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Chapter 28

Seed

Commodification, decommodification and commoning

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Abstract

The chapter aims to re-contextualize the polarity between the commodification and decommodification of seeds, highlighting reactions and resistances to market pressures. It begins by discussing the emergence of the seed market and its main drivers, such as the biotechnological revolution, intellectual property rights, and the consolidation of the seed industry. The chapter then emphasizes that discontent with changes in agricultural production and economic integration has primarily led to discussions on so-called market failures rather than restricting market transactions. The preservation of public goods, specifically innovation and crop diversity, through the handling of purportedly market failures, has remained a key focus. Additionally, the chapter explores proposals advocating for the radical decommodification of seeds. This perspective aligns with research in ethics and economics on the concept of noxious markets. By examining the ethical and economic aspects of seeds as commodities, the exploration of decommodification (through "open source" and commons-based initiatives) aims to challenge the prevailing market-driven approach to seed production and seed provisioning. The chapter closes with a discussion on the coexistence between market society and peasant farming, examining the feasibility and desirability of maintaining control over innovations and agricultural production models while resisting the complete commodification of seeds.

Word count: 9080

Introduction

We could start with a paradox: a growing body of literature that draws on the ontological turn in anthropology emphasizes the *agency* of non-humans, including seeds (Congretel and Pinton, 2020). And yet, more than ever, one might say, seeds are hardly perceived as anything other than a resource base, a production tool or an input for food and agriculture production. Hence, this resource base is no longer “self-controlled” (Douwe van der Ploeg, 2010, p. 4) nor supplied from circuits of reproduction that are “located *outside* of the agricultural markets.” (Douwe van der Ploeg, 2010, p. 9) On the contrary, it depends almost entirely on the *market*.

What does that mean precisely? That the market has completely occupied all spaces where seeds are exchanged. As for farming, this means that over time small farmers and peasants have been integrated into “fully working markets” for the provisioning of seeds (Douwe van der Ploeg, 2010, pp. 9–10). This change has implied a transfiguration of seeds. Seeds do not pre-exist the market, in the sense that, by their nature, they “[...] are not created in a profit-oriented production process subject to the competitive pressures of market forces.” (Peukert, 2019, p. 1175) In other words, they are not actively and originally “produced for sale on the market.” (Polanyi, 2001, p. 75)

The transfiguration process has constructed seeds institutionally as a commodity by means of complex technical and legal devices, notably intellectual property rights (IPRs) (Tordjman, 2008, p. 1341). This is what Polanyi was referring to when he said of the land (i.e., the “natural environment”), labour and money that they are “fictitious” or “false” commodities (as opposed to “genuine commodities”), built at the price of erasing the ties of reciprocity and redistribution between humans, on the one hand, and between humans and non-humans, on the other (Polanyi, 1944, p. 76). The ties between landraces, peasant seeds, peasants, land and *terroirs*, were unravelled precisely at the end of the 20th century just as Mendel’s laws were being rediscovered and Soviet and European genetic science was becoming triumphant: nature became a “universal store of genes” (Bonneuil, 2019). This then led to the “disqualification of farmers’ landraces as *obsolete* and *unproductive*” (Bonneuil, 2019, p. 3 — emphasis in the original). These were concurrently re-labelled as “gene stores.” (ibid.)

The historical context is important: it allows us to grasp that by “seed” we should understand not only all “plant propagating materials”¹ and resulting plants, i.e., “farmers’ varieties” – also called “landraces” or “folk varieties” (Jarvis *et al.* 2016, p. 1)² – or, on the professional plant breeders’ side, elite or modern varieties or cultivars; but also “plant genetic resources for food and agriculture”, “genetic material”, “germplasm” or “genetic resources”. Indeed, if we want to take account of seed market(s) in all its/their complexity, i.e. including the entire value chain, it is necessary to pay attention to the way genetic resources are today constructed as commodities that circulate on the international germplasm market, in addition to being “technical objects”, i.e. material entities that have been given stable and reliable properties through their entrenchment “in a wider field of epistemic practices and material cultures, including instruments, inscription devices, model organisms” and so on (Rheinberger, 1997, p. 29).

The size of the seed market gives an idea of the scale of the phenomenon at play: USD \$52 billion in 2014 for the global commercial seed market (which includes public commercial varieties) (OECD, 2018, p. 25), and a cross-border seed trade worth USD \$10 billion according to the statistics of the International Seed Federation (OECD, 2018, p. 30). At the same time, if we distinguish between peasant farming and the “opposite forms, entrepreneurial and capitalist farming” (Douwe van der Ploeg, 2010, n. 1, p. 1), a non-negligible part of those participating in the agricultural production process have not been *completely* integrated into the seed market. This applies to the Global South, but

¹ We are referring to true seeds, but also roots, tubers, bulbs, rhizomes, seedlings, propagules. Seeds differ from grain by their use and purpose. Grain is consumed by humans and animals and transformed into oils, biofuels or flours, whilst seeds are intended to produce plants.

² Farmers’ varieties and landraces are populations of a cultivated crop that are often genetically diverse. They have not undergone formal crop improvement procedures, but they are produced in using the traditional method of crossing and then selection of offspring in several generations.

it is also valid for many industrialized countries where a phenomenon of re-peasantization (i.e. the emergence of a new peasantry) has been seen (van der Ploeg, 2018). In concrete terms, a substantial portion of peasants are still sourcing seeds through farmer seed networks. These networks “transfer seed [...] from domesticated or undomesticated plants via farmer-to-farmer gifting, swapping, bartering, or purchase, and also via trading or sale which occurs outside of the commercial seed sector and formal regulation.” (Coomes *et al.*, 2015, p. 42)

These are a reminder that seed exchanges have long been organised through other forms of economic integration, in particular institutional reciprocal gift or market relations but tightly enmeshed in non-economic institutions (e.g., community-based, religious, professional) (Polanyi, 1944). Although non-negligible in the Global North, the place held by these farmer seed networks is still considerable in the Global South where estimates suggest that 80-90% of seeds are sourced through them (Coomes *et al.*, 2015, p. 43). But these networks now only represent, as it were, pockets of resistance or beleaguered citadels: modern agriculture, with its specialization of tasks (the breeder breeds “elite” varieties and the farmer plants and harvests them) and the increasing use of artificial growth factors and technology for precision agriculture, is inseparable from market relations as the only mode of economic exchanges, and their progression seems inexorable.

For their proponents, these changes in the nature of agricultural production and economic integration are the only possible way forward. They believe that only through the coupling of modern agriculture and market tools we will be able to meet the needs of increased yield and nutritional value of crops and ensure the sustainability of agricultural systems in times of climate change.

Depending on whether these promises appear likely to be fulfilled or not, another paradox arises: more and more, the peasantry of the southern hemisphere is perceived as a credible model of more resilient agriculture. Local and sustainable peasants’ practices are thought to cope better with climate change and the management of crop genetic diversity, whose paramount importance in terms of plant breeding, food security, nutrition and quite simply our (viable) life on earth (IPBES, 2019, p. 42) is no longer challenged. In a few decades, these systems have become the standard bearers of “transnational agrarian movements” (Claeys and Peschard, 2020), places of struggle and “laboratories” reflecting on de-commodification. The right to seeds (Haugen, 2020; Le Teno *et al.*, 2022), as now enshrined in the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP), and the concept of “seed sovereignty” (Kloppenborg, 2010; O’Grady Walshe, 2020), reflect this reverse dynamic that reminds us that seeds are “the irreducible core of agricultural production.” (Kloppenborg, 2014, p. 1225) More than just a commonplace commodity, seeds involve complex ties to territory, cultural heritage, identity and the autonomy of populations (Howard, 2010; Toledo, 1990) – ties that are essential, even though they have been rendered totally invisible, if not destroyed, by market society.

The rest of this chapter attempts to re-contextualise what is today a polarity between commodification and de-commodification of seeds. It should be repeated at this point that this polarity is primarily the result of reactions or resistances to the penetration of market pressure, what the anthropologist Stephen Gudeman calls “debasement”, i.e. the loss of all that, immaterial (ethnicity, religion) and material (communal land), which ensures group reproduction (Gudeman, 2016, pp. 17–22). It is then a question of creating distance from market relations. At the same time, this polarity has a heuristic value: it signals everything that the market is incapable of apprehending or everything that it destroys when certain resources, labour and social relations are joined with capital. Finally, the polarity raises the issue of coexistence between market society and peasant farming and farmers seed networks, sometimes judged impossible (because, as the argument goes, the market ends up destroying the commons) (Jodha, 1985), sometimes judged possible (Sengupta, 1995) and even desirable, as when, for example, plant breeders use commons-based innovations in order to retain control over their innovations and their model of agriculture production without giving up commodification. The chapter begins with an account of how the seed market came into being and its main drivers: the biotechnological revolution, intellectual property and the consolidation of the seed industry. In a

second section, the chapter shows how the debate has been largely focused on market failures – and not on restricting market transactions – as a way to keep up certain public goods, primarily innovation and crop diversity. The third section explores proposals to radically decommodify seeds, a more recent move that speaks more directly to research in ethics and economics on noxious markets.

Drivers of Seed Commodification

How have seeds, as the nexus of agricultural production activity and part of complex “biocultural” networks (Girard *et al.*, 2022) left behind a “moral” economic model (Rogan, 2019) and become integrated into a market society in which they are no more than a commodity, defined only by their price?

What an abundant literature (see, e.g., Rangnekar, 1996; Bonneuil and Thomas, 2009) now demonstrates is that the commodification of seed has relied mainly on the use of industrial property. This sweeping intellectual property-driven commodification of seed has raised particular difficulties linked to the structure of the global market, which is highly concentrated.

The Biotech Revolution and Patentability

The conceptualisation of seed as a commodity has been constructed by a set of technical, political and legal mechanisms. The classification of seed as a “genetic resource” was the first step, cutting the age-old ties with the land and the peasantry. Additionally, the coupling between technical standards and regulation of the production, commercialization and use of seeds and varieties has been decisive. Whether the Soviet Union, the German National Socialist regime or later a large part of Europe, all States have supported and imposed agricultural modernisation and productivism, thanks to a new division of labour, the specialization of activities and control over what peasants could plant (Pistorius and Wijk, 1999, p. 62; Bonneuil, 2019, p. 5). The catalogue of cultivated plants played a key role in the standardization necessary to this new division of labour by imposing the model of the distinct, uniform and stable (DUS) variety – a “fixed” variety cultivated in highly controlled environments (by mechanization, irrigation and the use of inputs). As an extra step indispensable to commodification, privatization was made possible in Europe by the International Convention for the Protection of New Varieties of Plants of 2 December 1961 (UPOV Convention, revised in 1972, 1978 and 1991). This Convention endorses the DUS criteria (Rangnekar, 2000; Llewelyn and Adcock, 2006) and guarantees a monopoly of exploitation to plant breeders that develop high-yielding elite varieties.

The United States, meanwhile, had already adopted the Plant Patent Act in 1930 for asexually reproducing varieties (fruits, nut trees and ornamental plants), but it had not been much used by the horticultural industry. A different path to intellectual property was initially chosen: hybrid varieties, which offer a technology lock-in and dispense with the need to rely on the law. Indeed, the progenies of the first generation (F1 hybrids) benefit from the heterosis effect and show excellent performance. However, genetic heterogeneity is created from the second generation onwards, and the associated loss of yield obliges farmers to buy seeds every season (Pistorius and Wijk, 1999, pp. 66–67). The fact remains that hybrids are no silver bullet: they can only be produced for a limited number of field crops – and breeders have therefore sought legal solutions, which they obtained with the passing of the Plant Variety Protection Act 1970 (PVPA – USC 2402 §7), to offer a form of protection similar to the plant breeders’ rights (PBRs below) under UPOV (Llewelyn and Adcock, 2006, p. 81).³

Since the 1980s, the commodification of seeds has been underpinned by the considerable and rapid movement towards IP expansion in plant breeding. It followed the *Diamond v. Chakrabarty* ruling (447 U.S. 303 (1980)) by which the United States Supreme Court acknowledged the patentability of a bacterium, thereby expanding the utility patent (Calvert and Joly 2011) to include living material.

³ In 1994, the PVPA was brought into line with the 1991 UPOV Convention.

Unsurprisingly, the patentability of a variety of maize was recognized five years later by the United States Patent and Trademark Office (USPTO) (*Ex parte Hibberd* (227, USPQ 443 (1985)) (Llewelyn and Adcock, 2006, p. 86).

In Europe, whether under the European Patent Convention (EPC 1973, last revised in 2000) or Directive 98/44/EC of 6 July 1998 on the legal protection of biotechnological inventions, plant varieties are covered exclusively by PBRs and are not patentable (in the United States, conversely, a variety can be covered by both a PBR and a utility patent). On the other hand, driven by Article 27.1 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS, 1995), which opens the patent up to any invention in any field of technology, the scope of the patent has quickly expanded to take in plant innovation. In addition to DNA sequences or partial sequences, as well as processes for the production of plants, transgenic plants whose genome expresses a transgene liable to be integrated into an indefinite number of varieties can also be patented, as can “native genes”, i.e. traits identified in nature (e.g. taste, salt tolerance, resistance), and then introduced into a target variety by means of essentially biological processes for obtaining plants, accelerated by modern methods (such as marker-assisted selection) (Godt, 2018). These patents, validated by the European Patent Office (EPO) (Girard, 2015), were considered so obstructive (“blocking” patents) that they led to an outcry in civil society, followed by a reaction at the European Parliament and the Commission, which finally led the Administrative Council of the EPO⁴, and the Enlarged Board of Appeals itself⁵, to exclude the patentability of plants exclusively obtained by means of an essentially biological process. PBRs, still widely used by medium-sized plant breeders, have been reinforced in response to the extension of the patent (Sanderson, 2017, p. 205).

Consolidation in the Global Seed Industry

Today, IP is mainly used as a strategic tool. For example, a portfolio of patents may serve as a “bargaining chip” to acquire strategic technologies (Kock, 2021, p. 3), whereby company A negotiates at length with company B for the use of the patented gene C that the latter owns, in exchange for the use of technology D on which the former has a patent. This creates particular difficulties on the seed market, where operators are of different sizes, with profits consolidated around a few operators who are the only ones able to settle on the conditions of exploitation of their respective patents through cross-licensing agreements, (Schenkelaars *et al.*, 2011, p. 79), thereby creating real barriers to entering the market (Howard, 2015).

Indeed, the main problem remains the exceptional level of concentration in the seed industry, which is dominated by a handful of multinationals from the petrochemical sector (e.g. Monsanto-Bayer) (Howard, 2009). Considering only the agrochemical sector, the figures speak for themselves. Following the recent raft of mergers involving ChemChina-Syngenta, Dow-DuPont (now Corteva) and Monsanto-Bayer (now Bayer) CropScience (Bonny, 2017), these three firms now control 70% of the sales in this sector (Hendrickson *et al.*, 2017, p. 18).

Because of the world-wide oligopoly that has been dominating the seed market for quite some time, but perhaps also because of the market-centred approach towards agricultural production and seed provisioning that has been little questioned so far, discussions on production of and access to public goods have been able to emerge, but they have mainly remained focused on market failures and on how to overcome these failures.

Public and Private Responses to Market Failures

⁴ EPO, Administrative Council CA/D 6/17 of 29.06.2017 (OJ EPO 2017, A56).

⁵ EPO, EBA, 14 May 2020, G 0003/19 (Pepper (follow-up to Tomatoes II and Broccoli II)).

Whilst technological and biotechnological developments continue unabated in plant breeding, and with them the extension of the patent system (Metzger and Zech, 2020), intellectual property (especially in Africa: De Jonge and Munyi, 2016) and the rules on plant variety registration and seed certification keep expanding geographically (Herpers *et al.*, 2017). This expansion is now spreading to countries where farmer seed systems remain the primary source of seeds (McGuire and Sperling, 2016), compromising further the provision of public goods (defined by their nonexcludability and nonrivalry: see, Hippel and Krogh, 2003) such as crop genetic diversity. There also remains the overall problem of the shift from agricultural research as a public good to the private investment model of innovation relying on the granting of temporary monopoly privileges. The growing number of, and overlaps between, intellectual property rights has tended to stifle research, and intellectual property-driven innovation has mainly resulted in orienting “research and development towards meeting the needs of farmers in rich countries, while the needs of poor farmers in developing countries have been comparatively neglected” (De Schutter, 2009, para. 34, pointing to the problem of “orphan crops”). Calls to remake innovation a public good via a different model of innovation (in which the state would play a central role) are increasing.

At minimum, dissatisfaction with the way the seed market operates is widely shared and, even if the arguments put forward vary from one actor to another, they all point to market failures. Curiously enough, until recently there have been very few policy or private initiatives (contractual solutions) that have questioned the use and/or reach of the market in the field of seeds. One might expect such challenges given the harmful outcomes marketization can have on biodiversity or food security, and given the extreme vulnerability that may befall one of the parties to the negotiation (think of the contracts for access to genetic resources and traditional knowledge held by indigenous peoples: Bavikatte *et al.*, 2015).

In the following section we present two examples, one relating to biodiversity, the other to innovation, which highlight the interventions of state actors on the one hand, and the private sector on the other.

Responding to Crop Genetic Erosion

There is a consensus that the “widespread losses of landrace diversity over the past century, continuing to the present” is due to their replacement by elite varieties (Khoury *et al.*, 2021, p. 9). Indeed, the “extension and expansion of formal seed systems” (*ibid.*) has enabled this substantial replacement, itself backed by intellectual property law and seed regulations which have been deployed in the Global South, and now goes as far as prohibiting and even criminalizing the exchange of non-certified seeds between peasants (Wattmeh, 2016).

As early as the 1960s, the risks linked to the rapid dissemination of high-yield varieties (the “modernization bottleneck” – Louwaars, 2018, p. 2) were perceived by breeders and geneticists, who eventually managed to convince the international community to develop an international *ex situ* conservation network of crop genetic resources (Kloppenborg, 2005). Very favourable to the gene-poor North, the regime encountered resistance in the 1980s from the Global South, where countries were looking to take back control over their resources. After a failed attempt to adopt an international framework which would have placed all crop genetic resources (including those protected by intellectual property rights) under the “common heritage of mankind” regime (Mgbeoji, 2003), the principle of each State’s sovereign right to exploit its resources was re-asserted in the Convention on Biological Diversity adopted in Rio de Janeiro in 1992.

This “appropriation” of resources by States was intended to counterbalance intellectual property rights on products developed using those resources. In reality, the “enclosure” validated by the Convention on Biological Diversity (Sievers-Glotzbach and Christinck, 2021) introduces a market based on “Access and Benefit-Sharing” – i.e. the conservation of genetic resources was now to depend on their

use (Pistorius, 1997, p. 95).⁶ Within this framework, the Global North retains access to resources in the intertropical zone, and countries of the South can expect incomes generated by intellectual property rights on “biodiscoveries” or “technology-for-nature swaps”⁷ (Sedjo, 1992) to better protect nature while hoping to get a foothold on the path to “modernization.”

At the same time, the international community recognized the high degree of crop interdependency between States and pleaded for a regime exempting crop genetic resources from the complex mechanism set up by the Convention on Biological Diversity (Khoury *et al.*, 2015). Thus, the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture (Seed Treaty, 2001) established a virtual gene pool of plant genetic resources for food and agriculture to which the contracting parties have facilitated access via a Standard Material Transfer Agreement, i.e. a standardized contract between a supplier and a user of material (Frison, 2018, p. 167). Initially inspired by Global Public Goods theory (Kaul *et al.*, 1999)⁸, the Multilateral System is today described as a global seed commons (Frison, 2018). Furthermore, recognizing decades of research on on-farm conservation, the Seed treaty re-asserts the need to “[p]romote or support, as appropriate, farmers and local communities’ efforts to manage and conserve on-farm their [plant genetic resources for food and agriculture]” (Art. 5.1(c)). The aim of the Benefit-Sharing Fund, in part funded by the benefits arising from commercialization of innovations protected by intellectual property rights which incorporate material from the Multilateral System, is to support these on-farm conservation activities in parallel to “farmers’ rights.” (Art. 9) The implementation of the Benefit-Sharing Fund has, however, been disappointing: the funds are very limited and not sufficient to widely sustain projects “designed to support farmers and breeders in adapting crops to changing needs and demands in the face of climate change.” (Tsioumani, 2020, p. 18) As for farmers’ rights (in particular Article 9, para. 3, which refers to farmers’ rights to save, use, exchange and sell farm-saved seed/propagating material), their implementation depends entirely on national laws. Although it reports some progress, the first inventory of measures taken at national level (IT/GB-9/AHTEG-FR-3/20/2 (June 2020)) reveals some problematic biases: perpetuation of the commercial logic through intellectual property rights (Peschard, 2017); attempts to set up institutional steering of on-farm conservation through institutional incentives (Girard and Frison, 2021); and continuation of projects to “modernise” peasant communities, in particular through market-based incentives (see Jarvis *et al.*, 2011).

In the final analysis, apart perhaps from the “commons” approach underpinning the Seed treaty, the trajectory of seed remains largely defined by the disembedded market, disregarding the biocultural embeddedness of seeds. For most people involved in mainstream commercial agriculture, it is inconceivable to extract seeds from the market, as non-tradable goods, as if pricing a variety was a *sine qua non* for any successful conservation strategy.

Circumventing Intellectual Property Enclosure

For over twenty years, the role of intellectual property in plant innovation has been subject to close attention due to its incremental nature (Luby *et al.* 2015, p. 2481). Plant breeding is, indeed “a canonical example of sequential innovation, where continued progress may depend on the maintenance of a robust public domain (as some would put it) or at least on a set of carefully articulated and secure carve-outs from intellectual property protection.” (Janis *et al.*, 2014, para. 1.03) At the same time, these “carve-outs” have been challenged by the incursion and extension of the patent system. For example, patent law does not allow for “breeder’s exemption” – and yet that is

⁶ On land enclosures, see chapters by Crétois and Larrère in this volume.

⁷ UNEP/Bio.Div.3/6 20 June 1990, para. 9; taken from UNEP/Bio.Div.3/Inf.4, para. 40.

⁸ Non-rivalrous and non-excludable (even though they can become), these goods are public in consumption and above all in provision. Importantly, they are of nearly universal reach, *i.e.* costs and benefits are shared and enjoyed globally.

what enables breeders to use a protected variety, without the consent of the initial breeder, as a source of initial variation to obtain a new variety and to market it.

Today there is growing scientific consensus that patents stifle innovation (Halpert and Chappell, 2017, p. 4). Importantly, the development of “patent thickets” (the overlapping of intellectual property rights) (Heller and Eisenberg, 1998) has been described as the cause of a slowdown in innovation in certain crop sectors (Graff *et al.*, 2004). And yet, to date, the public authorities have done little or nothing, except to include extended research exceptions in the unitary patent⁹ and some domestic legislation (Prifti, 2015), but these measures are in no way to be equated with the breeder’s exemption. On this point, private actors have been left to fend for themselves¹⁰ in a context where, with the development of genome editing techniques and the prospect of increasing trait stacking (the combination of different traits into a single plant to provide a response for a multitude of functions) the risk of new and formidable “patent thickets” looms large (Kock, 2021). This is a major issue, including for major players, as all breeders now run the risk of having to negotiate increasingly complex licensing agreements (Egelie *et al.*, 2016; Gray and Spruill, 2017) and being sued for patent infringement (Kock, 2021, p. 6).

Various proposals have been suggested and even implemented to re-establish the “freedom to operate”, such as “patent pools” or “patent clearing houses” (Girard and Frison, 2018; Kock and ten Have, 2016). Without challenging the genuine intent behind these proposals, they are stopgap measures at best because they do not proceed from the right question: given the negative outcomes the market may have on biodiversity, food security or the ability to innovate (whatever the meaning of this term) or given the extreme vulnerability that may beset one of transacting parties, should one not prioritize the elimination of the market or make the working out of its proper range a priority? Might not a first workable solution be to carry out a far-reaching overhaul of the IP system (Metzger and Zech, 2020), or even to abandon the patent altogether (Kock, 2021)? It is precisely this kind of questioning, echoing the work of commodification scholars, that forms the background to the following reflections on decommodification.

Decommodification

Decommodifying through Commoning

The foregoing shows that there is a systemic problem in the way the disembedded market reduces seeds to raw materials for breeding, as a standardized input. In relation to literature on commodification and ethics, the argument connects with some moral objections raised against so-called “noxious markets.” Misallocations and rights violations (e.g., the right to food) are certainly at stake. But criticism of the commodification of seed also echoes what have been called “semiotic objections” to markets: “to engage in a market in some good or service X is a form of symbolic expression that communicates the wrong motive, or the wrong attitude toward X, or expresses an attitude that is incompatible with the intrinsic dignity of X, or would show disrespect or irreverence for some practice, custom, belief, or relationship with which X is associated.” (Brennan and Jaworski, 2015, p. 1055)

Ongoing counter-movements proposing conceptual and political-legal innovations that seek to re-embed the seed market system into cultural and social fabrics illustrates this wide range of ethical objections to market and their meaning for seeds. Importantly, agrarian movements (Claeys and Peschard, 2020) aspire to bring about change in agricultural production: the objective is decommodification, understood to include all of the innovations aiming to free the “resource base” of

⁹ Agreement on a Unified Patent Court, *OJ C 175*, 20.6.2013, p. 1–40, Art. 27(c).

¹⁰ Even though it must be said that, so far, it has been the big players’ interest (if not strategy) to ward off public interventions.

agriculture from its virtually complete dependency on the market. This liberation emphasises the noneconomic motives for exchanging seeds and their crucial role in the subsistence of populations, group reproduction and the protection of agroecosystems. By re-establishing agriculture as “co-production” (Douwe van der Ploeg, 2010, p. 13), it renders possible the expression of the multiple sociocultural values that are attributed to seeds by social groups (Congretel and Pinton, 2020). We will not go into the strategies of resistance seeking to block the deeper penetration of the market by means of mass protests and through political negotiations with the State, generally conducted within pre-established legal categories or through lawsuits (Claeys and Peschard, 2020). We will focus instead on practices based on “subaltern cosmopolitan legality”, i.e. the local and *bottom-up* creation of law through resistance to cultural homogenization (Santos and Rodríguez-Garavito, 2005); a law that relies on “ingenious ‘legal hacks’ or anomalous innovations to transcend the epistemological premises of [Western] law.” (Weston and Bollier, 2014, pp. 174–175)

A few examples include: the *Réseau semences paysannes* (RSP) in France (Demeulenaere and Piersante 2020), the *Red de Semillas Libres* in Colombia (Gutiérrez Escobar and Fitting, 2016), the *Red de Semillas: Resembrando e Intercambiando* in Spain (Reyes-García *et al.*, 2018), or the open source seed movement. All these movements claim to be based on the “commons”, less in line with Ostrom’s theory and more with the “generative” (as opposed to extractive) approach to the commons, i.e. the search for a third way between a flawed self-regulating market and a State that has abandoned its protective functions with respect to the market (Capra and Mattei, 2015, pp. 184–186) (on commons, see **also chapters by Crétois and Larrère in this volume**). This third way pushes against the dominant legal-political system and believes in the generative *praxis* of “commoning,” i.e. the practical science of “acting in common” or “common activity” (Dardot and Laval, 2019, p. 190) in order to create new forms of political, social, and economic organisation. The idea is that of an “everyday politics” which takes place on the farm and in the fields, a “direct intervention in, and alteration of, labour and production processes” (Douwe van der Ploeg, 2010, p. 16), rather than open struggle or covert resistance.

The open-source seed movement aligns with this approach. Launched in 1999 by an American breeder, Thomas Michaels, the idea of a General Public License for Plant Germplasm (GPLPG) received double recognition: first through the “pledge” of the Open Source Seed Initiative (OSSI); then with the “OpenSourceSeeds” licence of the German association Agricol (Kotschi and Horneburg, 2018). The complex trajectory of the OSSI, founded by Jack Kloppenburg, is interesting. Greatly inspired by the pioneers in open source software, Kloppenburg initially tried to get IP to make the same paradigm shift in plant breeding as had been achieved some decades earlier for software: to turn the logic of the copyright licence on itself, by using IP so as to place creation at the service of as many users as possible (Kloppenburg, 2014; Montenegro de Wit, 2019). However, technical difficulties (how to fit a complex license onto a packet of seeds?) and in particular a dispute concerning the meaning of the term “license” itself (is it about re-establishing free movement of the germplasm – “free seed license” – or about generating income by opening up new markets – “royalty-bearing license”?) led to the license and copyleft model being abandoned in favour of a pledge. This short pledge states a clear wish to recreate social norms in seed exchanges (Montenegro de Wit, 2019).¹¹

Although the pledge is not enforceable (it is not a copyleft license – Luby *et al.*, 2015, p. 2486), OSSI is nevertheless attempting to strengthen its social effectiveness by exerting control over the “moral” quality of the community members, i.e. their adherence to a certain vision of plant breeding. Indeed, seeds covered by the pledge must be *committed* to the “protected commons” (Kloppenburg, 2010), i.e. they must be “pledged” by a professional or freelance breeder, who thus becomes a member of the community (Montenegro de Wit, 2019) and undertakes to respect the exchange standards. OSSI retains the right of refusal and has for example already refused the offer to pledge a new genetically engineered variety (Ibid., p. 16).

¹¹ <https://osseeds.org/about/>.

Each member nonetheless retains the freedom to distribute their seeds at the price they have fixed, as long as she does not breach the open-source principle attached to the pledge. A breeder may even enter into a contract with a multiplier to multiply so-called “open source” seeds, and the two parties can share the income generated by the sale of these seeds. Likewise, breeders and farmers can draw up a “benefit-sharing” agreement with a seller (Montenegro de Wit, 2019).

Longing for Sovereignty

The aim of the open-source seed movement is indisputably to decommodify, to counter the proprietary logic of modern agriculture and maintain the widest possible access to the pool of genetic resources available to breeders and farmers, by recreating a legal space for creative freedom and new rules for seed exchanges. This “freeing” of seeds (Demeulenaere, 2014, p. 55) is, however, only one approach among others. For example, it is rejected by the *Réseau semences paysannes* in France, which considers “peasant seeds” to be inseparable from the project to “recreate communities of practices [of] sharing seeds, knowledge, know-how and new types of solidarity (between humans and plants).” (Demeulenaere and Piersante, 2020, p. 786). This is a “commons,” closed by nature (Schlager and Ostrom 1992), that “has its own social norms and institutions” and is often “distinctively local”, “tied to the land inhabited by a people, and shaped by their cosmological beliefs, spiritual beliefs and other fundamental aspects of their identity.” (Hardison, 2009, p. 41) Hence, several strategies of decommodification via commoning can coexist, which contrasts with the application of a single, one-size-fits-all solution everywhere as the market tends to do.

Conclusion

This last point brings us back to the introductory question on the polarity between commodification and decommodification and on the place left to the “market” in the commons model. First of all, one thing is certain: none of the examples above show a total cutting off of commercial exchanges. The fruit and vegetables produced by the RSP’s peasant seeds are on market stalls or even on supermarket shelves. Some RSP members plan to sell their seeds relying on the new “organic heterogeneous material” category as provided for in Regulation (EU) 2018/848, as the *Rete Semi Rurali* already does in Italy (Demeulenaere and Piersante, 2020, p. 777). Some OSSSI pledged seeds are subject to licensing agreements with producers/distributors, which generate royalties and are sold by distributors. While commercial exchanges contribute to reducing the resource to its market value by re-introducing the profit motive (Montenegro de Wit, 2019), market society should not be confused with marketplaces – in particular all these new markets (e.g., farmers’/peasants’ marketplaces) construed as alternative responses to the global market and which remain embedded in noneconomic institutions (Douwe van der Ploeg, 2010, p. 18). If, in addition, the peasant model that these movements claim to be part of defines itself by a “partial integration into markets” (Friedmann, 1980, p. 166), that means there is plenty of space for “mechanisms that farmers can use to govern, adapt, and change the balance of commodity and non-commodity relation.” (Douwe van der Ploeg, 2010, p. 111) These innovations based on commoning extend the repertoire of mechanisms which, through cooperation and reciprocity, allow control of material and social resources (traditional agroecological knowledge, breeding and seeds) to be taken back.

Nonetheless, these innovations remain fragile. They will only resist the pressure from globalised agrarian markets with a more favourable international legal framework. On this front, some positive signs can be discerned. First, the Nagoya Protocol (2010) has enshrined community protocols to protect Indigenous people, local communities and peasants as “stewards” for rich biocultural heritages of knowledge and resources (Girard and Frison, 2018). Secondly, the UNDROP has become established as the first instrument recognising “seed sovereignty” (Kloppenburg, 2010) through the right to seeds – i.e. the entire bundle of rights necessary to enable peasants to maintain their farmer seed networks (Haugen, 2020) – but also through control of land and territory, the cultural heritage and through the protection of normative and institutional autonomy, all elements essential to ensuring

the maintenance of crop diversity and subsistence activities (Alabrese *et al.*, 2022). In this respect, UNDROP is an important milestone: it signals that decommodification, like many tightly intertwined contemporary issues (e.g. food, Indigenous peoples' rights, land grabbing), involves local sovereignty faced with the disembedded market and with States that are either passive or favourable to this market-focussed model.

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