6.8 Seed and variety regulations
Obstructing informal seed systems and the use of local varieties by farmers in Europe

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The importance of informal seed systems
The seed of varieties that is selected, propagated and stored on-farm still represents the bulk of crop diversity that is available and utilized worldwide today. However, this is less and less the case in western Europe. Fifty years of direct or indirect public subsidies that promoted quantity over quality in agricultural production, and encouraged the use of modern industrial inputs to meet those quantities, have resulted in the use of only a handful of elite varieties of just a few crops, by a dominant group of large-scale farmers. As such, these farmers have abandoned the broad diversity of local varieties that are adapted to local and low-input agriculture and that require labour-intensive rather than capital-intensive production systems.

The decision to rely so heavily on these few varieties that are associated with industrial production systems is questioned today by many, both farmers and consumers alike, who are concerned with the following issues:

- environmental damage;
- climatic and health related aspects of the inputs;
- exhaustion of natural resources, such as water, soil fertility and biodiversity;
- the explosive growth of unemployment in rural areas and the resulting rural exodus;
- the rising costs of inputs and fossil energy;
- the frequency and magnitude of climatic stresses and economic shocks, such as those associated with fluctuations in prices of agricultural products and food.

A growing number of farmers are reintroducing greater flexibility and diversification into their agricultural strategies. They aim to reduce energy consumption in agricultural production, and lessen the environmental impact of farming. At the same time, these farmers are trying to adapt to unpredictable variations in the climate, exploring ways to mitigate their emissions, for example, through the use of practices that increase carbon accumulation in soil humus, and aiming to contribute to the conservation of agrobiodiversity. Farmers engaged in such efforts are abandoning the strategy of adapting their environments to fit the elite varieties. Instead, they are reversing this strategy, seeking to adapt the varieties to the diversity and variability of
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the natural environment. Once again, they appreciate the robustness of their varieties (i.e. specific adaptation to their location, the cultivation of mixed crops, the use of intra-varietal diversity, and the cultivation of a diversity of varieties). However, while making progress in such efforts, these farmers will also meet several obstacles in the seed and variety legal and regulatory frameworks, which will be further described in this chapter.

Creation of a legal space for informal seed systems

It is essential to explore ways in which European regulations can include and promote informal seed systems. Such rules should be distinct from those used for variety lists, which focus on regulating the market for commercial seed. Seed companies would like to see a watertight fit between the informal system and the commercial system, so that neither one offers possibilities for circumventing the rules of the other. One option for balancing the informal system with the commercial system is to restrict the quantities involved in each informal exchange. This option builds upon the assumption that informal exchange concerns a large number of local varieties that are not widely disseminated. However, such a limitation can only be acceptable if they do not impose quantities that are only appropriate for flowerpots or garden allotments. The system must still remain suitable for farmers who cultivate the varieties through dynamic management in their fields for commercial purposes also.

Regulations that obstruct informal seed systems and farmers’ dynamic management

Obstacle 1: The variety list

Today European farmers cannot find varieties on the market that suit their changing and diversifying production systems because of the way the official variety lists operate. In effect, the variety lists drive genetic progress towards the use of varieties with a wide adaptation. Such varieties are consequently dependent on the use of external inputs to reach their potential. This situation is in contrast with farmers’ practices in breeding, maintenance and reproduction of their seed stock, which encourage the adaptability and adaptation of local varieties. The organization of regular collective seed exchanges between farmers would contribute to increasing the adaptive capacity of the varieties and the overall seed system. Under current regulations, before exchanging seed, the varieties need to be included in the variety list, implying cumbersome, time-consuming procedures. However, local and traditional varieties are often populations that will not meet required criteria for distinctness, uniformity and stability (DUS). In addition, the duration and costs of testing hinder the inclusion of local varieties, and also obstruct the exchange of varieties among farmers within the informal seed system. In another chapter in this volume, co-authored together with Anne-Charlotte Moÿ (Chapter 6.6), I look at the efforts made by the European Union (EU) to create a legal space for local and traditional varieties within a specific European variety catalogue and subsequent national lists for local and traditional varieties. As with the case of the EU, most national seed regulations limit the use of local
varieties and the informal seed system. A different framework, built upon principles for seeking diversity and adaptation is required.

**Obstacle 2: Plant breeders’ rights**

Europe favours plant breeders’ rights (PBRs) over patents for plant variety protection. However, the EU does recognize patents on genes, for which the protection extends to the whole biological organism (plant and product) containing the patented gene that expresses the function described in the patent. Patents on production technologies may also provide the same protection when associated with the presence of genes or other markers.

Since 1994, the farm-saved seed of many species has been banned, including maize, soybean, a majority of vegetables, and so forth. For 21 species, including most cereal grains, the seed is subject to farmers’ privilege, on condition that royalties are paid to the breeders annually. However, the majority of farmers do not pay these royalties because they do not consider them legitimate. Farmers take advantage of the difficulty breeders have in distinguishing between breeders’ varieties and varieties that have developed in fields. An interesting perspective on the farmers’ privilege is the fact that when breeders first collected the varieties that became sources for their breeding programmes, they paid nothing to the farmers who had bred and conserved varieties for many centuries. The breeders feel that they are meeting their obligations to keep sharing the benefits by leaving their PBR-protected varieties free to use by other breeders. But why should farmers themselves not be entitled to such breeders’ exemption for those varieties that their ancestors so graciously granted free to the breeders? When farmers re-sow a particular crop for several years after open-pollination, aren’t they selecting for new, locally adapted varieties? Nevertheless, the European Commission, and some of its member states, are examining ways to penalize farmers who use farm-saved seed. They are also exploring ways to support breeders in collecting their royalties (e.g. by providing conditional subsidies on the use of certified seed).

**Obstacle 3: The protection of patented genes**

The patenting of genes in commercial varieties is gradually increasing. Their presence in a seed or a crop can be easily identified by molecular markers. These patents pose a threat to breeders in that they remove the breeders’ exemption, which allows the exchange and use of protected materials among breeders in breeding programmes. This threat is less obvious in cases involving patents on techniques or combinations of non-transgenic genes. Such patents can generate a risk of blocking innovation, threatening both breeders and also farmers, for the benefit of just a few multinational companies that hold the largest portfolios of patents.

**Obstacle 4: The biosafety laws**

Biosafety laws constitute a new threat to informal seed systems and the dynamic management of local varieties by farmers. Farmers are unable to analyse all farm seed
batches that might have been contaminated by neighbouring genetically modified (GM) crops. Consequently, farmers can be forced to abandon the farm-saved seed of local varieties in favour of certified seed (that is tested to ensure it is free of genetically modified organisms) in order to avoid liability in the event of their crop being contaminated. The annual accumulation of contamination by genetically modified organisms (GMOs) in the fields of farmers, who regularly re-sow part of their crop from the previous year, can rapidly reach levels well above the thresholds for mandatory GM labelling (currently 0.9%). Such contamination deters farmers from cultivating any traditional or non-GM varieties of the same species as GMOs that are grown in their region. This situation has already happened with maize in Spain and oilseed rape in Canada, and is currently taking place in Brazil.

**Obstacle 5: Biopiracy**

Lastly, biopiracy could also come into play and affect informal seed systems and the farmer management of local varieties if the European legal framework for the protection of industrial property is not changed. PBRs can be claimed on a local variety discovered in a small-scale farmer’s field, in order for it to be developed (i.e. made stable and uniform, and then described without any obligation to disclose the origin of the resources employed). The best way to oppose this practice would be to claim a PBR on the local variety beforehand. However, the definition of a variety as required for a PBR is based on the same DUS criteria that guides acceptance in the variety list, which is not applicable to local varieties. Another way of protecting against appropriation by third parties would be to prove that the local variety existed before its discovery by others; but there is often no way to prove this. Small-scale farmers do not spend their time making written records or digitizing everything they do; their knowledge is passed down through practices and is shared verbally. As for patents, companies aiming to appropriate local varieties circumvent prior consent and will never allow any sharing of benefits whatsoever, as there is no associated obligation to disclose the origins of the resources employed.

**Legal advances made in the EU in light of the ITPGRFA**

Breeders, research laboratories, genetic resource centres and conservation networks regularly exchange seed of varieties that are not registered in any national variety list. The registration requirements only apply to marketing ‘for the purposes of commercial exploitation’. Selection, research or conservation are not seen as the commercial exploitation of a variety and are therefore not illegal. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) creates the legal space for such exchange of varieties or rather transfer of materials. The EU ratified the ITPGRFA in 2004. Its implementation in Europe remains rather informal because neither the EU nor its member states have so far translated the commitments of the ITPGRFA into domestic legislation and regulations.

The ITPGRFA recognizes the past, present and future contributions of farmers to the conservation of PGR (FAO, 2001). Furthermore, it does not separate the purpose of use of local varieties, be it for conservation, or production for the marketplace.
Their importance to farmers’ livelihoods, value in regional or local markets, and specific characteristics, motivate farmers to continue to cultivate local varieties. In this way, local use and markets are associated with the continued use and conservation of local varieties, such as the local bread wheat variety, Meunier d’Apt, in the Lubéron region in France (Kastler and Moÿ, Chapter 4.6). Even so, some European countries are attempting to prohibit the informal seed system on the pretext that the seed that is traded within that system is also used for crop commercialization. This means that they are prohibiting any contribution by farmers to the conservation and renewal of PGR, which is contrary to the commitment made when signing the ITPGRFA.

In 2009, the European Commission began to evaluate its legal framework, with the aim of simplifying procedures for marketing seed. This evaluation was then followed by a similar exercise in 2010, which focused on plant breeding. Several member states, and the majority of commercial seed companies, are calling for a revision of the legal framework regarding patents in order to make them subject to the breeders’ exemption, like the PBRs. The question thus emerges as to whether this revision of European law will recognize and acknowledge the contribution made by farmers to the conservation and development of PGR as indicated in the ITPGRFA. It should, however, be realized that the ITPGRFA subjects the farmers’ right to save and exchange seed to national law, thus putting it in the hands of the EU and its member states. Thus, the EU has the option within the ITPGRFA to limit the rights of breeders and make them subject to the positive recognition of farmers’ rights.