6.7 Local varieties, informal seed systems and the Seed Law

Reflections from Brazil

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Agrobiodiversity and law: a relatively new encounter

The concept of agrobiodiversity has emerged in many disciplines over the last 10–15 years, but it has still not been fully recognized by, or found its place in, the juridical world. The loss of agricultural diversity is associated with changes in agriculture, particularly those that followed the green revolution or industrialization of agriculture. The green revolution took place between the 1950s and 1970s, and it was characterized by the introduction of chemical, mechanical and biological (quality seed of improved varieties) inputs. Industrial inputs and mechanization have spread throughout different parts of the world, but particularly so across Brazil’s agricultural frontier. This model has generated various negative socio-environmental consequences that are well known. The increasingly artificial nature of agricultural ecosystems has also caused a reduction in the diversity of crops and varieties, as well as in the variation in agricultural ecosystems, in many cases leading to their complete disappearance. Evidently, the loss of agrobiodiversity cannot be attributed to legal frameworks only, but their effects need to be considered. Seed laws, for instance, were adopted as a legal support for (or component of) the industrialization of agriculture. In the domain of seed and varieties, the agricultural development paradigm was translated into a linear approach to seed sector development, in which formal and commercial systems would eventually replace the sometimes considered ‘inferior’ informal or farmers’ seed systems (Louwaars, 2010). Furthermore, it was considered only a matter of time until these ‘inferior’ local varieties would be replaced by continuous flows of improved ones. Many of the seed and varietal laws that were developed in the 1970s and 1980s reflect this agricultural development paradigm (Louwaars et al., 2013), which does not take into account the capacities of farmers to deal with seed, and which considers farmers as mere ‘recipients’ of new technologies, who can be persuaded to adopt new seed that is produced by formal systems.

In this chapter I will analyse the Brazilian Seed Law and the ways in which it has negatively affected the conservation and sustainable use of agrobiodiversity and agricultural development in the domain of small-scale farmers in Brazil. As such, this chapter complements the chapter on the Brazilian provisional ABS Act 2001, authored by Albuquerque et al. (Chapter 6.5).
Brazil: multiple agricultural systems and one single legal framework

As highlighted in several other chapters in this volume, the agricultural sector in Brazil is often characterized by two sectors that operate side by side: agro-industry, with large-scale and modernized production, and small-scale farming (*agricultura familiar*). Small-scale farming, as a sector, also includes communities that were settled through agrarian reform, and farming communities belonging to indigenous peoples and traditional communities, which are described in more detail by Assis *et al.* (Chapter 3.2). It is logical that both sectors use different seed systems that are appropriate to each, even though in some areas, or for some crops, there is some overlap. The agro-industrial sector is served by a public and private complex of technology development, which uses limited diversity and is oriented towards the market (Louwaars and De Boef, 2012). The second sector, which comprises small-scale farmers, settlers, indigenous peoples and traditional communities, practices more diversified forms of agriculture, in which farmers use seed primarily, but not exclusively, from the informal system. I refer to this sector as small-scale farmers; they primarily use local varieties, but to some extent they also use seed of improved varieties that are distributed or marketed through the public–private formal system using a development orientation (Louwaars and De Boef, 2012). In Chapter 2.7, Dias discusses in more detail the formal distribution systems that link the agro-industrial sector to the small-scale farming sector in Brazil, through a politically motivated system of seed distribution, and their impact on farmers’ autonomy and food security. The second sector also includes the agricultural systems in which agrobiodiversity is used as a livelihood asset by farmers and their communities, thereby contributing to the on-farm management of plant genetic resources (PGR).

The policy arena, as defined by the dualistic approach to agriculture, is shaped by three ministries: the Ministry of Agriculture, Livestock and Food Supply (MAPA), which relates to the predominant agricultural model and focuses on agro-industry; the Ministry of Agrarian Development (MDA), which is associated with small-scale farming and rural reform; and the Ministry of the Environment (MMA), which is mainly responsible for genetic resources and biodiversity, but also addresses several aspects concerning traditional people, owing to their strong association with nature conservation.

A number of laws in Brazil have had a direct impact on agrobiodiversity, including the Seed Law (Brazil, 2003), the Law on Plant Breeders’ Rights (Brazil, 1997), and the provisional Act concerning the access to, and benefit-sharing of, genetic resources and associated traditional knowledge (MMA, 2001). However, it should be noted that their effect on small-scale farmers’ livelihoods and seed systems has been largely underestimated. With the diverse landscape of laws, responsible ministries and their associated dissimilar interests, and the multiple realities in agriculture, the legal framework established by the Brazilian Seed Law (2003) is a challenge for the country. In the current paper, I aim to assess how the current Seed Law relates to informal seed systems and the farmers’ management of local varieties, and explore the barriers and opportunities it poses for community biodiversity management.
Importance of informal seed systems in Brazil

In Brazil, informal seed systems are responsible for the supply of a large part of the seed used by small-scale farmers. Informal seed systems in many circumstances cover the development, production, adaptation and distribution of seed of local varieties, as well as the use of improved and commercial varieties, and their adaptation to local conditions. Farmers maintain seed for use in the following year (Almekinders and Louwaars, 1999). In these informal systems, the extensive and complex social networks, which promote the exchange of seed, varieties and agricultural knowledge, play a fundamental role in ensuring food security and farmers’ sovereignty over their genetic resources, while at the same time contributing to on-farm management of PGR.

Comparing data collected by the Brazilian Seed Association, which represents the largest producers of seed in Brazil (Abrasem), for the 2007–2008 agricultural year, with historical data estimates for the period 1991–2003, we can see that the use of seed originating from informal systems increased (Table 6.7.1). In this case, the situation in Brazil is similar to that of many other countries, whether they have developing, emerging or industrialized economies (Byerlee et al., 2007). In other words, informal systems are responsible for the supply of seed for most crops, and the use of seed produced by the formal/commercial system has decreased. Abrasem (2008) noted that the reasons farmers save seed for use in the following year include: family or regional traditions, cost reduction, lack of availability of, or access to, seed of improved varieties, over-priced commercial seed, and low or unreliable quality of commercial seed.

The Brazilian Seed Law and its relationship with informal systems

In spite of the dominance of informal seed systems, the current Seed Law (Brazil, 2003) essentially focuses on the formal system. However, it does create some legal space for local varieties and informal seed systems regarding the following points (Santilli, 2012):

- It establishes that small-scale farmers (referred to in Brazilian law as family farmers, agrarian reform settlers and indigenous peoples), ‘who multiply seed . . . for distribution, exchange or marketing among themselves, are exempted from registration in the national registry of seed and seedlings’; that is, as long

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<tr>
<td>Common beans</td>
<td>81%</td>
<td>86%</td>
</tr>
<tr>
<td>Rice</td>
<td>52%</td>
<td>60%</td>
</tr>
<tr>
<td>Soya</td>
<td>28%</td>
<td>46%</td>
</tr>
<tr>
<td>Maize</td>
<td>25%</td>
<td>17%</td>
</tr>
<tr>
<td>Cotton</td>
<td>23%</td>
<td>56%</td>
</tr>
<tr>
<td>Wheat</td>
<td>11%</td>
<td>34%</td>
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Sources: a Carraro (2005); b Abrasem (2008).
as the distribution, exchange and even the sale of seed is carried out among
the farmers themselves, there is no need for registration. However, the Seed
Law imposes some restrictions when seed distribution is carried out through
farmers’ organizations (even for non-commercial purposes). In addition, farmers’
organizations cannot sell seed without being registered.

- It acknowledges local varieties and exempts them from rules that require variety
registration, so that their seed can be produced, improved and commercialized.
However, as it is still not clear, from a legal point of view, which varieties can be
considered ‘local’, there are doubts concerning which varieties do not need to be
registered.
- It allows (Article 48) the inclusion of seed of local varieties in publicly funded
programmes, and in policies aimed at supporting seed exchange and distribution
by small-scale farmers.
- It defines farm-saved seed, and safeguards the right of farmers to save part of
their production, each year, for sowing in the future; this practice is traditionally
used by farmers and forms the root of the informal seed systems. However, the
Brazilian Seed Law imposes some limits on the quantity of farm-saved seed that
can be used each year.

The exceptions made for local varieties by the Seed Law, as described above, rep-
resent important achievements of social movements and of organizations within civil
society, and they deserve to be highlighted in spite of impasses, described below, that
prevent their full enforcement.

Socio-technical and legal definition of local varieties

Many definitions have been proposed for local varieties. Local varieties are also
referred to as traditional or creole. Correa and Von der Weid (2007) refer to ‘creole
seed’ as the seed of varieties that have been improved and adapted by farmers by
applying their own methods and management systems in a process that started with
agriculture itself, over 10,000 years ago. They emphasize the fact that there are hun-
dreds of varieties of each crop, and each one of them evolved under specific environ-
mental conditions, systems of cultivation and cultural preferences. Hardon and De
Boef (1993) define local varieties as ‘varieties that undergo continuous management
by farmers, according to dynamic cycles of cultivation and selection, (not necessarily)
within specific agro-ecological and socio-economic environments’.

According to the Seed Law, a local (traditional and/or creole) variety is a ‘variety
developed, adapted or produced by small-scale farmers (in Brazilian terms family
farmers, agrarian reform settlers or indigenous peoples), with clear phenotypic char-
acteristics acknowledged by their own communities’. The Seed Law also requires that
local varieties be described for their socio-cultural and environmental value, and as
such they must be clearly distinguishable from commercial varieties. In spite of the
advances that have been made in the recognition of local varieties, the law leaves it up
to MAPA to define whether local varieties are characterized as ‘substantially similar
to commercial cultivars’ or not. However, this does not make sense, since the law itself
defines local varieties as those with ‘phenotypic characteristics acknowledged by their
own communities’. Thus, it should be left to the local communities, with the support and involvement of government representatives and agricultural technicians if necessary, to define the criteria for the identification and characterization of local varieties, and to differentiate them from commercial varieties. Consequently, the definition of local varieties and the distinction between commercial and local varieties remains rather complex and open for debate.

The Seed Law does not only require the agronomic and botanical characterization of local varieties, it also requires their socio-cultural and environmental description (i.e. the contexts in which these varieties were developed). MAPA has still not issued any regulation to define local varieties and the criteria to differentiate them from commercial varieties, as originally determined by the Seed Law back in 2003, which shows that this topic is not being prioritized.

However, the ministry that is most closely associated with small-scale farming, the Ministry of Agrarian Development (MDA), issued a ruling in 2007, which determined that local varieties are to be understood as including:

- varieties that have been developed, adapted or produced by small-scale farmers (e.g. family farmers, agrarian reform settlers or indigenous peoples);
- varieties with clear phenotypic characteristics that have been acknowledged by their own communities;
- varieties that have been used by farmers in these communities for more than three years;
- varieties that are not the product of genetic engineering, or of any other process of industrial development or manipulation in laboratories; and that are not either genetically modified or the product of hybrid seed, which would hinder their management under the control of local communities of small-scale farmers.

An important point to note is that this description of local varieties is only used within the context of the MDA, and not yet within the larger context of the Seed Law, or by MAPA. This paradox is symptomatic of how Brazilian policies that are related to the diversity of agricultural production systems often lack proper integration. Different ministries frequently promote contradictory and conflicting policies, as they represent the political and economic interests of different agricultural systems, as explained above (Santilli, 2012).

Legal definition of farm-saved seed

Another aspect of importance in the Seed Law is the way in which farm-saved seed is defined and regulated. Farm-saved seed is the seed that is saved by farmers after every harvest, exclusively for sowing or planting over the following year, in their own properties, or in other properties of which they have possession, for as long as the parameters registered in the national register of cultivars are observed in the calculation of the amount stored. The storing of seed for sowing in the following planting season is a tradition and a necessity for most small-scale farmers. The legal safeguarding of this practice is essential for informal seed systems and for the conservation of agrobiodiversity, for varieties, crops and agro-ecosystems.
Legal space for farm-saved seed in policies and publicly funded programmes

The legal provision in the new Seed Law of 2003, which allows the inclusion of seed of local varieties in funding programmes, as well as in public programmes for the distribution or exchange of seed, is a major improvement on the prior Seed Law (1977). Previously, the Seed Law treated the seed of local varieties as mere grains, making it harder for policies to support the initiatives of civil society organizations (CSOs) that aimed, in partnership with farmers, at the recovery, improvement and reintroduction of informally produced seed of local varieties. Dias (Chapter 2.7) describes how the Seeds of Passion network in the state of Paraíba, in Brazil, has been able to produce seed and grain for the institutional market, because of such a policy change. Consequently, the legal acknowledgement of local varieties and informal seed systems allows policies to support a number of such initiatives, thereby creating many opportunities for income generation for small-scale farmers in harmony with the production and seed systems, without having to convert to ‘formal’ industrial agriculture.

Seed laws, informal seed systems and on-farm management

Although seed laws cannot be held wholly responsible for the loss of genetic and socio-cultural diversity, they have certainly contributed to it. The exceptions made by the Seed Law in Brazil to informal seed systems and local varieties aim to reduce any possible negative effects on agrobiodiversity and farm-level seed security. However, they do not change the principles and general concepts on which the law is based (i.e. the promotion of industrialization and consequent standardization of agriculture, as well as the reduction, or rather elimination, of the farmers’ role in selection and innovation) (Santilli, 2012).

Seed laws, and the relatively small amount of legal space that is devoted to informal systems, make it difficult to adopt or promote models of agricultural development that are based on small-scale farming. In order that farmers can select, store and exchange their seed freely, which is essential for community biodiversity management. Policies ought to promote a broad diversification of legal frameworks dealing with the innovations and development of the informal seed systems, and the development and use of local varieties. Policies should devote more legal and institutional space to informal systems. Instead of arbitrarily imposing a single system (the formal system), policies ought to support a structure that could facilitate the coexistence of, or promote pluralism in, the various seed systems (Louwaars et al., 2013).

Integrated seed sector development fosters a pluralistic rather than linear approach, within one enabling and evolving policy framework that responds to a reality with multiple situations (i.e. seed systems). When such an approach is taken, the development of the seed sector can be complemented by promoting the use of agrobiodiversity by small-scale farmers, traditional communities and indigenous peoples. In this way, informal seed systems will become recognized as seed systems that serve small-scale farming, in parallel to the formal public–private system that primarily serves large-scale, agro-industrial production. With this recognition, the provision of services by the formal public sector to the informal sector becomes more visible,
facilitating the provision of seed and varieties to small-scale farmers also, and thereby making it clear that the formal sector (both public and private) may have to follow dissimilar pathways to provide services to the two agricultural sectors. Seed policies and laws should more explicitly accept informal systems, in which locally adapted varieties are used, distributed and sold. Additional measures that support on-farm or rather community biodiversity management should be included, by issuing laws specifically concerned with conservation and sustainable use. In this way, seed legislation for protecting agrobiodiversity would contribute not only to the conservation and use of agricultural diversity, but also to the food security of human populations, to social inclusion and to sustainable rural development.

The Brazilian Constitution, seed systems and agrobiodiversity

Agricultural laws have not taken into account the fact that biodiversity, and the cultural diversity associated with it, is protected by Brazil’s constitution, and that laws and policies dedicated to this sector, including agricultural policies, ought to promote its conservation and sustainable use. In this way, seed policies and laws should acknowledge rather than disregard the principles established in the constitution concerning the conservation and sustainable use of biodiversity, and the safeguarding of national cultural heritage, which includes local varieties (which are the product of cultural intervention), farmers’ knowledge and innovations developed by them. Seed laws, at the very least, should not harm efforts to conserve and use agrobiodiversity. Furthermore, they should be coherent with the constitutional principle, which establishes that public authorities must preserve the diversity and integrity of Brazil’s genetic patrimony.