known as the breeder's exemption, permits breeders the use of existing plant material - otherwise under plant variety protection - without the rightful owner’s consent - for the purposes of developing a new variety. This privilege or exemption is crucial because breeding is a long-term process, and new varieties are based on past breeding. The purpose of the breeder's exemption is therefore to promote breeding research and development by permitting the use of protected varieties for the breeding of new varieties[10].

However, no violation of the breeder's privilege is caused by the OSS licence, because the breeders' privilege is anchored[11] in plant variety protection and is defined as a limitation of the rights of the holder of variety protection. As such, the application of the breeder's privilege concerns varieties under plant variety protection only.

The limitation on the private appropriation of varieties released under the OSS licence is nevertheless controversial. Opponents argue that OSS licensed varieties are unattractive to private companies, which rely on royalties. In turn, then, innovation would decrease, because most breeding companies follow the business model of royalties, which excludes them from using plant genetic material covered by the OSS licence.

But this argument can be refuted in several ways. Historically, agricultural seeds were primarily developed without an associated royalty scheme. In many developing countries plant breeding does mostly not follow the royalties business model, and even in developed countries there are private breeding companies, which do not rely financially on exclusive intellectual property rights.

Big players in the software industry, whose business models were based on royalties/IPR, also argued that in the 1990s. Reality has undermined this position and it is apparent that the coexistence of different business models has not undermined the software industry. Instead, it has grown enormously while incorporating open source software into the mix.

We see, therefore, in the OSS licence a future potential that guarantees the protection of public interest breeding and strengthens the plant genetic commons by increasing the materials available for collective breeding.

7. Importance of the Nagoya Protocol

Unlike the GPL, which is based on copyright, the OSS licence is based on the Nagoya Protocol. The international Nagoya Protocol is a supplementary agreement to the Convention on Biological Diversity (CBD), and was adopted in of 2010. It regulates access to genetic resources and the fair and equitable sharing of benefits arising from their use. The international obligations of the Nagoya Protocol are to be implemented nationally. In May 2014, the EU adopted Council Regulation 511/2014 on measures to comply with the Nagoya Protocol[12] and Germany has adopted corresponding law in November 2015[13].

By contrast to the limited scope of the breeders' privilege, the Nagoya Protocol applies to all plant genetic resources. It allows the sovereign rights-holder of a genetic resource to determine the conditions of their use - by Prior Informed Consent (PIC) and on the basis of Mutually Agreed Terms (MAT). Mandatory documentation, when using plant genetic resources, ensures compliance with these terms and conditions. The provision of the Nagoya Protocol, which states that the rights holder of given plant genetic resources may determine the conditions of their use, supports the OSS licence and makes it legally feasible. In most EU countries, the sovereign rights-holder is usually the one who is in possession of the resource. At the end of the breeding process that is, indeed, the breeder.

The Nagoya Protocol is a strong lever to enforce the OSS licence. Crucial is Article 4 of the EU Regulation; this indicates that the user of a plant genetic resource (seed) must document the time and place of access to that resource; and, where appropriate, also prove "the presence or absence of rights and obligations relating to access and benefit-sharing including rights and obligations regarding subsequent applications and commercialization."

8. Implementation issues

Interest in the OSS licence is great. Especially organic cereal and vegetable breeders, who are considering waiving their rights to plant variety protection, are willing to use the OSS licence for their new varieties and first varieties are already proposed for OSS licensing. Important in this context is that comprehensive protection is only guaranteed if all the material that leaves the breeding facility is covered by the OSS licence. This includes not only the variety itself, but all strains of the breeding line; or in short, all materials produced in the process of breeding the variety in question.

To ensure perpetual protection of OSS licensed varieties - and derived products – it is necessary that no associated plant genetic material is distributed without the OSS licence, which also excludes giving such plant genetic material (seeds or plants) to other breeders, friends and acquaintances without explicitly informing them about the OSS licence and unambiguously stating that they enter into a contractual agreement – or, as it were, they join a commons - if they choose to accept the gift. We are fully aware that this limitation is a barrier to the adoption of the OSS licence, since it challenges existing traditions and conventions.

In principle any breeder could develop an individual licence for the publication of a new variety. That would, however, not be wise, since each incompatible licence text would establish a separate commons. The effort required for the creation of a licence, but even more so in managing the resulting commons, should not to be underestimated. Also, the potential for the public impact of OSS licensed varieties suggests that a coordinated approach is preferable.

We therefore consider that the administration of the OSS licence text and documentation of licensed materials, as well as monitoring and legally handling any infringements, should be carried out by a joint specialised service entity[14], and we have therefore designed the OSS licence for third-party use. This results in a division of labour where breeders are free to focus on the creation of new varieties, while the service entity handles bureaucratic aspects, including legal proceedings, documentation, public relations and user support. To get the ball rolling, AGRECOL should take on the role as the OSS licence service entity for now.

These are the services and tasks that AGRECOL should provide and perform:

- Setting up and maintaining a public database for the documentation of all licensed varieties and materials. This documentation includes a short description of the varieties for the use of farmers, a detailed description for breeders (according to CPVO or UPOV), and the name of the original breeder. Furthermore, it provides information about the availability of a given variety.

- The collection and storage of licensed plant genetic material in the form of seed samples in a "variety index". This material is necessary in case of perceived infringements and other incidents where testing will be necessary.

- Public relations and advertising for the OSS licence.

- Advice for potential users, including legal foundations and considerations of the OSS licence itself, as well as how it works for licensors and licensees.

- Ensure the financing of these services, which are free of cost to users.

This bundling of all tasks related to the management of the OSS licence – or seed commons - gives the open source seed idea momentum. It increases the political impact of the licence, facilitates monitoring licence compliance, and above all, leaves breeders to get on with their work.

Summary

In times when the legal basis for securing private property appears overwhelming and while commons hardly enjoy any legal protection, an open source inspired licence was developed which, resting on the Nagoya Protocol, legally protects seeds (and other plant material) as a common good.

The conceptual basis has been worked out: licensing of new varieties and breeding generally create common goods and, because the licence is viral, the commons created by these goods expand through use and development.

Nevertheless, there is an internal contradiction that may inhibit rapid acceptance and wide implementation of the concept: the freedom of seeds is achieved by prohibition - a prohibition of privatisation. That begs the question: Can a positive message be disseminated by way of a prohibition?

Additionally, the licence requires extra effort, is bureaucratic and requires the change of values and habits.

Hence, we suggest, it will be necessary to involve a group of pioneer breeders to determine – on the basis of their expertise and experiences – whether the conceptualised licensing regime is resilient and through their engagement reach a critical mass of users and developers. Simultaneously, the development of a broad acceptance along the value chain of breeders, producers and consumers require the cooperation of researchers, NGOs and end-users to form a lively and successful seed commons.

We currently see no alternative to intellectual property rights, except legal protection of common goods. In the long term, however, we hope that socio-cultural development towards a change of values, which will render superfluous the current – and exclusive - intellectual property rights regime and also the need for open source licensing.

Annex: Open Source Seed (OSS) licence[15] – licence agreement

Preamble

By acquiring and using the seeds purchased under the terms and conditions of this licence agreement you, as the Licensee, accept the provisions of this licence agreement. The purpose of these provisions is the free use of seeds. The Licensor is the natural or legal person who hands over these seeds to you. The Beneficiary of the licence agreement is AGRECOL e.V., a registered association.

In order to achieve the objective of free use, enhancement, cultivation, dissemination and propagation of seeds, without there being a monopoly taken advantage of by individuals, any use of the seeds is only permissible in accordance with these licensing provisions. As a Licensee, you undertake to limit the use of these seeds or the propagation of them and enhancements vis-à-vis third parties exclusively to the manner stipulated in this licence. You will in particular refrain from making any claim to plant variety rights, patent rights or any other statutorily possible exclusivity rights of the seeds or their propagation and enhancements.

Simultaneously, the licensing provisions oblige you, in turn, to subject any seeds or enhancements of the seeds obtained from the present seeds to these licensing provisions, and only to pass them on to third parties on these conditions ("copyleft"). Should you infringe the obligations arising from this licence agreement, you will forfeit your rights of use of the seeds or any seeds or enhancements obtained therefrom. In addition, the Beneficiary shall, in such cases, be entitled to require you to cease and desist and make a payment, as stipulated in this agreement (agreement to the benefit of third parties).

1. Definitions

The following definitions apply to this licence:

1.1 *Seeds:* Seeds within the meaning of this agreement, shall mean, dormant generative reproductive organs, such as seeds, fruits, pseudo-fruits, fruit clusters or parts thereof, as well as any vegetative plant organs from which whole plants can be generated – by whatever method –, as well as pollen, and all informational components therein, which have in each case been placed on the market under the terms and conditions contained in this licence or has been obtained from such seeds through propagation or has been enhanced.

1.2 *Propagation:* Propagation shall mean any type of reproduction, i.e. the new or further generation of seeds. Propagation shall also include technical methods of extracting genetic information for the purpose of generating seeds with certain characteristics, including any methods that are unknown today.

1.3 *Placing on the market*: The offering, keeping in stock for distribution, keeping for sale, and any handing over of seeds to another party.

1.4 *Enhancements:* Enhancements shall mean culture or breeding of new plants, in regard to which these seeds have, under this licence agreement, been involved, at least one point, in the course of the development – regardless of whether such enhancements concern varieties, populations or other plant groupings or individual plants or parts of plants.

1.5 The *copyleft* principle: obliges all future plant growers to grant users of their enhancements the same rights as those that they have enjoyed themselves.

1.6 *Licensor:* The previous owner of the seeds, who is rightfully handing them over to the Licensee under the terms of this License, conferring the rights of use of the seeds according to Article 3.

1.7 *Licensee:* Anyone who takes possession of or utilises the seeds in accordance with these licensing provisions.

1.8 *Beneficiary:* AGRECOL e.V., Hauptstr. 15, 88379 Guggenhausen

2. Conclusion of the agreement

(1) With these licensing provisions, the Licensor declares vis-à-vis everyone that she or he is making an offer to conclude a licence agreement on the granting of rights of the use of the seeds in accordance with the following provisions. The agreement shall materialise once the Licensee acquires the seeds, or otherwise obtains them with the consent of the prior owner, however at the latest once he or she opens the package of seeds. The declaration of acceptance does not need to be received by the Licensor.

(2) Upon concluding the licence agreement, the Licensor hereby assigns his or her rights arising from the licence agreement, in particular the cease and desist rights and compensation rights for damage in accordance with Article 6, to the Beneficiary.

(3) This licence agreement is to be understood as a contract under civil law. It shall be deemed to have been accepted as being legally mandatory by all Parties, from the moment of acquiring the seeds or opening the packet, once the Licensee begins to make use of the seeds, even if the Licensee contests the terms and conditions of the licence agreement.

3. Scope of the licence rights

(1) Upon the materialisation of the licence agreement, the Licensee will be granted the right to use all the seeds, as he or she has received them, under the terms and conditions of this licence.

(2) The seeds may be used for any purpose, and by anyone who accepts the terms and conditions of this licence, in particular also for enhancement.

(3) The Licensee may pass on the seeds to others, propagate them, enhance them and disseminate propagated or enhanced seeds, however only on the condition that he or she provides a copy of this licence agreement to all other parties to whom he or she disseminates such seeds, which will also legally bind any third parties to this licence agreement, and provides the Beneficiary, with evidence of having done so upon request. This legal binding of said parties may be carried out in writing or verbally, or by way of an implicit declaration of consent on the part of such third party. Enhancements are, after being disseminated, to be regarded as "seeds" within the meaning of this licence.

(4) The copyleft principle obliges the Licensee to impose the same rights and obligations on the future owners of the seeds, any seeds propagated from the latter or enhancements of the seeds as he or she personally acquired and assumed. Any limitation of the rights in the seeds vis-à-vis third parties going beyond that, in particular any limitation based on statutorily granted special protective rights (plant variety rights, patent rights, trademark rights, copyrights, etc.) is prohibited and illegitimate.

4. Plant material index

(1) The Beneficiary may provide its own plant material index, in which all groupings of seeds (identified according to characterization criteria) and their enhancements are included. Any enhancements undertaken by the Licensee have to be provided to the Beneficiary in the form of a viable and propagatable seed sample for incorporation into the plant material index.

(2) The plant material index will be published by the Beneficiary on its website once it has been prepared.

(3) The use of any varieties and enhancements that are included in this plant material index may not be limited in any way other than through the provisions of this licence agreement.

(4) The origin and properties of the material will be published by the Beneficiary in the plant material index, and can be reviewed there at any time.

5. Rights of third parties and governmental prohibitions

Should the Licensee be obliged to deviate from these licensing provisions, based on rights of third parties or governmental prohibitions, in whole or in part, when utilising the seeds, he or she may only use the seeds and propagations thereof for personal, non-commercial purposes.

6. Lapse of the rights upon infringing the licensing provisions

(1) Should the Licensee infringe these licensing provisions, his or her rights of use of the seeds or their enhancements will lapse immediately. A claim may in particular be made against the Licensee by the Beneficiary, to ceasing and desisting from disseminating the seeds, propagating the seeds or enhancing the seeds as well as to compensate damages.

(2) The expiry of the rights of use in accordance with paragraph 1 shall not have any influence upon the rights of other users, as long as the latter do not infringe the licensing provisions themselves.

7. Applicable law, place of jurisdiction, any other provisions

(1) These licensing provisions shall be subject to German Law.

(2) Should one of the above clauses transpire to be invalid, it shall not affect the validity of the remainder of these licensing provisions.

(3) Should the Licensee be a trader, legal person under public law or special public law funds, the place of jurisdiction shall be Berlin.

(4) The Beneficiary shall be entitled to assign its rights arising from this agreement in writing to third parties at any time.

(5) Should one of the provisions of this licence agreement be or become invalid, ineffective or unenforceable, this shall not affect the validity of the remaining licensing provisions. Rather, the provision concerned shall be replaced by a valid and effective provision which comes closest to the economic intention of the contracting parties, in particular the objectives of the licence agreement laid down in the recitals.

Appendix to the Open Source Seed (OSS) licence

In order to be able to provide anyone with the rights to freely use the seeds in accordance with these licensing provisions, every time the seeds are passed on the following or a substantially equivalent reference to the applicability of this licence and its source is to be displayed clearly and attached.

Open Source Seed licence – text for the package

Seeds with the same rights and obligations for all

By acquiring or opening the packet of these plant seeds you accept, by way of an agreement, the provisions of a licence agreement where no costs shall be incurred to you. You especially undertake not to limit the use of these seeds and their enhancements, for instance by making a claim to plant variety rights or patent rights on the seeds' components. You shall pass on the seeds, and propagations obtained therefrom, to third parties only on the terms and conditions of this licence. You will find the exact licensing provisions inside the packet and at www.opensourceseeds.de/licence. If you do not wish to accept these provisions, you need to refrain from acquiring and using these seeds.

19th of July 2016

Citations and annotations

1 Crow, J.F. 1998. 90 Years Ago: The Beginning of Hybrid Maize. GENETICS, March 1, 1998 vol. 148 no. 3923-928.

2 Personal communication with the Director of BDP (Bundesverband Deutscher Pflanzenzüchter)

3 Kloppenburg, J. 2010. Impeding Dispossession, Enabling Repossession: Biological Open Source and the Recovery of Seed Sovereignty. Journal of Agrarian Change. Vol. 10, No 3. pp. 367-388.

4 Freeware is not Free Software. Even though it is free of cost, it is not free because the source code is unknown and the software therefore cannot be modified.

5 Helfrich, S., R. Kuhlen, W. Sachs, C. Siefkes. 2009. Gemeingüter – Wohlstand durch Teilen. Heinrich Böll Stiftung.

6 ibid.

7 The original author of a work holds the exclusive right to decide what can be done with their original work. Copyright ensures this right of decision making. By default, copyright is an exclusive right, but included in this exclusive right is of course the right to decide on inclusion. You can prevent others from copying your work, or you can enable others to access and use it. The free Software commons is based on each user and developer agreeing to use their exclusive right to include.

8 District Court of Munich I, Judgement of 19/05/2004: 21 0 6123/04; District Court of Frankfurt am Main, Judgement of 06/09/2006: 2-06 O 224/06.

9 Of course the right in a protected variety can also be traded. Such a right, however, remains in the immaterial realm and is distinct from a living plant or seed.

10 Keukenschrijver, A. 2001. Sortenschutzrecht unter Berücksichtigung der Verordnung Nr. 2100(94 (EG) des Rates über den gemeinschaftlichen Sortenschutz in: H. Leßmann und G. Würtemberger. 2009. Deutsches Sortenschutzrecht. Nomos Verlag.

11 The “breeder’s privilege” is articulated in § 10a Abs. 1 Nr. 3 SortSchG.

12 Official Journal of the European Union, 20.5.2014 / L 150/5: Regulation (EU) No 511/2014 of the European Parliament and of the Council of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union Text with EEA relevance.

13 The German implementation: Bundesrat (2015): Gesetz zur Umsetzung der Verpflichtungen nach dem Nagoya- Protokoll, zur Durchführung der Verordnung (EU) Nr. 511/2014 und zur Änderung des Patentgesetzes sowie zur Änderung des Umweltauditgesetzes. Beschluss des Bundesrates. Drucksache 473/15 vom 6.11.15.

14 Also in the software industry institutions, such as the Free Software Foundation and the Open Source Institute, handle the often complex legal affairs, so that individual developers are free to code knowing that their community is well managed.

15 The licence has been elaborated by Michael Pilz of the law firm Freimüller, Oberreder and Pilz, Vienna.

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