

A Guide to EU Legislation on the Marketing of Seed and Plant Propagating Material in the Context of Agricultural Biodiversity

Tone Winge



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Abstract

This report presents the EU legislation on the marketing of seed and plant propagating material, with a particular view to how it affects agricultural biodiversity. The main principles of the EU's 12 basic directives in this area and the three directives providing derogations for the purpose of conservation and sustainable use of plant genetic resources for food and agriculture are discussed. As this part of EU legislation is currently undergoing review, the various elements of the review process are also presented. In addition, the report contains a guide to the literature on the development of such legislation in Europe, its effects on agricultural biodiversity, and the content and consequences of the EU directive that provides derogations for conservation varieties.

Key Words

EU, legislation, seed, propagating material, marketing, variety, landrace, agricultural biodiversity, derogations, review, evaluation, directives, conservation, genetic resources

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Contents

Acronyms and abbreviations	iii
Foreword	v
1 Introduction	1
2 EU legislation on the marketing of seed and plant propagating material	3
2.1 The 12 basic EU Directives	4
2.1.1 Key requirements	4
2.1.2 Categories of seed/material	6
2.1.3 Definitions of marketing	8
2.2 Directives aimed at the conservation of genetic resources	10
2.2.1 Derogations for agricultural species	11
2.2.2 Derogations for vegetable species	13
2.2.3 Derogations for fodder-plant seed mixtures	15
2.2.4 Summary	15
3 EU seed legislation review	16
3.1 The FCEC evaluation	17
3.1.1 Stakeholder consultation	17
3.1.2 Problems and potentials	19
3.1.3 Recommendations	20
3.2 European Conference on Seed Availability	21
3.3 The Action Plan	22
3.4 ‘Options and Analysis of Possible Scenarios’	23
3.4.1 Scenario 1: cost recovery	23
3.4.2 Scenario 2: co-system	24
3.4.3 Scenario 3: low burden co-system	24
3.4.4 Scenario 4: enhanced flexibility system	25
3.4.5 Scenario 5: centralization	26
3.4.6 Overall comparison	27
3.5 The response to the option and analysis paper	27
3.6 The Kokopelli court case and its impact	29
3.6.1 Opinion of Advocate General Kokott	30
3.6.2 Reactions to the opinion	32
3.6.3 The judgment of the Court of Justice of the EU	34
3.6.4 Reception and impact	36
3.7 The way forward	37
4 Timeline: EU seed legislation since 1998	39
4.1 Timeline	40

5	Literature guide	42
	5.1 Agriculture, seed production and conservation of plant genetic resources in Europe	42
	5.1.1 Landraces in Europe	43
	5.1.2 Genetic erosion and efforts to stop it	44
	5.1.3 Literature in 5.1	46
	5.2 Development of seed regulation in Europe and regulatory reform	47
	5.2.1 The history of seed regulation in Europe	47
	5.2.2 Approaches to regulation	48
	5.2.3 Comparisons with the USA	49
	5.2.4 Regulatory reform	49
	5.2.5 Literature in 5.2	51
	5.3 Effects of seed legislation on agricultural biodiversity	52
	5.3.1 Literature in 5.3	54
	5.4 Commission Directive 2008/62/EC	55
	5.4.1 Key concepts	55
	5.4.2 National implementation efforts	59
	5.4.3 Suggested changes	61
	5.4.4 Literature in 5.4	62
6	Concluding remarks	65
	Treaties and directives	67
	References	69
	Annex 1: Overview of the 12 basic Council Directives on the marketing of seed and propagating material	73
	Annex 2: Overview of EU directives aimed at the conservation of plant genetic resources	83

Tables

1	Timeline	40
2	Literature in 5.1	46
3	Literature in 5.2	51
4	Literature in 5.3	54
5	Literature in 5.4	62

Acronyms and abbreviations

CBD	Convention on Biological Diversity
CGRFA	Commission on Genetic Resources for Food and Agriculture
CPVO	Community Plant Variety Office
DG SANCO	Directorate General Health and Consumers (of the EU)
DUS	distinct, uniform and stable (of plant varieties)
EC	European Community
ECPGR	European Cooperative Programme on Plant Genetic Resources
ESA	European Seed Association
FAO	Food and Agriculture Organization of the United Nations
FCEC	Food Chain Evaluation Consortium
FSO	Farm Seed Opportunities
GPA	Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture
IFOAM	International Federation of Organic Agriculture Movements
PGRFA	plant genetic resources for food and agriculture
UPOV	International Union for the Protection of New Varieties of Plants
VCU	value for cultivation and use (of plant varieties)

Foreword

Norway's Fridtjof Nansen Institute has long been engaged in research on the management of plant genetic diversity for food and agriculture at international, regional and national levels. This diversity has been disappearing at an alarming rate. For several major crops, between 80 to 90 per cent of the varieties have been lost from the centres of diversity in the course of the past century alone. The genetic diversity in crop plants can provide the traits essential for avoiding pests and diseases as well as meeting climate change and new dietary needs, making it crucially important for food production. Research at the Fridtjof Nansen Institute has focused on the efforts and possibilities to stop genetic erosion and promote the development of crop genetic diversity.

A central topic in this research is how intellectual property rights affect the management of crop genetic resources, and how patents and plant variety protection may represent barriers to the sustainable management of crop genetic diversity – to varying degrees, depending on their protection coverage and scope. Variety release and seed marketing regulations may have even greater impact on diversity management, as they cover *all* varieties, not only those protected by intellectual property rights. Importantly, they regulate the release and marketing of old landraces and varieties which are not protected by intellectual property rights, and which constitute a central component of the diversity remaining after the massive genetic erosion of the previous century. The crop genetic diversity that may be eroded as a result of such regulations constitutes an important part of the genetic pool that future generations will need to develop and breed plants able to cope with future crop pests and diseases as well as environmental factors like climate change.

Therefore the Fridtjof Nansen Institute has developed a research project to study these particular challenges, with support from the Research Council of Norway (Environment 2015 Programme): *Norwegian Biodiversity Policy in the Interface between European Legislation and Multilateral Environmental Treaties: the Seed Issue*. We analyse matches and mismatches between relevant EU directives and relevant multilateral environmental treaties, in particular the International Treaty on Plant Genetic Resources for Food and Agriculture. We then examine the reasons for these matches and mismatches by identifying driving forces, interests, sources of power and impact on the legislation process. Finally we assess the effects of the legislation on management practices and identify space for manoeuvre, for Norway and within the EU. The project is to run from 2011 until 2014. The present report has been developed as part of the project.

When we set about studying the EU legislation on variety release and seed legislation, we found it highly complex and barely accessible. That led to the decision to produce a presentation which would be more easily accessible for interested groups, as a means to enhance understanding of the system and its challenges, as well as serving as a foundation for our own work. That is the background to this report. We hope it will prove useful and that it will find wide distribution.

Lysaker, 20 August 2012

Regine Andersen
Senior Research Fellow and Project Director,
Fridtjof Nansen Institute

1 Introduction

The objective of this guide is to provide an accessible overview of the legislation on the marketing of seed and plant propagating material in the European Union (EU)¹ to stakeholders involved in the conservation and sustainable use of plant genetic diversity for food and agriculture. Because this legislation specifies the requirements that seed and propagating material must fulfil to be marketed legally in the EU and how this marketing may take place, it has considerable impact on the composition of the European seed market, as well as on cultivation and breeding. As a result, it also affects the maintenance of crop diversity and national implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (the Plant Treaty). The impacts have not been altogether positive. Recent studies have shown that many stakeholders in Europe worry about the effects of this seed legislation on farmers' possibilities for maintaining what remains of crop genetic diversity, and want a new legal framework (Andersen and Winge 2011, Thommen et al. 2010).

Seed legislation was originally introduced in Europe against a backdrop of confusion surrounding variety names and varietal identity. It has been argued that the intention was to create clarity and transparency in the market (Louwaars 2002b), and partly to ensure that the marketed seed had sufficient germination capacity, was disease-free and came from the claimed variety. Variety registration and certification became central in the efforts to achieve this; and many European countries passed seed laws in the 1940s (Louwaars 2002b).

The first European Economic Community directives regulating the marketing of seed and propagating material were introduced in 1966, and in the period 1966 to 1970 altogether nine directives were introduced. Then came three further directives, issued in 1991 and 1992. When this legislation was first introduced, the aim was to increase competitiveness, create more open markets and harmonize the existing national seed laws (DG SANCO 2011b). Increased productivity is now also regarded as a general objective; the specific objectives are to harmonize marketing standards, to ensure that *new* varieties cannot be marketed unless they are genuinely new and represent an improvement on already marketed varieties, and that the seed and propagating material is of high quality (FCEC 2008). However, the complexity, implementation costs and non-harmonized national implementation of the current EU seed legislation, together with calls for adjusted and new objectives, like greater focus on sustainability, have prompted a review of this legislation (DG SANCO 2011b).

In this report, current EU seed legislation – both the basic directives and the three directives introduced to facilitate conservation efforts – is presented in Chapter 2. For the basic directives the focus is on key requirements, categories of seed/material used and how marketing is defined. For the three directives aimed at conservation of genetic resources, the derogations as well as the restrictions they contain are presented.

¹ Iceland, Liechtenstein and Norway, through their membership in the European Economic Area, are also obliged to implement the directives in question.

Chapter 3 is devoted to the ongoing review of EU seed legislation, and the problems and options that have been identified in this process. This chapter presents the external evaluation conducted by the Food Chain Evaluation Consortium (FCEC), the European conference on seed availability, the action plan, and the paper outlining various scenarios for reform. It also provides some information on the response the paper received as part of an on-line consultation organized by the Directorate General for Health and Consumers (the DG SANCO). In addition, the chapter presents a French court case of importance for the review process, *Association Kokopelli vs. Graines Baumaux*, and its potential impact, and the way forward is discussed.

In Chapter 4 the central directives on seed marketing promulgated in the EU since 1998 are listed chronologically, together with the major international events related to the conservation of plant genetic resources for food and agriculture and the various steps in the review process.

Chapter 5 is a guide to the main academic contributions on the regulation of seed marketing in the EU and other issues relevant in the context of EU seed legislation and genetic diversity, and the main issues identified in this connection. This chapter is divided thematically into four parts: agriculture, seed production and conservation of plant genetic resources in Europe; the development of seed regulation in Europe and regulatory reform; the effects of seed legislation on agricultural biodiversity; and Commission Directive 2008/62/EC.²

The final chapter, Chapter 6, summarizes the main points and offers some concluding remarks.

² Commission Directive 2008/62/EC of 20 June 2008 providing for certain derogations for acceptance of agricultural landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion and for marketing of seed and seed potatoes of those landraces and varieties

2 EU legislation on the marketing of seed and plant propagating material

EU legislation on the marketing of seed and propagating material³ is based on the two key principles of registration and certification, and consists of 12 basic Council Directives (see Annex 1). One of these is a horizontal directive, Council Directive 2002/53/EC of 13 June 2002 on the common catalogue of varieties of agricultural plant species, which specifies that for agricultural plant species (beet, fodder plant, cereal, potato and oil and fibre plants) a common catalogue of varieties should be compiled on the basis of national catalogues that have been drawn up in accordance with uniform rules. The remaining 11 directives are vertical directives that regulate the marketing of seed and propagating material from specific types of crops: fodder-plant seed, cereal seed, beet seed, seed of oil and fibre plants, vegetable seed, vine propagating material, seed potatoes, vegetable reproductive material other than seed, fruit-plant propagating material,⁴ ornamental plants and forest reproductive material (DG SANCO 2011b). Although they share similarities, each of these 11 directives addressing specific plant species or groups of plant species also comes with its own systems for production and marketing, and its own marketing categories.

EU legislation on marketing of seed and propagating material is rather fragmented and complex, with some 90 other legal acts (DG SANCO 2011b) in addition to the 12 basic directives. Among the recent additions are three directives that were introduced to create greater legal space for the on-farm conservation and sustainable use of plant genetic resources for food and agriculture. The first of these encompasses agricultural landraces and varieties, the second vegetable landraces and varieties, and the third deals with fodder-plant seed mixtures.

In this chapter, the main principles of the 12 basic directives and the three later directives aimed at the conservation of genetic resources will be presented.

³ This term, ‘EU legislation on marketing of seed and propagating material’, is what is used about this legislation in connection with the review process and it has therefore also been taken as the point of departure here.

⁴ Council Directive 92/34/EEC on the marketing of fruit plant propagating material and fruit plants intended for fruit production was recast in 2008 as Council Directive 2008/90/EC and will be repealed from 30 September 2012. From that date the member states are to apply provisions (to have been adopted and published by 31 March 2012) necessary for complying with given articles in the recast version. The present report refers to Council Directive 92/34/EEC, but the amendments are incorporated.

2.1 The 12 basic EU Directives

2.1.1 Key requirements

As noted, the two central requirements in the EU legislation on the marketing of seed and propagating material concern the registration of varieties⁵ and the certification⁶ of seed lots.

The registration requirement means that, in order to be marketed in the EU, a plant variety must be listed in a national catalogue⁷ and, depending on the species, in one of the EU Common Catalogues.⁸ To qualify for registration, a variety must be demonstrated to be distinct, uniform and stable (DUS), and the rules for naming of varieties must be followed (DG SANCO 2011b). A variety is regarded as distinct if it is ‘clearly distinguishable on one or more important characteristics from any other variety known in the Community’ (see e.g. Council Directive 2002/53/EC, Article 5) and as stable if it ‘remains true to the descriptions of its essential characteristics’ after successive propagation or multiplications or at the end of each cycle (see e.g. Council Directive 2002/55/EC, Article 5). If, ‘apart from a very few aberrations, the plants of which it is composed are (account being taken of the distinctive features of the reproductive systems of the plants) similar or genetically identical as regards the characteristics, taken as a whole, which are considered for this purpose’, a variety is also regarded as sufficiently uniform (see e.g. Council Directive 2002/55/EC, Article 5).

In addition, testing for value for cultivation and use (VCU) is done for varieties of agricultural plant species⁹ (DG SANCO 2011b). According to the DG SANCO, VCUs are ‘based on yield, resistance to harmful organisms, behaviour with respect to factors in the physical environment

⁵ For some plant species the term ‘material’ is used, but for the sake of simplicity, only ‘variety’ is used here (as in the ‘Options and analysis’ paper published by DG SANCO).

⁶ The term ‘certification’ as it is used here also covers (as in the ‘Options and analysis’ paper published by DG SANCO), in addition to the intervention of official services in the form of visual inspections on the growing field and lots (including sampling and testing), the inspection work conducted by the supplier.

⁷ The only one of the eleven vertical directives that does not require some type of national list or catalogue to be established is the directive on ornamental plants: Council Directive 98/56/EC.

⁸ The common catalogue of varieties of agricultural plant species and the common catalogue of varieties of vegetable species are published in the *Official Journal* on the basis of information received from the member states; for an up-to-date account, see the EU database of registered plant varieties: <http://ec.europa.eu/food/plant/propagation/catalogues/database/public/index.cfm?event=homepage> (for further information, see also http://ec.europa.eu/food/plant/propagation/catalogues/index_en.htm)

⁹ In EU legislation, the crops encompassed by this term are beet, fodder plants, cereal, potatoes and oil and fibre plants; VCU requirements for these are specified in Council Directive 2002/53/EC on the common catalogue of varieties of agricultural plant species. However, Council Directive 2002/55/EC on the marketing of vegetable seed specifies that varieties of industrial chicory also require a satisfactory value for cultivation and use.

and quality characteristics'.¹⁰ Council Directive 2002/53/EC specifies that a variety's VCU should be regarded as satisfactory if the variety's qualities, 'taken as a whole, offer, at least as far as production in any given region is concerned, a clear improvement either for cultivation or as regards the uses which can be made of the crops or the products derived therefrom' (Article 5) compared to other registered varieties in the member state in question.

The principle of common catalogues was first introduced in the EC in 1966 (Chable et al. 2009). The horizontal directive on the common catalogue, Council Directive 2002/53/EC, applies only to varieties of agricultural plant species. This means that the types of crops regulated by the other six vertical directives – ornamental plants, forest plants, fruit plants, vegetables (both seed and other types of propagating material) and grape vines – are not covered by this directive and its requirements on common catalogues based on national catalogues. Council Directive 2002/55/EC, on the marketing of vegetable seed, establishes the other common catalogue, the common catalogue of varieties of vegetable species¹¹.

The preambles of the basic directives of EU legislation on the marketing of seed and plant propagating material, represented by most of the vertical directives, emphasize improved productivity, underlying assumption being that productivity will increase through strict and uniform rules regulating the marketing of seeds. The legislation therefore declares that it is desirable to establish a uniform certification scheme within the European Community (EC) based on the experiences of the member states.

Under this certification scheme, certification of seed lots and lots producing plant propagating material is done either by official bodies or under official supervision, and is mandatory for all seed-producing entities wishing to put their seed on the market. The only vertical directive without any certification requirement is Council Directive 98/56/EC on the marketing of propagating material of ornamental plants (DG SANCO 2011b).

In addition to the requirements on registration of varieties and certification of seed lots, accreditation¹² or registration¹³ of suppliers is also

¹⁰ See http://ec.europa.eu/food/plant/propagation/catalogues/index_en.htm

¹¹ As is specified in article 9 of Council Directive 92/33/EEC of 28 April 1992 on the marketing of vegetable propagating and planting material, other than seed, the varieties officially accepted under this directive are also to be listed in this catalogue.

¹² Council Directive 92/33/EEC of 28 April 1992 on the marketing of vegetable propagating and planting material, other than seed introduces accreditation of suppliers and laboratories: an official body must verify that the suppliers meet the requirements; accreditation must be renewed if their activities change.

¹³ Under Council Directive 1999/105/EC of 22 December 1999 on the marketing of forest reproductive material and Council Directive 1998/56/EC of 20 July 1998 on the marketing of propagating material of ornamental plants, as well as Council Directive 92/34/EEC of 28 April 1992 on the marketing of fruit-plant propagating material and fruit plants intended for fruit production as amended and recast, suppliers must be officially registered (no exceptions are mentioned

required for vegetable propagating and planting material other than seed, fruit-plant propagating material and fruit plants intended for fruit production, forest reproductive material and propagating material of ornamental plants.

2.1.2 Categories of seed/material

Most of the vertical directives operate with various categories of seed/material.¹⁴ Eight of the 11 vertical directives distinguish between ‘basic’ material/seed and ‘certified’ material/seed. In the oldest of these directives, Council Directive 66/401/EEC of 14 June 1966, it is stated that ‘the choice of the technical terms ‘basic seed’ and ‘certified seed’ is based on already existing international terminology’ (Council Directive 66/401/EEC: preamble). Briefly put, the difference is that basic seed is intended for the production of certified seed, whereas certified seed in general is produced from basic seed and is intended for production of actual produce. The only vertical directives where these categories are not used are Council Directive 1999/105/EC of 22 December 1999 on the marketing of forest reproductive material (which operates with four categories all derived from basic material), as well as Council Directive 92/33/EEC of 28 April 1992 on the marketing of vegetable propagating and planting material, other than seed and Council Directive 1998/56/EC of 20 July 1998 on the marketing of propagating material of ornamental plants, both of which do not operate with any such categories.

Of the eight directives that use the categories ‘basic’ material/seed and ‘certified’ material/seed, two also use the category ‘commercial’ seed. Both these directives – Council Directive 66/401/EEC of 14 June 1966 on the marketing of fodder plant seed and Council Directive 2002/57/EC of 13 June 2002 on the marketing of seed of oil and fibre plants – stipulate that seed of certain listed genera and species must be officially certified as ‘basic’ or ‘certified’ seed to be marketed, while seed of other than the listed genera and species can also be placed on the market if it ‘is commercial seed’ (Council Directive 66/401/EEC of 14 June 1966 on the marketing of fodder plant seed: Article 3 and Council Directive 2002/57/EC of 13 June 2002 on the marketing of seed of oil and fibre plants: Article 3). ‘Commercial seed’ is somewhat loosely defined as seed which is identifiable as belonging to a species and which has been found by official examination to satisfy the conditions laid down in Annex 2 of the respective directives regarding germination, analytical purity and

for forest reproductive material; for propagating material of ornamental plants suppliers only marketing to non-professionals is excepted, and for fruit-plant propagating material and fruit plants intended for fruit production member states may exempt suppliers marketing only to non-professional final consumers).

¹⁴ Whereas the term ‘propagating material’ (and ‘forest reproductive material’) is defined in the legislation, no definition is provided for the term ‘seed’. In Council Directive 92/33/EEC for example, propagating material is defined as ‘parts of plants and all plant material, including rootstocks intended for the propagation and production of vegetables’ (Article 3), and all five directives dealing with such material provide a definition of the term. The FCEC evaluation therefore recommends that an overall definition of ‘seed’ should be consistently introduced in all the relevant directives (FCEC 2008).

content of seeds of other plant species. This means that the same requirements regarding varietal identity and varietal purity do not apply to 'commercial seed' as to 'basic' and 'certified' seed. In the preamble to Council Directive 66/401/EEC the explanation offered for this is that with respect to certain genera and species it is necessary to approve fodder plant seed that is not from a named variety, as not all genera and species of fodder plants important for cropping have produced the desired varieties or enough seed of the existing varieties to meet the needs of the EC.

Another two of the eight directives using the categories 'basic' material/seed and 'certified' material/seed also employ the category 'standard' material/seed. These two directives – Council Directive 68/193/EEC of 9 April 1968 on the marketing of material for the vegetative propagation of the vine, and Council Directive 2002/55/EC of 13 June 2002 on the marketing of vegetable seed – define 'standard' material/seed as material/seed of varietal identity and purity intended for the production of produce (vegetables in the case of Council Directive 2002/55/EC; grapes in the case of Council Directive 68/193/EEC) that satisfy the specific requirements laid down in the annexes of the respective directives. In addition, official examination is required, to check the varietal identity and purity (with vegetable seed) or that the requirements in general are met (with material for the vegetative propagation of the vine).

When Council Directive 68/193/EEC on the marketing of material for the vegetative propagation of the vine was amended by Council Directive 2002/11/EC in 2002, the category 'initial' propagating material was added to the categories of vine propagating material. What distinguishes such material from the other categories of material in the directive is that it is to be used for the production of either basic or certified propagating material. After the amendments, basic propagating material must be obtained directly from initial material. To be put on the market, vine propagation material must be officially certified as 'initial', 'basic' or 'certified' material/seed or be officially checked standard material/seed.

In the case of vegetable seed, such seed can be certified, verified as standard seed and marketed only if it is from a variety that has been officially accepted in at least one member state, and the national catalogues of officially accepted varieties shall distinguish between varieties whose seed might be certified as either 'basic' or 'certified' seed or verified as 'standard seed' and varieties whose seed may be verified only as 'standard seed'. Council Directive 2002/55/EC further specifies that the seed of industrial chicory can be certified only as 'basic' or 'certified' seed.

Council Directive 92/34/EEC of 28 April 1992 on the marketing of fruit-plant propagating material and fruit plants intended for fruit production deviates slightly from the other directives that operate with the categories 'basic' material/seed and 'certified' material/seed in that it also uses the category 'pre-basic' material, which is material intended for the production of 'basic' material or 'certified' material other than fruit plants (thus, quite similar to the category of 'initial' propagating material mentioned above). In addition, there is an additional category 'CAC (*Conformitas*)

Agraria Communitatis) material’ – referring to propagating material and fruit plants which have varietal identity and adequate varietal purity and are intended for the production of propagating material, the production of fruit plants and /or the production of fruits and satisfy the specific requirements to be established for genus and species for such material. It is specified that propagating material can be marketed only if officially certified as ‘pre-basic’, ‘basic’ or ‘certified’ material or if it qualifies as ‘CAC material’, and that fruit plants can be marketed only if they are officially certified as ‘certified’ material or qualify as ‘CAC material’.

2.1.3 Definitions of marketing

One of the most central terms in the EU legislation of the marketing of seed and plant propagating material, is, naturally, ‘marketing’. Altogether, four slightly different definitions of this term are offered in the eleven vertical directives¹⁵ that regulate the marketing of various categories of seed and plant propagating material. The four directives from 2002 and the two from 1966 as amended by Council Directive 98/95/EC, as well as the one from 1968 as amended by Council Directive 2002/11/EC and the recast version of Council Directive 92/34/EEC, all use the same wording, whereas the remaining one from 1992 provides another and those from 1998 and 1999 contain yet another two definitions.

The oldest of these definitions, the one used in Council Directive 92/33/EEC of 28 April 1992 on the marketing of vegetable propagating and planting material, other than seed, defines marketing as ‘the holding available or in stock, displaying or offering for sale, selling and/or delivering to another person, in whatever form, of propagating or planting material/propagating material or fruit plants’ (Council Directive 92/33/EEC: Article 3).

Council Directive 1998/56/EC of 20 July 1998 on the marketing of propagating material of ornamental plants deviates slightly here, defining marketing as ‘sale or delivery by a supplier¹⁶ to another person’ (Council Directive 1998/56/EC: Article 2), with ‘sale’ defined as ‘holding available or in stock, display with a view to sale, offering for sale’ (Council Directive 1998/56/EC: Article 2). Thus, the elements covered are the same although the organization of the definition is different, but the 1998 definition contains the limitation ‘by a supplier’. This is the only directive where such limitation has been included in the definition of ‘marketing’. As a result, the rules for marketing of propagating material of ornamental plants do not apply to the sale of such material by those not professionally engaged in the sale or import of such material.

¹⁵ The horizontal directive, Council Directive 2002/53/EC on the common catalogue of varieties of agricultural species, does not contain any definition of this term. According to the FCEC evaluation, this is because it is seen as a support directive and it was deemed unnecessary to include such a definition. However, the evaluation concludes that for the sake of thoroughness, clarity and consistency a definition should be added (FCEC 2008).

¹⁶ This directive defines a supplier as ‘any natural or legal person engaged professionally in marketing or importing of propagating material’ (Council Directive 98/56/EC: Article 2).

The last directive from the 1990s, Council Directive 1999/105/EC of 22 December 1999 on the marketing of forest reproductive material, defines marketing as ‘display with a view to sale, offering for sale, sale or delivery to another person including delivery under a service contract’ (Article 2). Here the element ‘holding available or in stock’ is not included, while the element ‘delivery under a service contract’ has been added.

The most recent definition of the term is offered in the directives from 2002,¹⁷ but was also included in Council Directives 66/401/EEC and 66/402/EEC following the amendments of Council Directive 98/95/EC¹⁸, Council Directive 68/193/EEC following the amendments of Council Directive 2002/11/EC, and is present in the recast version of Council Directive 92/34/EEC from 2008.¹⁹ These eight directives define marketing as ‘the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of seed²⁰ to third parties, whether or not for consideration²¹’ (see e.g. Council Directive 2002/54/EC: Article 2). In addition, it is specified that trade in seed/propagating material ‘not aimed at commercial exploitation of the variety’ (e.g. in Council Directive 2002/54/EC: Article 2) should not be regarded as marketing. Supply of seed/propagating material to official testing and inspection bodies and to providers of services for processing or packaging are mentioned as examples of operations that are covered by this exemption. The supply of seed to service providers for industrial purposes is also mentioned as an activity that does not fall in the category ‘marketing’.

Compared to the definitions provided in the older directives, this definition is more detailed as it also contains information about the types of activities that do not fall into the category ‘marketing’. When it comes to the elements included in the definition of ‘marketing’ itself, this newest definition does not contain a reference to ‘display’, and where the other definitions refer to ‘delivery’, this definition uses the phrase ‘any disposal, supply or transfer’. This definition has also substituted ‘to another person’ with ‘to third parties’. Moreover, it is the only definition where the limitation ‘aimed at commercial exploitation’ has been included.

¹⁷ Council Directive 2002/54/EC of 13 June 2002 on the marketing of beet seed, Council Directive 2002/55/EC of 13 June 2002 on the marketing of vegetable seed, Council Directive 2002/56/EC of 13 June 2002 on the marketing of seed potatoes and Council Directive 2002/57/EC of 13 June 2002 on the marketing of seed of oil and fibre plants

¹⁸ With the addition of this definition to these two directives, it applies to all the vertical directives regulating the marketing of seed (as opposed to propagating material).

¹⁹ Council Directive 2008/90/EC on the marketing of fruit-plant propagating material and fruit plants intended for fruit production (recast version)

²⁰ Or, in the case of material for the vegetative propagation of the vine, ‘propagating material’, and fruit-plant propagating material and fruit plants intended for fruit production ‘propagating material or fruit plants’.

²¹ According to the FCEC evaluation, the rather confusing phrase ‘whether or not for consideration’ came about when the original French/German text was translated into English. In other EU legislation the phrase used is ‘whether in return of payment or free of charge’ (FCEC 2008).

However, as the term ‘aimed at commercial exploitation (of the variety)’ is not really defined in the directives and the examples offered cannot be assumed to be exhaustive, it is not clear what limitations this places on the definition of ‘marketing’ as regards beet seed, vegetable seed, seed potatoes, fodder-plant seed, cereal seed, and seed of oil and fibre plants.

It is also worth noting that none of these definitions refers specifically to import, although there is a general understanding that ‘marketing’ encompasses ‘importing’. According to the FCEC evaluation, the explanation for this omission lies in the long history and evolution of EU seed legislation, as direct import of seed from other continents was unheard of when the first directives were drafted (FCEC 2008).

As all the directives in question are still in force, the various definitions offered are all equally valid. Although the different definitions apply to different crops, this situation does make it more difficult to navigate the complexities of current EU legislation in this area. A reformed legal framework, for example in the form of an EU seed law, would most likely provide clarity with regard to such definitions: this illustrates how reform might make EU seed legislation more easily understandable to stakeholders.

2.2 Directives aimed at the conservation of genetic resources

In addition to the twelve basic directives, the EU has introduced legislation aimed at the *in situ* conservation and sustainable use of plant genetic resources for food and agriculture. This dates back to 1998, when Council Directive 98/95/EC²² established that ‘it is essential to ensure that plant genetic resources are conserved’ and that ‘a legal basis to that end should be introduced to permit, within the framework of legislation on the seed trade, the conservation, by use *in situ*, of varieties threatened with genetic erosion’ (Directive 98/95/EC: preambular paragraph 17). This directive amended the directives on the marketing of beet seed, fodder-plant seed, cereal seed, seed potatoes, seed of oil and fibre plants and vegetable seed, as well as the directive on the common catalogue of varieties.²³ For all the crop types mentioned it introduced the possibility of establishing specific conditions for the marketing of seed in relation to *in situ* conservation and the sustainable use of plant genetic resources. It was specified that included in the conditions for such marketing must be the requirement that ‘the seed of these species shall be of a known provenance approved by the appropriate Authority in each Member State for the marketing the seed in defined areas’, as well as ‘appropriate quantitative restrictions’

²² The full title is ‘Council Directive 98/95/EC of 14 December 1998 amending, in respect of the consolidation of the internal market, genetically modified plant varieties and plant genetic resources, Directives 66/401/EEC, 66/402/EEC, 66/403/EEC, 69/208/EEC, 70/457/EEC and 70/458/EEC on the marketing of beet seed, fodder plant seed, cereal seed, seed potatoes, seed of oil and fibre plants and vegetable seed and on the common catalogue of varieties of agricultural plant species’.

²³ The amendments were made with regard to the consolidation of the internal market, genetically modified plant varieties and plant genetic resources.

(both Council Directive 98/95/EC: Article 1, paragraph 24).²⁴ Interestingly, the amendments of Directive 66/400/EEC (on beet seed), Directive 66/401/EEC (on fodder plant seed), Directive 66/402/EEC (on cereal seed), Directive 66/403/EEC (on seed potatoes) and Directive 69/208/EEC (on seed of oil and fibre plants) state that specific conditions *may* be established, whereas in the corresponding paragraph in the article amending Directive 70/458/EEC (on vegetable seed) the wording is that specific conditions *shall* be established. This wording is also used in the article amending Directive 70/457/EEC (on the common catalogue). Five of the directives amended by Council Directive 98/95/EC were updated in 2002 (see timeline in Chapter 4).

2.2.1 Derogations for agricultural species

It would take another ten years, and twelve drafts (Lorenzetti and Negri 2009), before the member countries further developed these principles and it was possible to promulgate Commission Directive 2008/62/EC of 20 June 2008 providing for certain derogations for acceptance of agricultural landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion and for marketing of seed and seed potatoes of those landraces and varieties.

This directive covers the agricultural species regulated by Directives 66/401/EEC, 66/402/EEC, 2002/54/EC, 2002/56/EC and 2002/57/EC: fodder plants, cereals, beets, potatoes, and oil and fibre plants, and ‘lays down certain derogations in relation to the conservation *in situ* and the sustainable use of plant genetic resources through growing and marketing’ (Commission Directive 2008/62/EC: Article 1). In this context the following derogations are mentioned: to accept for inclusion in the national catalogues of varieties of agricultural plants species, landraces and varieties which are naturally adapted to the local and regional conditions and are threatened by genetic erosion, and the marketing of seed and seed potatoes of such landraces and varieties.²⁵ Such landraces and varieties are to be referred to as ‘conservation varieties’ in the common catalogue of varieties of agricultural plant species.

To be accepted as a conservation variety the landrace or variety in question must fulfil certain requirements. The first of these is that it must ‘present an interest for the conservation of plant genetic resources’ (Commission Directive 2008/62/EC: Article 4). And although the member states are free to adopt their own provisions regarding distinctness, stability and uniformity for conservation varieties, certain minimum standards apply. Member states are also obligated to carry out official post control of seed by random inspections for the purpose of verifying varietal identity and varietal purity.

²⁴ This is the article amending Directive 66/400/EEC (on beet seed), but the same phrasing is also used in the paragraphs amending Directive 66/401/EEC (on fodder plant seed), Directive 66/402/EEC (on cereal seed), Directive 66/403/EEC (on seed potatoes), Directive 69/208/EEC (on seed of oil and fibre plants) and Directive 70/458/EEC (on vegetable seed).

²⁵ For the definitions of the terms ‘conservation *in situ*’, ‘genetic erosion’ and ‘landrace’ provided in Commission Directive 2008/62/EC, see Annex 2.

In addition, procedural requirements must be met. If the information provided by the applicant is sufficient for determining whether the landrace or variety can be accepted as a conservation variety, no official examination is required. The necessary information consists of a description of the conservation variety and its denomination, results of unofficial tests, knowledge gained from practical experience and other relevant information (e.g. provided by the relevant authorities or organizations recognized for this purpose by the member state).

When a conservation variety is accepted, the member state must identify the region or regions where the variety has historically been grown and to which it is naturally adapted: this area shall be called the 'region of origin'.²⁶ This concept is central to implementation of the directive, as seed of a conservation variety, with some exceptions,²⁷ can be produced and marketed only in the region of origin. In addition, the directive specifies that 'Member States shall ensure that a conservation variety must be maintained in its region of origin' (Commission Directive 2008/62/EC: Article 9).

With regard to certification, Commission Directive 2008/62/EC refers to the vertical directives covering the various agricultural species²⁸ and their requirements for certification of certified seed. The seed of a conservation variety²⁹ shall in general comply with these requirements, except those concerning varietal purity and official examination or examination under official supervision. Despite these exceptions, it is specified that the seed must have sufficient varietal purity, although what qualifies as 'sufficient' is not defined. The seed must also descend from seed produced in line with 'well defined practices for maintenance of the variety' (Article 10). For seed potatoes, it is further specified that member states may disregard the size requirements of Council Directive 2002/56/EC.

Although official examination or examination under official supervision is not required, member states must make sure that tests are carried out to ascertain compliance with the requirements. In this connection, samples must be drawn from homogeneous lots.

²⁶ When the region of origin is located in more than one member state, the area shall be identified by all concerned member states by common accord. In both cases the Commission must be informed about the identified region.

²⁷ If the conditions for certification cannot be fulfilled in the region of origin due to a specific environmental problem, additional regions may be approved for seed production by the member state (seed produced in those regions must then be exclusively used in the region of origin); additional regions in a member state's own territory may be approved for marketing of seed if those regions are comparable to the region of origin as regards the natural and semi-natural habitats of the variety in question. However, a member state that makes use of the first exception (for seed production), cannot make use of the second exception (for seed marketing).

²⁸ Directives 66/401/EEC, 66/402/EEC, 2002/54/EC, 2002/56/EC and 2002/57/EC

²⁹ The only exception is seed of *Oryza sativa* (rice), which shall comply with the requirements of Directive 66/402/EEC for certification of 'certified seed, second generation' (with the exception of the requirements for minimum varietal purity and examination).

Commission Directive 2008/62/EC also imposes quantitative restrictions on the marketing of seed of conservation varieties. For each conservation variety, the amount of seed marketed cannot exceed 0.5%³⁰ of the seed of the same species used in the member state in question in one growing season, or the amount necessary to sow 100 ha, whichever is the greater amount. The marketing of seed of conservation varieties is further restricted by the specification that the total amount of seed of conservation varieties marketed in each member state cannot exceed 10% of the seed of the species in question used each year in the member state. If that should lead to an amount lower than what is required to sow 100 ha, the maximum amount of seed may be increased to reach the amount needed to sow 100 ha.

These quantitative restrictions also place a certain administrative burden on the stakeholders involved, as seed producers must notify the authorities ahead of each production season about the size and location of their area for seed production, and suppliers must report the amount of seed marketed of each conservation variety for each production season.

It can also be noted that although the term ‘supplier’ is used in the directive, for example in connection with the provisions concerning sealing and labelling of seed packages and the reporting of produced seed, no definition of this term is provided.³¹ Due to the requirements that suppliers of seed must fulfil, some professionalism and resources are needed, but there is nothing in Commission Directive 2008/62/EC³² that otherwise restricts individuals, institutions or organizations from participating in the seed sector as suppliers.

2.2.2 Derogations for vegetable species

Commission Directive 2008/62/EC was followed by two other directives related to the marketing of seed and conservation of plant genetic resources. The first of these was Commission Directive 2009/145/EC of 26 November 2009, which provided for certain derogations, for acceptance of vegetable landraces and varieties which have been traditionally grown in particular localities and regions and are threatened by genetic erosion, and for acceptance of vegetable varieties with no intrinsic value for commercial crop production but developed for growing under particular conditions, and for marketing of seed of those landraces and varieties. Unlike Commission Directive 2008/62/EC, this directive provides derogations for two different categories of varieties.

With regard to the first category, the requirements put in place for vegetables with the promulgation of Directive 2009/145/EC are very similar to those of Directive 2008/62/EC. This is true with regard to

³⁰ The percentage is 0.3% for some species (*Pisum sativum*, *Triticum* spp., *Hordeum vulgare*, *Zea mays*, *Solanum tuberosum*, *Brassica napus* and *Helianthus annuus*).

³¹ This is also the case for Directives 66/401/EEC, 66/402/EEC, 2002/54/EC, 2002/56/EC and 2002/57/EC.

³² For further details concerning the provisions of Commission Directive 2008/62/EC, see Annex 2.

definitions and substantive requirements, as well as procedural requirements, region of origin, and seed production and marketing. To be classified as ‘conservation varieties’, vegetable landraces or varieties must have a connection to a specific territory³³ and be threatened by genetic erosion, and must also ‘present an interest for the conservation of plant genetic resources’ (Commission Directive 2009/145/EC: Article 4). Also for vegetables, member states are allowed to adopt their own rules regarding DUS for conservation varieties, but certain minimum standards must be followed here as well. The term ‘region of origin’ is central in this directive as well, and member states are required to identify one or more region (s) of origin for each accepted conservation variety, defined as a place where the variety has ‘historically been grown and to which is it naturally adapted’ (Directive 2009/145/EC: Article 8). Conservation varieties of vegetables are also expected to be maintained in their respective region of origin and seed of these conservation varieties can be produced only in the respective region or regions of origin. In addition, marketing must take place in the region(s) of origin. However, member states may approve additional regions for marketing if those regions have habitats comparable to those of the region(s) of origin.

The quantitative requirements for vegetable conservation varieties of Commission Directive 2009/145/EC are slightly different from and somewhat simpler than those of Commission Directive 2008/62/EC. For each vegetable conservation variety, the amount of seed marketed per year in a member country is not to exceed the amount necessary to produce vegetables on 10, 20 or 40 hectares, depending on the species.³⁴

The second category of varieties for which Commission Directive 2009/145/EC provides derogations is ‘varieties with no intrinsic value for commercial crop production but developed for growing under particular conditions’ (Directive 2009/145/EC: Article 1). These varieties are called ‘varieties developed for growing under particular conditions’, and the directive provides derogations for how such varieties can be accepted for inclusion in the national catalogues of varieties of vegetable species and marketed: the particular conditions in question are specified as being agro-technical, climatic or soil conditions. For such varieties, production and marketing in a ‘region of origin’ is not mentioned, and the quantitative restrictions are built around maximum net weight and the requirement to market such seed in small packages – but otherwise the rules are quite similar to those regulating vegetable varieties classified as ‘conservation varieties’.

³³ In Directive 2008/62/EC the phrase used is ‘landraces and varieties which are naturally adapted to the local and regional conditions’ (Article 1), while in Directive 2009/145/EC it is ‘landraces and varieties which have been traditionally grown in particular localities and regions’ (Article 1).

³⁴ See Annex 1 of Commission Directive 2009/145/EC for specification of which species belong in which group.

2.2.3 *Derogations for fodder-plant seed mixtures*

The third directive is Commission Directive 2010/60/EU of 30 August 2010, which provides for certain derogations for marketing of fodder-plant seed mixtures intended for use in the preservation of the natural environment. This directive opens up for marketing of certain seed mixtures, in the directive called 'preservation mixtures', for the purpose of recreating the habitat type of authorized sites in connection with the conservation of genetic resources. In this sense it differs from Directive 2008/62/EC and Directive 2009/145/EC where, although the purpose is to ensure *in situ* conservation and sustainable use of plant genetic resources, the seed sold will often be used for the production of produce.

Certain requirements must be fulfilled by these preservation mixtures as well. In connection with the authorization of a preservation mixture, a region of origin must be identified, here defined as the region the mixture is naturally associated with, and it is in this region marketing may be authorized.

In addition, various authorization measures are listed for the two types of preservation mixtures: directly harvested preservation mixtures, and crop-grown ones. Directly harvested preservation mixtures must be collected in its source area, defined as an area designated by the member state as a special area of conservation or an area that contributes to the conservation of plant genetic resources, in its region of origin; here the proportion of components and the germination rate should be as needed for the purpose of recreating the habitat type in question.

For crop-grown mixtures the requirements are similar: the seed that the mixture seed is grown from must have been collected in the sources area in the region of origin, and the seed mixture should be of importance for the preservation of the natural environment. In addition, it is here specified that multiplication might take place for five generations.

For both types of preservation mixtures a time limit is set, in that the collection site cannot have been sown for 40 years at the time of application. Quantitative restrictions are imposed by this directive as well, along with requirements concerning sealing and labelling.

2.2.4 *Summary*

These three directives provide marketing opportunities for certain types of varieties and seed that do not fulfil the standard requirements, and specify under which conditions such marketing may take place. However, given the current situation, the marketing of such seed will still be on a relatively modest scale.

3 EU seed legislation review

The review of EU legislation on the marketing of seed and propagating material currently being conducted is likely to result in legislative reform. An external evaluation of the EU legislation on the marketing of seed and propagating material was carried out by a Food Chain Evaluation Consortium (FCEC) team headed by Arcadia International from December 2007 to August 2008, and one of the conclusions of this evaluation was that the legislation ought to be modified (FCEC 2008). This conclusion was in general supported at the conference organized on 18 March 2009 as a follow-up to the evaluation, ‘European Conference on Ensuring Seed Availability in the 21st Century’, where the evaluation results were presented and discussed (Commission of the European Communities 2009).

An ‘Action Plan for Review of the Community legislation on marketing of seed and plant propagating material and related issues’ was then approved in July 2009 within the Directorate General for Health and Consumers (DG SANCO) and on 2 October 2009 presented to the EU member states during a Council Working Group meeting (DG SANCO 2011). This action plan outlines a work programme with a time frame of two and a half years; the stated overall objective is to develop a single horizontal legal framework for the marketing of seed and plant propagating material – an EU Seed Law (Commission of the European Communities 2009).

To give various stakeholders and the general public the opportunity to provide inputs to the Impact Assessment, the DG SANCO then published the document ‘Options and Analysis of Possible Scenarios for the Review of the EU Legislation on the Marketing of Seed and Plant Propagating Material’ on its website³⁵, along with a questionnaire with a 30 May 2011 response deadline. The ‘Options’ document outlines and analyses five scenarios for modification of EU legislation on marketing of seed and propagating material, and invites feedback on several issues (DG SANCO 2011a and DG SANCO 2011b). The inputs received through this consultation process are intended to enable the Commission services to develop ‘a well-founded proposal for a comprehensive review of the legislation, in view of discussion and adoption by the European Parliament and Council’ (DG SANCO 2011b: 3).

The review of the EU seed legislation might be affected by the court case *Association Kokopelli vs. Graines Baumaux SAS*, so a few words are in order here. Association Kokopelli³⁶ is a French non-governmental organization which produces and distributes seeds of old varieties, and Graines Baumaux³⁷ is a French seed company that specializes in vegetable seed. Many of the varieties distributed by Association Kokopelli have not been officially accepted and certified, and Graines Baumaux has charged the organization with unfair competition. Through this case, the validity of the prohibition on the marketing of seed from non-registered

³⁵ See http://ec.europa.eu/food/plant/propagation/evaluation/index_en.htm

³⁶ See www.kokopelli-seeds.com/ and http://kokopelli-semences.fr/who_are_we

³⁷ See www.graines-baumaux.fr/presentation

varieties, one of the most central principles of the current EU seed legislation, has been considered by the Court of Justice of the European Union. The case and the judgment of the Court will be presented in 3.6.

3.1 The FCEC evaluation

The aim of the evaluation of the Community *acquis* on the marketing of seed and plant propagating material (hereafter ‘the FCEC evaluation’) was to find out ‘how effectively and efficiently the legislation has met its original objectives and to identify its strengths and areas for improvement and its robustness with regard to potential new challenges affecting this field’ (FCEC 2008: 2). Because it was conducted within the context of the Better Regulation initiative of the Community, it also sought to identify current and future difficulties and needs and to suggest how the Community could respond. Social, environmental and economic consequences were all taken into consideration when the various options were evaluated; feasibility, stakeholder support, strengths and weaknesses were also considered (FCEC 2008).

3.1.1 Stakeholder consultation

Central to the evaluation was a comprehensive stakeholder consultation consisting of a qualitative survey (244 responses were analysed), a cost survey (with 38 return questionnaires) and 55 interviews. This consultation showed that a majority of the stakeholders consulted felt that EU seed legislation has been effective in achieving improved agricultural productivity, increased competitiveness of related sectors and harmonization for the purpose of more open markets. However, stakeholders involved with crops of minor importance, niche and emerging markets underlined that the current costs of registration and certification are disproportionately high when viewed in terms of the market size of landraces, populations or organic varieties.

A majority of the stakeholders interviewed also felt that the system created by the EU seed legislation, where the data to be evaluated are produced by official authorities, is to be preferred because it levels the playing field and promotes equal access to the EU seed market for all players regardless of size. In addition, VCU and DUS requirements were generally seen as important and useful tools for conventional agriculture with regard to ensuring agronomic performance and establishing varietal identity. A majority of the stakeholders consulted therefore wanted to maintain the DUS and VCU provisions (FCEC 2008).

Nevertheless, quite a few respondents indicated that some DUS requirements had limited the marketing of varieties of interest to users. Among other things it was mentioned that these requirements generally limit the marketing of adaptive populations – like many conservation varieties, amateur varieties and landraces – which build on genetic diversity instead of uniformity and stability. It was also mentioned that the distinctness requirement serves to restrict the marketing of gradual improvements in the agronomical description of the same variety (FCEC 2008).

To address the issue of what were seen as overly strict rules for uniformity, stakeholders active in organic farming recommended that this requirement be made optional and that a system for traceability be developed that could inform the user about the origin of the variety in question, the varieties used to breed it and the specific breeding methods employed. The rationale was that this would allow the greater marketing of conservation varieties, amateur varieties and landraces, thereby widening the users' choice (FCEC 2008).

Also with regard to the VCU provision some concerns were raised during the consultation. For organic and other forms of alternative agriculture, the requirement was seen as an obstacle to the release of varieties of interest. The VCU trials for example do not allow for the selection of low-input varieties, as the examination conditions and the examined characteristics are poorly suited for such varieties. It was also noted that in general there has been too much focus on yield and quality: in the future, broader assessments should be done; further, because trials last for two years, they do not evaluate 'yield stability' (FCEC 2008).

Due to problems involving the VCU trials, stakeholders in niche markets wished for greater flexibility in the VCU system. Among the suggested ways to achieve this were to review the VCU criteria periodically with regard to relevance for end market requirements, to set up specific networks for specific varieties, to consider private data submitted by applicants and to make the costs of niche varieties more proportionate to their market. Increased flexibility was viewed as necessary to allow the marketing of niche varieties (for which VCU testing in its current form might be irrelevant or too costly), and so as not to restrict the development of new varieties.

The qualitative survey also showed that, on the whole, the stakeholders consulted did not want changes in the vegetable-sector systems for evaluation of new varieties based on user cooperation, which are exempt from the VCU requirements (as these apply only to agricultural crop species, although some such requirements are included in the DUS protocols for vegetables) (FCEC 2008).

The stakeholder consultation also showed that private operators – small and medium-sized enterprises in particular – saw the Common Catalogues as powerful tools for the marketing of seed and propagating material.

There was also general agreement that the certification provisions of the EU legislation had contributed, by establishing rules and operating practices, to make the conventional European seed industry a leader on the world market, as a result of the high quality and health of its products and the confidence of buyers. Certification standards were perceived as relevant by a majority (except with regard to the standards for fruit plants), and a substantial majority of the respondents were in favour of maintaining both the certification structure and the certification standards of the EU legislation. Some suggestions were nonetheless deemed to be worthy of future discussions and analysis (FCEC 2008).

As for concerns related to agricultural biodiversity, also with regard to certification, stakeholders active in niche and emerging markets saw current costs as disproportionate to the market size of niche varieties like landraces and organic varieties. It was also mentioned that the lack of legislation on certification of conservation varieties had made the marketing of such varieties difficult. One suggestion discussed was to remove species of minor economic importance or species for which certification adds no additional value from the directives. It was for example suggested to remove from Council Directive 66/402/EEC subspecies with special end-uses for niche markets. It was also suggested that subspecies with special end-uses for organic farming or adapted to local conditions should be shifted to a list with less stringent rules. And although most respondents opposed the introduction of a voluntary certification scheme, some felt that the flexibility needed for alternative farming practices could be provided by maintaining mandatory certification for non-direct sales and mass seed sales whereas certification would be voluntary for small quantities, niche markets and direct sales (FCEC 2008).

With regard to the revision of the EU seed legislation in general, the aims that received most support from the stakeholders consulted were productivity, plant health and sufficient quality of seed and plant propagating material. However, it was also argued that legislation should be sufficiently flexible and that improving agricultural biodiversity will be important to mitigation efforts related to climate change and to reducing chemical inputs (FCEC 2008).

The FCEC evaluation also briefly addressed Commission Directive 2008/62/EC, which had just been approved when the evaluation was conducted. Among stakeholders, there was some concern that the new directive would undermine the main commercial system for introducing new varieties and would offer a quick and cheap way for varieties to be registered. Concerns were also voiced regarding specific provisions: some stakeholders preferred a longer interval before a variety that has been removed from the Common Catalogue can become a conservation variety, and found the quantitative restrictions to have been set too high (FCEC 2008).

On the other hand, stakeholders involved with organic and low-input varieties considered the quantitative restrictions to be too limiting. It was also believed that it would be difficult for member states to define 'regions' in their implementation of the directive. In addition, there was some concern about the influence of the main commercial breeders, and that implementation would prove unnecessarily restrictive.

3.1.2 Problems and potentials

Although most of the stakeholders consulted felt that the costs associated with implementing EU seed legislation were reasonable, the FCEC evaluation points to the high quality of the seed and propagating material currently produced in the EU as a factor that could enable a reduction of the rather high certification costs. For many member states this issue has become central: for instance, France and the United Kingdom have already taken steps to reduce costs and relieve the administrative burdens

within the limits set by the EU legislation by changing the certification system to one ‘under official supervision’ (FCEC 2008).

In addition to the perceived need to reduce costs, the evaluation also noted other problems and needs with regard to EU seed legislation. Since this legislation was first enacted, the context within which it operates in has changed, and the seed sector is now part of an increasingly international environment that is constantly evolving. New consumer demands, for example related to sustainability, also play a role, as well as developments in biotechnology and plant breeding.

One main problem with the EU seed legislation, as the evaluators see it based on their analysis of the 12 directives and the stakeholder interviews, is its complexity and inadaptability to a changing market. Certain aspects of national implementation were also seen as problematic. The playing field is not level, the FCEC evaluation concludes – because some provisions are not implemented harmoniously, because additional implementation measures exist in some countries, because the national systems for costs and responsibility are not harmonized and there is no proper system for information sharing among member states when it comes to implementation of this legislation. With regard to VCU as well as DUS, member states differ in how these provisions are implemented (FCEC 2008).

The FCEC evaluation also recognizes the negative impact that the legislation can have on cultivation of agricultural biodiversity. Interestingly, FCEC notes that it ‘believes that the two different systems of the large commercial breeding companies and the smaller market or regional breeders and producers could run side by side because they are targeting completely different markets’ (2008: 172). In addition, it suggests that there is a need to make the Common Catalogues more user-friendly (FCEC 2008).

With regard to Commission Directive 2008/62/EC, the FCEC evaluation expresses fears that member states might not understand how to implement it ‘with the flexibility, freedom and adaptability that the Commission intended’ (FCEC 2008: 172), and that, as a result, this directive may prove restrictive.

3.1.3 Recommendations

The FCEC evaluation examined three scenarios with regard to the future of the EU seed legislation: a ‘status quo’ scenario, where the legislation remains unchanged and therefore the current difficulties remain; a ‘suppress’ scenario, where the current EU provisions are suppressed and it becomes up to the member states to retain the national regulations or leave listing and certification up to the market; and a ‘modify’ scenario, where the EU seed legislation is changed (FCEC 2008).

The FCEC evaluation recommends modification of the current legislation: a large majority of the stakeholders do not support suppressing the Community provisions, and having different regulatory approaches at the national level might threaten the internal market and decrease transpar-

ency; choosing the ‘status quo’ scenario is not in line with the Better Regulation initiative, and most stakeholders prefer to change the current EU legislation. The FCEC evaluation underlines the need to focus more on the specificities of the various crop sectors and to take account of the segmentation of food and other markets by simplifying EU legislation, as well as introducing ‘adaptability within the regulatory framework in order to address the specific needs of the different sectors in a fast changing environment and to adjust cost to the size of the targeted markets’ (FCEC 2008: 6).

As possible objectives for a modification scenario the FCEC evaluation therefore suggests simplification of the current EU legislation, introducing flexibility within the regulatory framework, reducing implementation differences among member states, promoting cost-reduction approaches, securing long-term consistency with other EU policies, and finalizing the discussion of the possible extension of the role of the Community Plant Variety Office (CPVO) and how to make the seed and propagating material sector benefit from the CPVO expertise and improve information to users. In the FCEC evaluation’s assessment of the various implementing options associated with these objectives, it is only the options for introducing greater flexibility that are associated with increased agricultural biodiversity. The implementing options for this objective are presented as being to make the official rules for uniformity more flexible, ‘to make the VCU rules evolve to adapt to any type of agriculture and to test varieties created by new technologies’ (FCEC 2008: 182) and to ‘adapt the requirement for the marketing of seed to defined categories’ (FCEC 2008: 182). Further, the first two options will lead to greater diversity in available varieties, and as a result the various agronomic needs of farmers will more easily be met, whereas the third option is believed to offer greater genetic diversity in commercial varieties (FCEC 2008).

3.2 European Conference on Seed Availability

The purpose of the ‘European Conference on Ensuring Seed Availability in the 21st Century’, organized on 18 March 2009 in Brussels by the DG SANCO, was to present and discuss the findings and recommendations of the FCEC evaluation, to find out what various stakeholders thought of these recommendations. Discussions at the conference then provided input to the process of drawing up the action plan for the review of the Community legislation on the marketing of seed and plant propagating material and identified issues for the impact assessment. In the website introduction to the conference, the Director General, Robert Madelin, emphasized the importance of new priorities like sustainability, good agricultural practices and protection of genetic diversity, in relation to Community seed legislation (DG SANCO 2011c).

At the conference, issues like the current and potential future situation of the seed markets in Europe and internationally, recent developments in plant breeding and international standards related to global certification of seed were discussed, and then the results of the FCEC evaluation were presented. After the presentation of the evaluation results and recommendations, these were discussed, and then stakeholder representatives presented their own views and expectations regarding the future. After

another discussion, conclusions and possible next steps were outlined (DG SANCO 2011d). As noted, stakeholder representatives in general supported a revision of the Community legislation on the marketing of seed and plant propagating material (Commission of the European Communities 2009).

3.3 The Action Plan

The Action Plan for Review of the Community legislation on marketing of seed and plant propagating material and related issues was approved in July 2009 within the DG SANCO and on 2 October 2009 presented to the EU member states (DG SANCO 2011). The background section of this document reiterates the objective of revising the Community legislation on the marketing of seed and plant propagating material. Further, it is emphasized that the Council has acknowledged the findings of the FCEC evaluation and welcomed the Commission's intention of undertaking an impact assessment and develop a proposal intended to lead to simpler legislation and reduced administrative burdens for all stakeholders (Commission of the European Communities 2009).

Central to the Action Plan is the goal of creating a modern, harmonized framework for marketing of seed and plant propagating material which should be easier to implement and understand than the current system. To this end, the plan includes a thorough review of this legislation, emphasizing legislative as well as non-legislative measures.

A collection of clear outcomes is outlined: one single horizontal legal framework for the marketing of seed and propagating material (a seed law); harmonized implementation through audits and training; lower administrative burdens and costs through efficient, effective and flexible procedures; consistency with other EU policies such as those for agriculture, environment, genetically modified organisms, plant health and food safety; an enhanced role for the Common Catalogues as a source of information; greater Community influence on international standards; the establishment of a system for stakeholder involvement and a possible extension of the role of the CPVO to the seed and plant propagating material sector (Commission of the European Communities 2009).

The purposes of the overall objective of developing an EU seed law that, in the form of a Regulation, would replace the current 12 Council Directives are stated as being to ensure the availability of good-quality, healthy seed and plant propagating material; to make sure that user expectations regarding seed and plant propagating material are met; to make a contribution to halting the loss of biodiversity; to achieve harmonized implementation; and to boost economic competitiveness (Commission of the European Communities 2009).

The Action Plan also mentions that the Commission should consider whether it is appropriate to keep the current requirement for seed testing for crops of minor importance, and that part of the work to ensure consistency with other EU policies will involve improving coherence with environmental policies such as those on biodiversity (Commission of the European Communities 2009).

The objectives are recognized as challenging in the Action Plan, not just for the EU institutions and the member states, but for breeders, farmers and other seed users as well (Commission of the European Communities 2009).

The original timeframe was two and a half years. Thus, according to the Plan a legislative proposal for an EU Seed Law should have been ready in 2011 (Commission of the European Communities 2009). However, no proposal has been published as of August 2012.

3.4 ‘Options and Analysis of Possible Scenarios’

As mentioned, the document ‘Options and Analysis of Possible Scenarios for the Review of the EU Legislation on the Marketing of Seed and Plant Propagating Material’ presents and assesses five scenarios for modification of the EU legislation on marketing of seed and propagating material. The analysis presented in the document takes into account the problems identified in the FCEC evaluation, supported by the conference and reiterated in the Action Plan, and notes four key reasons why the current system should be reformed: the complexity and fragmentation of the legislation; the high level of administrative burden for public authorities in particular; the distortions in the internal market created by the non-harmonized implementation; and the room for improvement with regard to sustainability. Agreeing with the FCEC evaluation, the document concludes, that despite the achievements of the current system, the preferred option should be to modify it, as its identified shortcomings would otherwise persist (DG SANCO 2011b).

The paper lists a set of general policy objectives, specific objectives and operational objectives, which build on the objectives in the Action Plan. One of the general policy objectives is listed as being to ‘contribute to improve biodiversity, sustainability and favour innovation’ (DG SANCO 2011b: 7). Among the specific objectives are to improve farmer access to a diversity of varieties, and promote innovative plant breeding that focuses on sustainable cultivation (DG SANCO 2011b). While this indicates that issues related to agricultural biodiversity are considered, the document also underlines that not all the objectives can be realized to the same extent, so prioritizing among them will be necessary; further, until the legislative proposals are presented, it is difficult to offer predictions regarding the priority to be placed on maintaining this diversity.

As already noted, the paper presents five scenarios for modification of EU seed legislation. To make it easier to determine the consequences of the various proposed changes, each scenario has its own key objectives and focus (DG SANCO 2011b).

3.4.1 Scenario 1: cost recovery

The first scenario, ‘cost recovery’, deals with increased competition for available public resources by introducing the principle of full recovery of registration and certification costs. No changes are made to the technical provisions of the existing legislation and responsibility for implementation and control is allocated in the same way, but the public authorities in

all member states recover all incurred costs associated with registration and certification from the stakeholders, perhaps through a mandatory fee system (DG SANCO 2011b).

With regard to probable impacts, this scenario is expected to have a medium positive impact on the administrative burdens and costs for the authorities, and a medium negative impact on the administrative burdens and costs for private-sector operators in countries that have not yet transferred registration and certification costs to the private sector. The major benefit from introducing this scenario is held to be improved competitiveness and trade within the EU as a result of the harmonization of cost recovery (DG SANCO 2011b).

3.4.2 Scenario 2: co-system

Scenarios 2 to 4 focus on a reduction of the administrative burdens for breeders, suppliers and users of seed and plant propagating material. Under scenario 2, which creates a 'co-system', certain tasks (such as DUS and VCU tests) are to be performed by the industry under official supervision, but no changes are made to the technical provisions under this scenario either and the provisions for conservation varieties also remain the same. However, more detailed and harmonized criteria will be developed for VCU testing. In addition, all EU-level administrative tasks will be given to the CPVO, and all breeders and suppliers will be registered so as to allow monitoring and create transparency (DG SANCO 2011b).

As the changes under this scenario are somewhat more deep-going than under the cost recovery scenario, impacts are likely on more areas. It is believed that introducing a co-system will have only minor negative impacts on plant health and the quality of seed and propagating material; further, that the additional cost and workload for the private sector would have only small negative impact. On the other hand, there would be a large positive impact on the administrative burden of the authorities. Overall, the co-system should have a minor positive impact on competitiveness, markets, trade and investments flows and no real impact on innovation and research, as the potential benefits are assumed to outweigh the negative consequences. However, as this scenario could adversely affect the breeding of less profitable varieties, it might have a negative impact on biodiversity. It is also believed that even if parts of the staff made redundant in the public sector by the changes are recruited by the private sector, some jobs would still be lost, so this scenario would have a medium negative impact on employment and jobs in the public sector (DG SANCO 2011b).

3.4.3 Scenario 3: low burden co-system

Scenario 3 is referred to as a 'low burden co-system'. Under this scenario, variety performance testing and official certification will become optional, while harmonized tests are developed and the same tasks as under scenarios 2 are performed by the industry under official supervision. However, testing for identity as part of variety registration will remain obligatory. EU-level administrative tasks regarding variety regis-

tration will be handled by the CPVO. As with scenario 2, all breeders and suppliers will be registered, and the approach to conservation varieties remains the same. In addition, the marketing of ornamentals will be excluded from the scope and become unregulated (DG SANCO 2011b).

Depending on the quality of the inspection work done by the suppliers, the low burden co-system and the resulting abandonment of obligatory health testing could have a slight negative impact on plant health and quality of seed and propagating material. It can also be assumed that this scenario would have a medium negative impact on employment and jobs, as more jobs would be lost in the public sector than the private sector would absorb. However, for the authorities there would be a large positive impact on administrative burdens and costs, while there would be a medium positive impact in this respect for the private sector. It is also believed that this scenario might have a medium positive impact on competitiveness, markets, trade and investment flows, particularly in relation to parts of the world where VCU is not currently a mandatory requirement (such as the United States). There is also a chance that more varieties might enter the market as a result of not being eliminated by obligatory VCU testing. A small positive impact is also expected with regard to innovation and research, as resources previously spent on VCU testing and official certification could now be spent on breeding instead. The environmental impact is assumed to be non-existent; a higher number of marketed varieties might be positive for agricultural biodiversity, but dropping the testing for disease resistance might lead to the marketing of less resistant varieties and greater use of plant protection products (DG SANCO 2011b).

3.4.4 Scenario 4: enhanced flexibility system

One scenario, scenario 4, is meant to enable marketing of conservation varieties to a greater extent than today. The rationale for proposing a seed and plant propagating material category that can be marketed at a very low cost is to offer new opportunities for the commercialization of varieties with smaller markets. This scenario, referred to as the ‘enhanced flexibility system’, introduces basic provisions for registration that are mandatory as well as a voluntary higher level for registration and certification. Thus certification becomes a right that only tested varieties have, instead of being an obligation, and that the national and common catalogues will consist of two sections. The variety description criteria are to be in line with CPVO rules and the rules of the International Union for the Protection of New Varieties of Plants (UPOV) for both sections, but whereas section 1 will consist of varieties that have undergone DUS and VCU testing (for VCU the health and adaptation criteria will be mandatory for these varieties, while the yield and value tests will be optional), section 2 will comprise varieties that have not been tested in the same way and that have been registered on the basis of harmonized descriptions, with only denomination, registration and labelling being checked by competent authorities. As with scenarios 2 and 3, registration will be compulsory for all breeders and suppliers, and EU-level administrative tasks concerning variety registration will be handled by CPVO. This scenario would allow conservation varieties and other heterogeneous or ‘niche’ varieties to be marketed as ‘non-tested’ (DG SANCO 2011b).

The enhanced flexibility system is expected to have positive environmental impacts – a result of the opportunities for marketing of varieties that now fulfil the current criteria, and the introduction of sustainability as part of the screening of tested varieties (DG SANCO 2011b). However, one might question why this positive impact has been rated as ‘minor’.

For non-tested varieties, there is believed to be a certain risk related to plant health and quality of seed and propagating material in the long run. As certification will no longer be mandatory and the quality of the suppliers’ inspection work will be central here as well, the impact is rated as a small negative one. It is also expected that this system would have a medium negative impact on employment and jobs. With respect to administrative burdens and costs, however, the system is expected to have a large positive impact on both the private and the public sectors. The increased flexibility is also expected to have a positive effect on competitiveness, markets, trade and investment flows, as well as on innovation and research (DG SANCO 2011b).

3.4.5 Scenario 5: centralization

In scenario 5, ‘centralization’, the focus is on harmonization, to be achieved through the introduction of a centralized EU registration procedure and certification requirements that are completely harmonized. The CPVO is envisaged as responsible for managing the system and making final decisions, so that applications for registration will be sent directly to CPVO. Testing would still involve DUS and VCU and requirements regarding the certification process and criteria would still be detailed, although compliance control would be conducted by the suppliers under national authority supervision. As with most of the other scenarios, registration of breeders and suppliers would be a component also here. With regard to conservation varieties, the centralization scenario specifies that evaluation of such varieties is to be done according to harmonized criteria, but that, since they have considerable linkage with their region of origin, they should be evaluated in that region (DG SANCO 2011b).

The uniform variety testing and harmonized registration introduced in this scenario are expected to result in more reliable descriptions; this, together with a harmonized and more transparent certification system, is assumed to be beneficial for plant health and the quality of seed and propagating material. A small negative impact, the size of which will depend on how many of today’s testing stations will continue to operate under the new regime, is expected with regard to employment and jobs in connection with the centralization of variety registration. This centralization scenario is also expected to have a medium positive impact on the administrative burdens and costs of authorities, and a small positive impact on the administrative burdens and costs of the private sector operators as they would avoid duplication with regard to variety registration and plant breeders’ rights.

Such a centralized system is assumed to improve transparency and ensure a level playing field across the internal market. The impact of this system

on competitiveness, markets, trade and investment flows is expected to be medium positive. Here one may note that this scenario might lead to a larger proportion of varieties being protected by plant breeders' rights as a result of the reduced incremental costs associated with such protection. The system is also expected to have a small positive impact on innovation and research. However, with respect to biodiversity issues and environmental impact in general the centralization system, as outlined in the Options and Analysis paper, is not expected to have any impact, as market access for conservation varieties and other relevant varieties in this connection would remain unchanged (DG SANCO 2011b).

3.4.6 Overall comparison

Overall, scenario 4 (the enhanced flexibility system) is the scenario for which most positive effects are expected if the presumed impacts under the various areas (plant health and seed quality, employment and jobs, administrative burden and costs for authorities and private sector, competitiveness, markets, trade and investment flows, innovation and market and environmental impact) are seen together. Next follow scenario 5 (the centralization system) and scenario 3 (the low burden co-system). If the positive and negative impacts are counted together, scenario 4 scores a total positive impact of 8, while scenario 5 ends up with a positive impact of 6 and scenario 3 a score of 5. The remaining two receive negative scores.

Moreover, the same ordering is found if the expected achievements of the various scenarios with regard to the stated objectives of the review process are seen together. If the positive and negative impacts are counted, scenario 4 ends up with a total positive impact of 18 measured against the general, specific and operational objectives, while the score for scenario 5 is 17. The other three scenarios score considerably less when measured this way.

All of these score figures on impact derive from the tables in the paper where the various scenarios were rated and compared. However, the positive and negative ratings were not counted together, as has been done here.

The reply sheet that accompanied the options and analysis paper sought respondents' opinions on everything from the definition of problems and objectives to the analysis and comparison of the various scenarios and their impacts.

3.5 The response to the option and analysis paper

Altogether 257 replies to the online consultation on the review of the EU legislation on the marketing of seed and plant propagating material were received by the DG SANCO.³⁸ These are now available on the DG SANCO website.³⁹

³⁸ See DG SANCO website:

http://ec.europa.eu/food/plant/propagation/evaluation/index_en.htm

³⁹ See

http://ec.europa.eu/food/plant/propagation/evaluation/options_review_legislation_replies_en.htm

A quick review of the replies indicates that a majority of the respondents prefer scenario 2 and that the least popular scenarios are scenarios 3 and 5. However, differences with regard to stakeholder groups seem to exist. The European Seed Association (ESA) for example, gives its best rating to scenario 2, and goes on to state that the best solution would be to combine features from scenario 2 and scenario 5. Among other things, the ESA offers the opinion that ‘the issue of niche markets is overestimated throughout the paper.’⁴⁰ As regards the objectives of the review, improving farmers’ choice and access to a wide diversity of plant varieties is seen as an inappropriate goal: the focus should be on ‘varieties which are beneficial, fit for use and fit for sustainable intensification’⁴¹ rather than on achieving broader diversity. Scenario 4 is the option criticized in most detail by the ESA: this scenario ‘seems to focus on turning existing niche markets into large markets’.⁴²

By contrast, most stakeholders involved in the conservation of plant genetic diversity seem to prefer scenario 4, or a scenario with new features based on scenario 4. Such stakeholders include seed savers’ associations,⁴³ the European Consortium for Organic Plant Breeding,⁴⁴ Association Kokopelli⁴⁵ and European Coordination Via Campesina.⁴⁶ The European Consortium for Organic Plant Breeding emphasizes that it would be logical to differentiate between the requirements for seed and plant propagating material with relatively high market shares, and seed and plant propagating material for quite small niche markets, with stricter requirements for the former than for the latter. As opposed to the ESA, Association Kokopelli argues that the issue of biodiversity and the need to strengthen sustainability is underestimated in the options and analysis paper, and that current legislation has led to a dramatic loss in crop

⁴⁰ ESA questionnaire, page 3:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/ESA_EuropeanSeedAssociation.pdf

⁴¹ ESA questionnaire, page 4:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/ESA_EuropeanSeedAssociation.pdf

⁴² ESA questionnaire, page 5:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/ESA_EuropeanSeedAssociation.pdf

⁴³ Both the Irish Seed Savers Association (their responses can be found here: http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/IrishSeedSaversAssociation.pdf) and the Danish Seed Savers Association (their responses can be found here:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/DanishSeedSaversAssociationFrosamlerne.pdf) are among the organizations that prefer scenario 4.

⁴⁴ Their responses can be found here:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/EuropeanConsortiumforOrganicPlantBreeding.pdf

⁴⁵ Their responses can be found here:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/KokopelliFrance.pdf

⁴⁶ Their responses can be found here:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/EuropeanCoordinationViaCampesina.pdf

diversity. The association prefers scenario 4, but would like to see some changes made to it: there should be no application of UPOV rules in connection with the registration of non-tested varieties, and they stress the importance of not confusing intellectual property rules and seed market regulation. In addition, this organization underlines the need for excluding ‘non-professional uses of seeds’ from the scope of the revised legislation.⁴⁷

It should also be noted that many respondents indicate that they do not know which scenario they prefer or that all scenarios are equally undesirable. Many also respond that they prefer a combination of scenarios, or scenarios with new features.

3.6 The Kokopelli court case and its impact

In 2005 Association Kokopelli was brought to court by Graines Baumaux, on grounds of unfair competition, after Graines Baumaux had discovered that Association Kokopelli was distributing seeds from 461 varieties that had not been registered in the national catalogue. The company claimed lump-sum damages of a total of EUR 50,000, as well as seeking to stop Association Kokopelli from advertising its varieties. In its decision the Nancy Regional Court awarded Graines Baumaux EUR 10,000 in damages, but dismissed the other claims.⁴⁸

This decision was appealed by Association Kokopelli to the Nancy Court of Appeals, and during the appeal proceedings reference was made to the Court of Justice of the EU⁴⁹ for a preliminary ruling.⁵⁰ The question concerned Council Directives 98/95/EC, 2002/53/EC and 2002/55/EC and Commission Directive 2009/145/EC, and their validity ‘in the light of the following fundamental rights and principles of the European Union, namely, freedom to pursue an economic activity, proportionality, equal

⁴⁷ Association Kokopelli responses, page 4:

http://ec.europa.eu/food/plant/propagation/evaluation/docs/stakeholder_replies_2011/KokopelliFrance.pdf

⁴⁸ See Opinion of Advocate General Kokott delivered on 19 January 2012: [http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML)

⁴⁹ The Court of Justice of the EU is made up of one judge per member country. Each judge is appointed for a term of six years, which can be renewed. The Court interprets EU law to ensure it is applied in the same way in all member countries. See http://europa.eu/about-eu/institutions-bodies/court-justice/index_en.htm

⁵⁰ This case falls in the category of a reference for a preliminary ruling, as a national court has requested the Court of Justice of the EU to check the validity of acts of EU law. When a national court is in doubt about the validity or interpretation of an EU law it can, and is sometimes obliged to, refer the matter to the Court of Justice. In such cases the Court of Justice decision is called a ‘preliminary ruling’. See http://europa.eu/about-eu/institutions-bodies/court-justice/index_en.htm#case1 and

http://europa.eu/legislation_summaries/institutional_affairs/decisionmaking_process/114552_en.htm. See also Article 267 (ex Article 234 TEC) of the Consolidated Version of the Treaty on the Functioning of the European Union:

[http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:115:0047:0199:EN:PDF)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:115:0047:0199:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:115:0047:0199:EN:PDF)

treatment or non-discrimination and the free movement of goods, and also in the light of the commitments arising from the International Treaty on Plant Genetic Resources for Food and Agriculture, particularly in so far as they impose restrictions on the production and marketing of old seed and plants.⁵¹

Preliminary rulings are binding on all national courts of the member states of the EU.⁵² As a result of the reference for a preliminary ruling, the national proceedings were stayed until the Court of Justice of the EU gave its ruling,⁵³ which it did on 12 July 2012.

3.6.1 *Opinion of Advocate General Kokott*

In January 2012, before the Court of Justice of the EU announced its ruling, one of the eight advocates-general published an opinion.⁵⁴ Advocate General Kokott concluded that the prohibition on the marketing of seed of varieties that do not fulfil the DUS criteria, and, where relevant, the VCU criteria, as established in Council Directive 2002/55/EC on the marketing of vegetable seed,⁵⁵ is invalid because it infringes on the principle of proportionality, the freedom to conduct a business, the free movement of goods and the principle of equal treatment. The Advocate General argued that the disadvantages of this rule are disproportionate to its benefits, and held that this was the case also after the introduction of Directive 2009/145/EC.⁵⁶

Proportionality is a general principle of EU law: any acts adopted by EU institutions are not to exceed what is necessary and appropriate to achieve the legitimate objectives of the legislation in question. In addition, of two or more possible measures, the least onerous is to be preferred, and the disadvantages are not to be disproportionate to the aims pursued. Advocate General Kokott underlined that the legality of a measure in this context would be affected only if it is ‘manifestly inappropriate in terms of the objective which the competent institution is seeking to pursue’.⁵⁷

⁵¹ Opinion of Advocate General Kokott, paragraph 34: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

⁵² See

http://europa.eu/legislation_summaries/institutional_affairs/decisionmaking_process/114552_en.htm

⁵³ Information note on references from national courts for a preliminary ruling, article 26, see [http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:160:0001:0005:EN:PDF)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:160:0001:0005:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:160:0001:0005:EN:PDF)

⁵⁴ The eight advocates-general assist the Court of Justice of the EU by presenting opinions on the cases brought before it and are bound to do so impartially and publicly. Also the advocates-general are appointed for six-year terms which can be renewed. See http://europa.eu/about-eu/institutions-bodies/court-justice/index_en.htm

⁵⁵ The Opinion states that ‘the varieties at issue in the main proceedings are governed primarily or possibly exhaustively by’ (paragraph 10) this directive.

⁵⁶ See Opinion of Advocate General Kokott delivered on 19 January 2012: [http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML)

⁵⁷ Opinion of Advocate General Kokott delivered on 19 January 2012, paragraph 60: [http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML)

The rule in question is intended to provide protection against seed of varieties that do not satisfy the EU criteria and to ensure high levels of productivity, believed to be in the interest of many farmers. However, as underlined by Advocate General Kokott, it serves to restrict seed producers, seed merchants and farmers whose focus is not primarily productivity and consumer choice; moreover, genetic diversity in Europe is reduced. With regard to the latter, it is noted that commercial use of varieties is a more robust and effective means of protecting agricultural biodiversity than for example seed banks, and that the EU, as a party to the CBD and the Plant Treaty, has committed itself to maintain its biodiversity.⁵⁸

Further, according to Advocate General Kokott, the main advantage of the prohibition is limited to ‘preventing the mistaken use of seed that has not been accepted’,⁵⁹ a risk that should be minimized by labelling requirements regarding clear warnings. The fear that European farmers will lose access to high-quality seed and any need for the seed industry to be protected from the competition from non-accepted varieties are dismissed with the argument that the listed varieties will still be available, as well as the existence of plant variety rights based on similar criteria to those for acceptance. The disadvantages of the prohibition are therefore seen as outweighing the advantages.⁶⁰

Examining Council Directive 2009/145/EC with a view to establishing whether the introduction of this directive ‘allows sufficient scope for the use of old varieties’,⁶¹ Advocate General Kokott concluded that because of the directive’s restrictions, ‘disadvantages remain for operators and consumers whose access to old varieties that are not accepted is impeded’.⁶² The disadvantages of the prohibition are therefore disproportionate to its aims: as a result, the prohibition is invalid.⁶³

In addition, the prohibition was also deemed to infringe on ‘the freedom to conduct a business within the meaning of Article 16 of the Charter of Fundamental Rights of the European Union, the free movement of goods

⁵⁸ Opinion of Advocate General Kokott delivered on 19 January 2012: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

⁵⁹ Opinion of Advocate General Kokott delivered on 19 January 2012, paragraph 89: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

⁶⁰ Opinion of Advocate General Kokott delivered on 19 January 2012: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

⁶¹ Opinion of Advocate General Kokott delivered on 19 January 2012, paragraph 98: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

⁶² Opinion of Advocate General Kokott delivered on 19 January 2012, paragraph 103: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

⁶³ Opinion of Advocate General Kokott delivered on 19 January 2012, paragraph 104: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

established in Article 34 TFEU⁶⁴ and the principle of equal treatment within the meaning of Article 20 of the Charter⁶⁵.

It is on this background Advocate General Kokott proposed that the Court should rule that the prohibition on the marketing of seed from varieties that are not demonstrably distinct, stable and sufficiently uniform, and, in some cases, show satisfactory VCU, is invalid.

3.6.2 *Reactions to the opinion*

The publication of Advocate General Kokott's opinion gave rise to cautious optimism among those hoping for less restrictive rules on the marketing of diverse varieties in the EU,⁶⁶ and a certain degree of consternation and dissatisfaction among ESA members.⁶⁷ Both sides seemed to be prepared for the Court to come to the same conclusion as the Advocate General.

In January 2012, ESA warned its members that the Court tends to follow the argumentation of the Advocates-General in its final rulings⁶⁸ and that the ruling in this case would have an impact on the ongoing review of the EU seed legislation.⁶⁹ Then, in February 2012, the ESA announced that together with Graines Baumaux it had sent a 'Friends of the Court' letter to the Court explaining what they see as the rationale for the current legislation to help the Court 'better grasp the wider picture and potential consequences' of following the opinion of Advocate General Kokott.⁷⁰

In a cover letter to what is presumably the same statement mentioned by its February 2012 newsletter, the ESA stated that it 'considered it its duty to express its legal and socioeconomic concerns'⁷¹ about the opinion of Advocate General Kokott. In this statement ESA addressed what it called the 'alleged incompatibility with the principles of proportionality, freedom to conduct business, free movement of goods and non-discrimination' of the provisions in question, and argued that the

⁶⁴ The Treaty on the Functioning of the European Union

⁶⁵ Opinion of Advocate General Kokott delivered on 19 January 2012, paragraph 118:
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62011CC0059:EN:HTML>

⁶⁶ See for example a posting on the matter by Arche Noah:
www.arche-noah.at/discussion/viewtopic.php?f=2&t=1250

⁶⁷ See *ESA Newsletter*, January 2012, February 2012 and March 2012.

⁶⁸ ESA does not provide any reference for this statement regarding the Court's rulings, but the presumption seems to be quite common among those following the Advocates-General's opinions and the preliminary rulings of the Court, and a figure of 'agreement' in 80% of the cases has been used. However, although sources close to the Court say that in 'a majority' of the cases where an opinion has been written the Court agrees with the opinion, this 'majority' cannot be further specified. For more information see www.out-law.com/page-11458

⁶⁹ *ESA Newsletter*, January 2012. In June 2012 the organization reiterated that 'it must be expected that the Court will push for some form of 'liberalisation' of market access' (*ESA Newsletter*, June 2012, page 1)

⁷⁰ *ESA Newsletter*, February 2012, page 1.

⁷¹ Letter from ESA to Court of Justice of the European Union dated 27 February 2012, see www.kokopelli-semences.fr/medias/Letter-ESA.pdf

Advocate General had not reached the right conclusion. One element in the opinion stated by Advocate General Kokott that the ESA took issue with were the statements about erosion of biodiversity and loss of traditional varieties. According to the ESA, these statements about such ‘alleged disappearance’ were incorrect: due to EU seed legislation European farmers now have access to a larger number of varieties than ever before, while the derogations of Directives 2008/62/EC and 2009/145/EC complement the choice made possible by the EU Common Catalogues. ESA also argued that conservation in gene banks is preferable to conservation *in situ* when it comes to the maintenance of identity and the genetic base of varieties.

In fact, most genetic resources experts would probably distance themselves from this dismissive attitude to the issue of genetic erosion in Europe: genetic erosion has been acknowledged as a substantial problem not only in Europe but globally (FAO 1998), and organizations like FAO have underlined that European legislation is ‘discouraging the cultivation of farm landraces has had a strong negative impact on conservation’ (FAO 1998: 38). The importance of *in situ* conservation and management of plant genetic resources for food and agriculture have also been recognized internationally (FAO 1998).

The ESA further argued that the Advocate General, when assessing the provisions in question, did not properly balance the interests and objectives at stake; and that the commercial interests of Kokopelli had been confused with the common-good concerns related to biodiversity. Interestingly, the ESA also contested the extent to which the current system limits the choice of consumers, as ‘there are also various networks outside the commercial channels whose purpose is precisely to ensure that such varieties remain accessible and can still be freely cultivated’.⁷² Additionally, the ESA rejected the view that what it called ‘the limitations of the current system’ were manifestly disproportionate and that a labelling system would be a viable alternative. In its opinion, particularly the small and medium-sized enterprises within the European seed sector would suffer if the Court came to the same conclusion as Advocate General Kokott.

Arche Noah, also known as ‘the Austrian Seed Savers Association’, also noted the importance of the ruling for DG SANCO’s work, but unlike ESA it hoped the Court would follow the opinion of Advocate General Kokott.⁷³

When the opinion was first published in January the preliminary ruling was mentioned as possibly being weeks away.⁷⁴ By early April 2012 it

⁷² ESA letter, page 5, see www.kokopelli-semences.fr/medias/Letter-ESA.pdf

⁷³ See post by Arche Noah :

www.arche-noah.at/discussion/viewtopic.php?f=2&t=1250

⁷⁴ In the *ESA Newsletter* from January 2012, the ESA write that they will provide more information ‘once the final ruling of the ECJ is published which may still take several weeks’ (page 8).

was expected that the ruling would be announced towards the end of that month,⁷⁵ but the judgment was not handed down until 12 July 2012.⁷⁶

3.6.3 *The judgment of the Court of Justice of the EU*

In its judgment from 12 July 2012, the Court ruled that Council Directive 2002/55/EC and Commission Directive 2009/145/EC were valid. The ruling stated that ‘consideration of the question raised has disclosed no factor of such a kind as to affect the validity’⁷⁷ of these two directives. With regard to the two other directives mentioned in the question referred to the Court – Council Directive 98/95/EC and Council Directive 2002/53/EC – the Court did not deem it necessary to examine their validity, as the former is an amending act which *inter alia* amended an older directive on the marketing of vegetable seed now codified by Council Directive 2002/55/EC, and the latter concerns the common catalogue of varieties of agricultural plant species whereas the *Kokopelli vs Graines Baumaux* case concerns the marketing of vegetable seed.

In its judgment the Court noted that ‘in matters concerning the common agricultural policy the EU legislature has a broad discretion which corresponds to the political responsibilities given to it’ and that the ‘lawfulness of a measure adopted in that sphere can be affected only if the measure is manifestly inappropriate’.⁷⁸ In its examination of whether the current system of acceptance of vegetable seed breaches the principle of proportionality by being manifestly inappropriate, the Court underlined that the primary objective of the rules on acceptance of vegetable seed is to improve the productivity of EU vegetable cultivation. It further argued that the current acceptance regime, which is based on the DUS criteria, allows for the increase of agricultural productivity ‘on the basis of the reliability of the characteristics of the seed’,⁷⁹ and that the ‘derogating acceptance regime implemented by Directive 2009/145 (...) is capable of guaranteeing the conservation of plant genetic resources’.⁸⁰ However, no further argumentation was offered as to how this regime is to ensure that plant genetic resources are satisfactory maintained.

The Court also found that the EU legislature was entitled to conclude that the current acceptance regime was necessary to achieve reliable and high productivity and to prefer this solution to less restrictive measures (like labelling). Therefore, the Court found that the legislation in question was not manifestly inappropriate in light of the objective of increased agricultural productivity, and that the principle of proportionality had not been breached.

⁷⁵ See post by Arche Noah on 2 April 2012:
www.arche-noah.at/discussion/viewtopic.php?f=2&t=1250

⁷⁶ See the Judgment of the Court:
<http://curia.europa.eu/juris/document/document.jsf?text=&docid=125002&pageIndex=0&doclang=EN&mode=doc&dir=&occ=first&part=1&cid=509234>

⁷⁷ Judgment of the Court, 12 July 2012, page 15 (see
<http://curia.europa.eu/juris/document/document.jsf?text=&docid=125002&pageIndex=0&doclang=EN&mode=doc&dir=&occ=first&part=1&cid=509234>)

⁷⁸ Judgment of the Court, 12 July 2012, paragraph 39 (see link in footnote 76)

⁷⁹ Judgment of the Court, 12 July 2012, paragraph 45 (see link in footnote 76)

⁸⁰ Judgment of the Court, 12 July 2012, paragraph 49 (see link in footnote 76)

As to the geographical, quantitative and packaging restrictions imposed on the seed of conservation varieties and of varieties developed for growing under particular conditions, the judgment states that these restrictions ‘fall within the scope of the conservation of plant genetic resources’,⁸¹ but does not specify in what way and why. The judgement also seems to accept the view that ‘preventing the emergence of a parallel market’⁸² for seed of conservation varieties and varieties developed for growing under particular conditions was necessary, as such a market would have constituted ‘an impediment to the internal market for seed of vegetable varieties’.⁸³ As the judgment notes, this was the argument used against liberalizing the marketing of seed, and for why it was desirable to only ease the rules of acceptance for the types of varieties in question. Although this argument is accepted, the judgment does not explain in what way a ‘parallel market’ would be an impediment to the internal vegetable seed market. The judgment also notes that it is specified in Commission Directive 2009/145/EC that its implementation is to be evaluated by the Commission by 31 December 2013 and that in particular the provisions on quantitative restrictions are to be assessed. Neither Council Directive 2002/55/EC nor Commission Directive 2009/145/EC is therefore considered to breach the principle of proportionality.

The judgment also argues that these directives do not breach the principle of equal treatment, because by instituting particular conditions with regard to seed of conservation varieties, different situations are treated differently. In this connection it is noted that the specific cultivation and marketing conditions for seed of conservation varieties ‘fall within the scope of conservation in situ and the sustainable use of plant genetic resources’.⁸⁴

With regard to the freedom to pursue an economic activity, the judgment states that the rules and measures of the directives in question cannot be said to be inappropriate to the attainment of the objectives of improved productivity of the EU vegetable cultivation, the establishment of an internal market and the conservation of plant genetic resources. Therefore, the obstacles represented by such rules and measures do not disproportionately impair the right to exercise the freedom to pursue and economic activity. In addition, the judgment argues that the current regime governing the marketing of vegetable seed promotes more than it restricts the free movement of goods.

Although the judgment of the Court differs on many points from the opinion of Advocate General Kokott, there is agreement on the issue of any non-compliance with the Plant Treaty: the judgment also concludes that none of the provisions of this treaty are unconditional or precise enough to challenge the validity of the directives in question. The judg-

⁸¹ Judgement of the Court, 12 July 2012, paragraph 64 (see <http://curia.europa.eu/juris/document/document.jsf?text=&docid=125002&pageIndex=0&doclang=EN&mode=doc&dir=&occ=first&part=1&cid=509234>)

⁸² Judgement of the Court, 12 July 2012, paragraph 65 (see link above)

⁸³ Judgement of the Court, 12 July 2012, paragraph 65 (see link above)

⁸⁴ Judgement of the Court, 12 July 2012, paragraph 74 (see link above)

ment therefore argues that ‘no factor of such a kind as to affect the validity of Directives 2002/55 and 2009/145’⁸⁵ had been disclosed.

3.6.4 Reception and impact

Not surprisingly, the judgment was welcomed by the ESA, whose Secretary General declared that ‘the European seed sector is very satisfied with the ruling’.⁸⁶ The EU Regional Group of the International Federation of Organic Agriculture Movement (IFOAM), on the other hand, declared that ‘for all those who want a wide diversity of colourful and tasty tomatoes and peppers on their plates’ the judgement was bad news, and that the Court had ‘failed to respond to the concerns of seed savers across the EU’.⁸⁷ In its response IFOAM also underlined that the EU, as part of the revision of EU seed legislation, must ‘facilitate market access for traditional varieties and farm bred varieties’ and create a framework that enables ‘the marketing of open-pollinating varieties with a broader intra-varietal genetic diversity that are professionally bred’.⁸⁸ The organization emphasized that such varieties are crucial to meet challenges related to shifting environmental conditions.

If, on the other hand, the preliminary ruling had declared invalid the prohibition on the marketing of seed from varieties that are not demonstrably distinct, stable and sufficiently uniform, or, in some cases, demonstrate satisfactory VCU, that would have had far-reaching consequences for EU seed legislation. As noted, the preliminary rulings of the Court are, despite their name, binding on all national courts of EU member states, and as they have the force of *res judicata* they are in fact final. With regard to the ongoing review process, a ruling that followed the opinion of Advocate General Kokott would have obliged the EU institutions to change the provisions in question. However, that the legislation has not been deemed invalid does not mean that the contested provisions may not be changed as a result of the review process. The objective of improved productivity was a central factor in the Court’s judgment; and, as the need to emphasize also other objectives has been brought up during the review process, it is possible that the legislative proposal eventually put forward will reflect that, by containing less restrictive provisions.

⁸⁵ Judgement of the Court, 12 July 2012, paragraph 93 (see link above)

⁸⁶ ESA press release, 12 July 2012, ‘Kokopelli ruling – CJEU confirms validity of European seed marketing legislation’, page 1 (see www.euroseeds.org/home/latest-news/esa_12.0454.1)

⁸⁷ IFOAM EU Group Press Release, ‘European citizens must stand up for diversity on our plates’, 12 July 2012, page 1 (see www.ifoam.org/about_ifoam/around_world/eu_group-new/news/pdf/120712-IFOAMEUPR-seed-laws.pdf)

⁸⁸ Ibid.

3.7 The way forward

The DG SANCO website still states, as of July 2012, that it ‘is preparing an Impact Assessment report’,⁸⁹ but according to ESA the DG SANCO announced at a meeting on 10 January 2012 that the impact assessment had been finalized and was to be dealt with by the Impact Assessment Board⁹⁰ on 15 January 2012.⁹¹ Despite some concerns about lack of financial data, especially for small and medium-sized companies, the inter-service consultation⁹² was expected to start in March/April and it was believed that a first legal text would be ready in the third quarter of 2012.⁹³ In March 2012, the Commission again confirmed to the ESA that such a text could be expected in the third quarter of 2012.⁹⁴ The impact assessment report, its summary and the opinion of the Impact Assessment Board are not to be published until the corresponding proposal is adopted by the Commission.⁹⁵ According to the ESA, a legislative proposal will be submitted by the Commission to the European Parliament and the member states by the end of 2012.⁹⁶

At this meeting in January 2012, ESA also received some indications from DG SANCO about the likely main content of the future legislation. According to the ESA, all costs in relation to seed marketing will probably be transferred to the stakeholders, there will be obligatory VCU for agricultural crops, and changes regarding conservation varieties are to

⁸⁹ See information about the review of the seed legislation on the DG SANCO website: http://ec.europa.eu/food/plant/propagation/evaluation/index_en.htm

⁹⁰ The Impact Assessment Board examines and issues opinions on the Commission’s Impact Assessments and is independent of the policy-making departments. The issued opinions are not binding, but together with the Impact Assessment Report an opinion will accompany the draft initiative throughout the entire political decision-making process of the Commission. For more information about the Impact Assessment Board, see

http://ec.europa.eu/governance/impact/iab/iab_en.htm

⁹¹ ESA Newsletter, January 2012

⁹² While the lead service for the proposal, in this case the DG SANCO, is responsible for the preparation of the Impact Assessment, other Commission services provide support through the inter-service consultation. These are initiated after the Impact Assessment Board has analysed the Impact Assessment provided by the lead service and its opinion has been integrated into the Impact Assessment. If the Impact Assessment Board asks for a resubmission this also takes place before the inter-service consultation. See the Impact Assessment Guidelines: http://impel.eu/wp-content/uploads/2010/01/European-Commission-Impact-Assessment-Guidelines-iag_2009_en.pdf

⁹³ ESA Newsletter, January 2012

⁹⁴ ESA Newsletter, March 2012

⁹⁵ For information about impact assessment, see the website of the European Commission

(http://ec.europa.eu/governance/impact/ia_carried_out/cia_2012_en.htm) and the Impact Assessment Guidelines

(http://impel.eu/wp-content/uploads/2010/01/European-Commission-Impact-Assessment-Guidelines-iag_2009_en.pdf).

⁹⁶ ESA press release, 12 July 2012, ‘Kokopelli ruling – CJEU confirms validity of European seed marketing legislation’

(www.euroseeds.org/home/latest-news/esa_12.0454.1)

be expected. With regard to the latter, it was mentioned that member states had complained of the administrative burdens and questioned the quantitative restrictions currently in place.⁹⁷

This tentative information from DG SANCO can be taken to indicate that regardless of the ruling of the Court of Justice, the Commission has been planning to ease the restrictions on the marketing of seed from non-standard varieties. How and to what extent remains to be seen. It is also possible that the DG SANCO has already taken the opinion of Advocate General Kokott into consideration in its work. However, as the Court did not find the current prohibition on the marketing of seed from varieties that have not been officially accepted to be invalid, the review of EU legislation is not obliged to change that aspect of the system.

⁹⁷ *ESA Newsletter*, January 2012

4 Timeline: EU seed legislation since 1998

This chapter presents a timeline showing developments in EU seed legislation since Directive 98/95/EC was promulgated in 1998. That year has been chosen as the cut-off point because it was Directive 98/95/EC that opened the way for permitting, within EU seed legislation, the use of varieties threatened by genetic erosion. This timeline shows both the directives introduced in the EU since 1998 and the milestones of the EU evaluation process so far. In addition, the main developments of the Kokopelli court case are presented, and in the far right-hand column the key international developments concerning the conservation and sustainable use of plant genetic resources for food and agriculture from 1998 and onward can be seen.

It should be borne in mind that the various developments in the EU with regard to seed legislation did not take place in a vacuum, and an important part of the context comes from international processes as to the conservation and sustainable use of plant genetic resources for food and agriculture.⁹⁸ The Commission on Genetic Resources for Food and Agriculture (CGRFA)⁹⁹ was established in 1983, and the same year the International Undertaking on Plant Genetic Resources was adopted. Then followed the *Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (GPA)*¹⁰⁰ in 1996, and the final publication of the first *State of the World's Plant Genetic Resources for Food and Agriculture*¹⁰¹ in 1998. After seven years of negotiations this work then culminated in the adoption of the legally binding Plant Treaty¹⁰² by the Food and Agriculture Organization (FAO) Conference 3 November 2001. Since then a second *State of the World's Plant Genetic Resources for Food and Agriculture*¹⁰³ has been published (in 2010) and an updated version of the *Global Plan of Action* was agreed at the 13th session of the Commission on Genetic Resources for Food and Agriculture in July 2011, later adopted by the FAO Council at its 143rd session towards the end of 2011.¹⁰⁴

The adoption of the Convention on Biological Diversity (CBD) in 1992 should also be mentioned, as it contributed to placing the importance of conservation of biological diversity, including agricultural biodiversity, on the agenda – both internationally and in Europe.

⁹⁸ See Regine Andersen (2008): *Governing Agrobiodiversity: Plant Genetics and Developing Countries* (Aldershot: Ashgate) for a thorough analysis of the various international agreements regulating agricultural biodiversity.

⁹⁹ For more information about the CGRFA see the CGRFA website: www.fao.org/nr/cgrfa/en/

¹⁰⁰ For more information about the GPA see the website of the portal of its facilitating mechanism: www.globalplanofaction.org/

¹⁰¹ See www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/sow/en/

¹⁰² For more information about the Plant Treaty see www.planttreaty.org/ or the website of the Farmers' Rights Project (www.farmersrights.org).

¹⁰³ See: www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/sow/sow2/en/

¹⁰⁴ The report from the meeting: www.fao.org/docrep/meeting/024/mc783e.pdf

4.1 Timeline

Table 1: Timeline

Year	EU legislation	EU evaluation process	Kokopelli court case	Internationally
1998	Council Directive 98/56/EC (ornamental plants) Council Directive 98/95/EC (amending various directives, introducing conservation derogations)			State of the World's Plant Genetic Resources for Food and Agriculture (PGRFA)
1999	Council Directive 1999/105/EC (forest reproductive material)			
2001				The Plant Treaty
2002	Council Directive 2002/11/EC amends Directive 68/193/EEC (material for the vegetative propagation of the vine) Council Directive 2002/53/EC (on the common catalogue of agricultural plant species) Council Directive 2002/54/EC (beet seed) Council Directive 2002/55/EC (vegetable seed) Council Directive 2002/56/EC (seed potatoes) Council Directive 2002/57/EC (seed of oil and fibre plants)			
2007		FCEC evaluation (Dec 07–Aug 08)		
2008	Commission Directive 2008/62/EC (conservation varieties – agricultural) Council Directive 2008/90/EC (fruit-plant propagating material and fruit plants intended for fruit production – recast version)	FCEC evaluation (Dec 07–Aug 08)	Nancy Regional Court, France, ordered Kokopelli to pay damages to Graines Baumaux for unfair competition (14 Jan)	
2009	Commission Directive 2009/145/EC (conservation varieties and varieties developed for growing under particular conditions – vegetables)	European Conference on Ensuring Seed Availability in the 21st Century (18 March) Action Plan for Review of the Community legislation on marketing of seed and plant propagating material and related issues (2 Oct)		

Year	EU legislation	EU evaluation process	Kokopelli court case	Internationally
2010	Commission Directive 2010/60/EU (preservation mixtures)			Second State of the World's PGRFA
2011		Consultation and paper: Options and analysis of possible scenarios for the review of the EU legislation on the marketing on seed and plant propagating material On-line consultation (ended 30 May)	Nancy Court of Appeals, France, makes a reference for a preliminary ruling to the Court of Justice of the EU (4 Feb) The Court receives the reference (9 Feb)	Updated Global Plan of Action
2012			Opinion of Advocate General Kokott delivered (19 Jan) Judgment of the Court delivered (12 July)	

5 Literature guide

This chapter is offered as a guide to the literature on seed marketing legislation and agricultural biodiversity in Europe, thematically presenting the main relevant points from a range of sources. First, literature dealing with the status of agriculture, seed production and conservation of plant genetic resources in Europe is presented, to serve as a background for the further sub-chapters. The following sub-chapter outlines the development of seed legislation in Europe. In addition, seed regulatory reform is discussed through a presentation of the most central literature. The effects of seed legislation on agricultural biodiversity as depicted in relevant literature are presented in a separate section, before the literature on Directive 2008/62/EC is presented. As yet, this is the only of the three EU Directives aimed at the conservation of plant genetic resources to have been studied to any extent. At the end of each section, the mentioned literature is listed in tables together with the main relevant points.

5.1 Agriculture, seed production and conservation of plant genetic resources in Europe

According to Negri et al. (2009) less than 4% of the European¹⁰⁵ population is now involved in agriculture. Agriculture has to a large extent become industrialized and most of the input, including seed, comes from outside the farm. Agricultural production is also heavily dominated by genetically uniform, commercially bred varieties, which have ousted the more genetically variable traditional varieties, often known as ‘landraces’ (or ‘local varieties’ or ‘farmer varieties’) (Negri et al. 2009).

Europe (if Russia and other non-EU countries are included) is, according to Ceddia and Cerezo (2008), the world’s largest market for commercial seed, accounting for an estimated 32% of total in 2005. In Europe as a whole, Russia constitutes the biggest single market for commercial seed; within in the EU, France and Germany dominate. In 2005 the EU was a net exporter of seeds, but still had a seed trade deficit with the USA (Ceddia and Cerezo 2008).

Informal seed systems still exist: according to Bocci et al. (2010), in some countries in the south of Europe, such as Italy and Greece, as little as 10% of the seed is purchased, whereas the figure is as high as approximately 90% in other countries (such as Denmark and the Netherlands). However, as Bocci et al. note, there is very little concrete information available, and it is difficult to determine the exact percentage of purchased seed, be it commercial varieties or landraces, in used various areas. It is also likely that the figures vary from crop to crop.

¹⁰⁵ Although not specifically defined, it can be assumed that in this publication ‘Europe’ refers to the continent, and not just the EU, as the edited volume it belongs to contains chapters on Russia and Switzerland.

5.1.1 Landraces in Europe

As Negri et al. (2009) point out, notwithstanding the dominance of commercial and uniform varieties, landraces are still being maintained in Europe. One factor that distinguishes landraces from modern varieties is the continuous development of diversity between and within the former that takes place when these are cultivated, due to natural and human selection pressures. Genetic diversity, rather than genetic uniformity is the result of such selection pressures; and while this diversity is central to the resilience of such crops, it is also part of the reason for difficulties with the maintenance and continued development of such varieties, when it comes to registration and seed certification (Negri et al. 2009).

The first modern varieties were developed in the early 1900s. Since then, similar breeding efforts have expanded to include all major crops, and advances in genetics have given plant breeders new tools. Important characteristics of modern varieties, according to Negri et al. (2009), include genetic uniformity and high yields. The latter factor is central in explaining why these varieties have replaced, and are still replacing, locally adapted but lower-yielding varieties. Because it is believed that this development has led to a considerable and still ongoing loss of genetic diversity, efforts have been and are being undertaken to conserve what remains of the gene pool (Negri et al. 2009).

As Negri et al. (2009) see it, apart from crop wild relatives, it is ecotypes and extant landraces that are most in need of active conservation in Europe. Both *in situ* and *ex situ* strategies play a part in this conservation work, but the authors stress that *in situ* conservation should be an important part of conservation efforts, as such an approach allows the evolutionary process to continue, as well as the preservation of different populations. Despite the difficulties in defining exactly what a 'landrace' is, Negri et al. (2009) maintain that such a definition is necessary for practical purposes, not least to aid conservation efforts and its associated tools, such as inventories. The definition they highlight is the one proposed at the second meeting of the On-Farm Conservation and Management Taskforce of the European Cooperative Programme on Plant Genetic Resources (ECPGR):

A landrace of a seed-propagated crop is a variable population, which is identifiable and usually has a local name. It lacks 'formal' crop improvement, is characterized by a specific adaptation to the environmental conditions of the area of cultivation (tolerant to the biotic and abiotic stresses of that area) and is closely associated with the uses, knowledge, habits, dialects, and celebrations of the people who developed and continue to grow it. (quoted in Negri et al. 2009: 9)

However, Negri et al. (2009) also acknowledge that this definition might prove problematic – for example, it excludes landraces that originated in one region but then were introduced to another and became adapted to the local environment there over time.

5.1.2 Genetic erosion and efforts to stop it

Citing studies of loss of landraces in Southern Italy and Tuscany showing a genetic erosion of up to 70%, Negri et al. (2009) underline that European landraces are very much threatened. Among the factors contributing to this loss is the diffusion of modern high-yielding uniform varieties. They also stress that landrace diversity in Europe is threatened by variety registration and seed certification systems. However, even if it is illegal to sell unregistered seed, many farmers still exchange their own farm-saved seed and several European seed networks have found ways to circumvent the legislation for the purpose of conserving landraces and other unregistered varieties (Negri et al. 2009).

The EU-funded research project Farm Seed Opportunities (FSO) also worked on landraces, how they are defined and to what extent they are still cultivated. The objective of FSO was to support the implementation of Directive 98/95/EC and Directive 2008/62/EC (Chable et al. 2009). Central to the project was developing definitions of the various types of varieties grown by European¹⁰⁶ farmers according to surveys and evaluations; the project also aimed to both respond to the need of policy-makers and highlight the role of farmers in the conservation of crop diversity. Institutions from France, Spain, Italy, the Netherlands and the United Kingdom were involved in the project.¹⁰⁷ Their areas of expertise included organic agriculture, genetic resources, seed quality and participatory plant breeding (Chable et al. 2009).

One of the studies conducted by the project was a survey of European initiatives related to landraces. The resulting inventory lists 68 initiatives from 17 European countries. Language barriers hindered some initiatives from inclusion on the list, as information about local initiatives tends to be in regional or national languages and the FSO project did not have representatives familiar with all the languages involved (Osman and Chable 2009).

The project distinguished between different types of initiatives, with some groups displaying the characteristics of more than one category. The following categories were used: seed savers, initiatives promoting *in situ* conservation of landraces, producers of regional varieties, seed producers, farmer breeders, biodynamic breeders and supporting institutions (Osman and Chable 2009). Five cases representing various categories, crops and countries were then selected for more in-depth study: Kultursaat (German farmer breeders of vegetables), Plateforme Agrobio-logique d'Inter Bio Bretagne à Suscinio (PAIS) (French farmer-breeders

¹⁰⁶ In this publication, and the FSO publications in general, 'Europe' seems to mean 'EU', although this is not specifically defined, as the EU legislation and 'Member States' are referred to. The objective and funding of the project also support this inference.

¹⁰⁷ Institut National de la Recherche Agronomique, Associazione Italiana per l'Agricoltura Biologica, Louis Bolk Instituut, Réseau Semences Paysannes, Red Andaluza de Semillas 'Cultivando Biodiversidad', Plant Research International, International Institute for Environment and Development, Istituto di genetica e sperimentazione agraria Nazareno Strampelli and Centre for Genetic Resources

focusing on vegetables), Syndicat de Promotion de la Touselle (French farmer-breeders and producers of regional wheat varieties), Consorzio Solina d'Abruzzo (Italian producers and processors of regional wheat varieties) and Allkorn (Swedish initiative created by a biodynamic cereal breeder). According to Osman and Chable (2009) the current EU legislation on marketing of seed was seen as one of the barriers to upscaling such initiatives because selling and exchanging seed from unregistered varieties is illegal.

The FSO project also conducted a survey among stakeholders in the conservation varieties marketing chain, on their expectations of bringing such varieties to the market. This survey showed that most initiatives within this area are quite small, still in an early phase, dependent on funding and have motivated staff, but that, although the initial launching of products is relatively easy and does not entail heavy financial risks, profitability tends to be fairly low. Among the various factors assessed by the stakeholders, seed laws received the worst rating. Respondents felt that the current seed legislation was overly restrictive and not adapted to the needs of their crops. This legislation was therefore seen as one of the main barriers to the development of markets for conservation varieties and other niche varieties (Thommen et al. 2010).

In *Saving the Seed: Genetic Diversity and European Agriculture* (1992), Renée Vellvé examined agricultural development and genetic erosion in Europe¹⁰⁸, as well as what was being done to maintain genetic diversity by organizations, governments and the industry. One conclusion was that the industry to an increasing degree controls both genetic diversity and its use, and the growing uniformity in the fields was seen as a threat to the rights of farmers and gardeners and to sustainability. Vellvé (1992) also touched upon the issue of seed legislation, and argued that the laws regulating the marketing of seeds within the European Community¹⁰⁹ needed to be relaxed because of their adverse effects on agricultural biodiversity. Especially problematic were the requirements that must be fulfilled by a variety if it is to be registered and commercialized: these were all 'geared towards uniformity' (Vellvé 1992: 130) and did not allow for legal marketing of diverse varieties like landraces. In addition, fee levels were viewed as a barrier to registration as many interested organizations lack the necessary resources to enter and maintain varieties on the lists (Vellvé 1992).

¹⁰⁸ Here, 'Europe' refers to the continent and the book uses other names when something else is meant.

¹⁰⁹ The European Economic Community was often referred to as the European Community also before it was officially renamed as such by the entry into force of the Maastricht Treaty in 1993.

5.1.3 Literature in 5.1

Table 2: Literature in 5.1

Literature reference	Main relevant points
Bocci, Riccardo, Véronique Chable, Guy Kastler and Niels Louwaars (2010), <i>Policy Recommendations (Farm Seed Opportunities)</i>	<ul style="list-style-type: none"> • informal seed market still important in Europe
Ceddia, Michele Graziano and Emilio Rodriguez Cerezo (2008), <i>A Descriptive Analysis of Conventional, Organic and GM Crop and Certified Seed Production in the EU</i> , (Luxembourg: Office for Official Publications of the European Communities)	<ul style="list-style-type: none"> • Europe was world's largest market for commercial seed in 2005 • France and Germany dominate in EU • net exporter of seed in 2005
Chable, Veronique, Isabelle Goldringer, Julie Dawson, Riccardo Bocci, Edith Lammerts van Bueren, Estelle Serpolay, Juan Manuel González, Thais Valero, Thomas Levillain, Joost W. Van der Burg, Michel Pimbert, Silvio Pino and Chris Kik (2009), 'Farm Seed Opportunities: a Project to Promote Landrace Use and Renew Biodiversity' in <i>European Landraces: On-farm Conservation, Management and Use</i> , Bioversity Technical Bulletin No. 15 (Rome: Bioversity International)	<ul style="list-style-type: none"> • FSO objective: support implementation of directives 98/95/EC and 2008/62/EC • aimed to respond to policy needs • definitions for varieties central • institutions from five countries involved • highlighted role of farmers • conducted surveys and evaluations
Negri, Valeria, Nigel Maxted and Merja Veteläinen (2009), 'European Landrace Conservation: an Introduction' in <i>European Landraces: On-farm Conservation, Management and Use</i> , Bioversity Technical Bulletin No. 15 (Rome: Bioversity International)	<ul style="list-style-type: none"> • industrialization of European agriculture • genetically uniform commercially bred varieties dominate • landraces still maintained, but threatened • variety registration and seed certification also a threat • genetic diversity central to landraces • various definitions of 'landrace' used
Osman, Aart and Veronique Chable (2009), 'Inventory of initiatives on seeds of landraces in Europe', <i>Journal of Agriculture and Environment for International Development</i> , 103 (1/2): 95–130	<ul style="list-style-type: none"> • inventory of 68 initiatives from 17 European countries • different types: seed savers, initiatives promoting in situ conservation of landraces, producers of regional varieties, seed producers, farmer breeders, biodynamic breeders and supporting institutions • five case studies • current EU seed legislation seen as barrier to upscaling, as selling and exchanging seed from unregistered varieties is illegal
Thommen, Andreas, Edith T. Lammerts van Bueren, Estelle Serpolay, Thomas Levillain, Thais Valero Infante and Riccardo Bocci (2010), <i>Characterisation of Stakeholder Expectations – An Expert Survey (Farm Seed Opportunities)</i>	<ul style="list-style-type: none"> • stakeholder survey • seed legislation seen as obstacle
Vellvé, Renée (1992), <i>Saving the Seed: Genetic Diversity and European Agriculture</i> (London: Earthscan and GRAIN)	<ul style="list-style-type: none"> • genetic erosion widespread in Europe • increasing uniformity as contributing factor • industry in control of resources • seed registration requirements problematic for diverse varieties

5.2 Development of seed regulation in Europe and regulatory reform

The literature presented in this sub-chapter precedes the three directives aimed at the conservation of genetic resources (from 2008, 2009 and 2010). However, as can be seen in Chapter 2, the basic principles of EU legislation today are still the same as it was when these contributions were written. Many of the contributions were also written before five of the basic directives (on seed of oil and fibre plants, on seed potatoes, on vegetable seed, on beet seed and on the common catalogue of agricultural plant species) were amended in 2002. Nevertheless, as mentioned in Chapter 2, the only directives to have undergone substantial changes during amendment processes are the directive on ornamental plants (re-drafted in 1998) and the directive on forest reproductive material (re-drafted in 1999).

5.2.1 *The history of seed regulation in Europe*

A short history of the development of the commercial seed sector and seed laws in industrialised countries is provided by Almekinders and Louwaars (2002), who argue that seed laws came about as a result of pressure from seed producers and farmers alike. Both groups wished to be protected against dishonest or speculative seed suppliers, as these were negative for farmers and for the integrity of serious seed producers (Almekinders and Louwaars 2002).

Louwaars (2002b) further develops this argument, and states that the reason compulsory variety registration developed in Europe during the first half of the 20th century was the lack of clarity with regard to names and varietal identity that had come about as a result of certain practices in the industry. Seed suppliers named varieties in an effort to create brands for their companies, and sometimes made unsubstantiated claims with regard to adaptation to distinguish their own product from that of a competitor. Varieties were also renamed after popular varieties, to increase sales (Louwaars 2002b).

Both the industry and farmers called for transparency. The resultant solution was a registration system that linked one name to one variety, based on morphological descriptions and central agricultural characteristics. Such a variety register was first created in 1905 by the German Agricultural Society, and similar registers became mandatory in many European countries when national seed laws were enacted in the 1940s (Louwaars 2002b).

The purpose of current variety registration is still to identify varieties, and national registers are meant to ensure transparency in the market. In complex markets with many available varieties, such as the European, the requirements for registration tend to be stricter and more complicated than in markets with few available varieties. In the EU, procedures have been developed to establish distinctness, uniformity and stability for the purpose of variety registration (and the same requirements are used to determine whether a variety can be protected by plant breeders' rights). True identification of a variety is also seen as necessary for the certifica-

tion of seed lots, as certification is about confirming the identity and varietal purity of the seed in question (Louwaars 2002b).

As noted in Chapter 2, the EU legislation on the marketing of seed and plant propagating material requires VCU testing for agricultural plant species. According to Louwaars (2002b), VCU testing has its origin in the testing systems created by farmers' associations to validate the claims made by seed suppliers, and in its present form usually focuses on a variety's adaptation to local conditions and product values (Louwaars 2002b).

Further, according to Louwaars (2002b) the current variety control systems that emerged as a result of the mentioned developments also have some disadvantages. Here he mentions the widely recognized problem related to varietal change; a variety cannot change during its commercial life, because the registration system fixes it to a certain description. Problems noted with regard to performance testing include inappropriate site selection and poor trial management, and over-emphasis on yields during data collection and analysis (Louwaars 2002b).

5.2.2 Approaches to regulation

In another article, Louwaars (2002a) outlines three approaches to regulation based on differing philosophies as to the role government should play: control, competition and cooperation. The system adopted by most European¹¹⁰ countries he describes as control-based, as new varieties must be registered and VCU tested before they can be formally released; control of seed production is conducted through certification systems, with the government playing an important role in these processes. The second approach outlined by Louwaars (2002a) is based on competition, where market forces – in this case, competition in the seed market – are seen as the only regulatory factor needed.

The third approach is based on cooperation. According to Louwaars (2002a) this term can be attributed to the system in the United States. Under this approach, government shares tasks and responsibilities with the seed industry. In the USA this is practised in the sense that the suppliers of seed are responsible for the quality of the products they sell with regard to suitability and seed quality, while the government is involved in deciding the type of information seed dealers should include on labels and in checking the truth of labelling. Louwaars (2002a) also notes that US farmers' and seed growers' associations have given rise to many certification and quality control agencies that serve the same functions as their counterparts in Europe, although the legal basis is different.

¹¹⁰ In Eastern Europe, as well as Central and Western Europe

5.2.3 Comparisons with the USA

Tripp and Louwaars (1997)¹¹¹ write that in both Europe and the United States, opportunism and lack of experience characterized the early development of the seed industry, causing farmers to demand seed regulations. Such regulations developed in different directions on either side of the Atlantic: Tripp and Louwaars (1997) emphasize the differences between the seed regulatory system in the EU and in the United States.

While variety registration, performance testing and seed certification is voluntary in the United States (certification is conducted by independent agencies belonging to Association of Official Seed Certifying Agencies) and there is no national variety release authority (although there are National Variety Review Boards for many crops, the system is voluntary), all of the above are mandatory in the EU. All crop varieties must be registered (which means fulfilling the DUS criteria) and performance tested (all agricultural varieties must be VCU tested) and all seed for sale must be certified. As the seed industries in both the EU and the USA seem to thrive under their respective regulatory regimes, Tripp and Louwaars (1997) conclude that effective regulation can be achieved by various tools.

One consequence of these differences is that uniformity is emphasized to a greater extent in the EU than in the USA, as illustrated by how some of the line mixtures produced by US public breeding programmes would not meet the DUS criteria used for variety registration in the EU. Over-emphasis on uniformity will, according to Tripp and Louwaars (1997), interfere with plant breeding efforts that focus on utilizing diversity to cope with plant diseases or marginal growing conditions.

5.2.4 Regulatory reform

The issue of seed regulatory reform in developing countries and possible choices to be made is also discussed by Tripp and Louwaars (1997). Their argument about the importance of such reform reflecting the development and change of national seed systems can be seen as relevant for developed countries as well. Two areas are discussed: variety regulation (registration, performance testing, and release) and seed quality control (certification and seed testing). As they see it, the process of seed regulatory reform will not necessarily be easy, and conflicts of interest are not unlikely (Tripp and Louwaars 1997).

Seed regulation and reform of national seed systems is also discussed in *New Seed and Old Law*, edited by Tripp (1997a). Regulatory reform in developing countries is in focus here as well, but the EU system is also mentioned. In his chapter on regulation and regulatory reform, Tripp (1997b) defines seed regulation as ‘government control of the production and distribution of plant varieties and seeds through rules enacted to

¹¹¹ Many of the same issues are discussed in the chapter ‘The conduct and reform of crop variety regulation’ by Tripp and Louwaars in *New Seed and Old Law* (Tripp 1997a).

protect public welfare' (Tripp 1997b: 43) and concludes that regulatory systems are formed by technical and economic conditions and political debate (Tripp 1997b).

Louwaars (2002b) also discusses possible approaches for dealing with the disadvantages of conventional variety controls and factors to consider in this context. One approach is to relax the regulations and let the market to a larger extent decide the level of voluntary control. He argues that such a voluntary system works in the United States because the country has competition in the seed industry, literate farmers and a network of universities and experimental stations that conduct variety trials. Another approach is to reform the existing systems by increasing participation and changing the performance standards. Louwaars (2002b) proposes changing the rule in many systems saying that a new variety needs to perform better than the standard, to read that new varieties should not perform worse than the standard. He also underlines that governments should regulate only to the extent they are able to implement and that the objective should be to ensure farmers access to the best seed. One consequence is that governments should seek to control only the varieties that enter commercial seed trade, not those in farmers' seed systems. Neither should the system prevent genetically heterogeneous varieties, such as landraces, from becoming registered and entering the commercial market (Louwaars 2002b).

Seed regulatory reform in general is also addressed by Tripp (2002). Tripp sees regulation as a response to information deficiencies, and with respect to seed regulation he regards the main goals as being to provide information to farmers and to control negative externalities in farming. Tripp underlines that confusion over variety names as commercial seed markets developed in North America and Europe was part of the rationale for variety registration. In addition, he notes, variety regulation is intended to prevent diseased seed from being sold (Tripp 2002).

Seed certification was introduced to ensure that the seed for sale actually is from the variety it is claimed to be. Problems associated with seed regulation include regulatory capture, costs, relevance of regulations and standards and lack of transparency (Tripp 2002).

Although regulation sometimes is presented as a neutral tool, Tripp (2002) stresses that it is normally the result of compromise among various political interests and that seed regulatory reform will necessarily mean balancing competing interests. In his opinion, the most useful way to approach regulatory reform is to separate between the standards, monitoring and enforcement (Tripp 2002).

The various parts of the system may be mandatory or voluntary, and regulatory responsibility can be divided between public and private bodies. The EU and the United States have, as mentioned by other writers as well, chosen different strategies in this respect. However, even though the EU system is mandatory and the US system is of a voluntary nature, they are quite similar in practice – many varieties in the USA are submitted voluntarily to National Variety Review Boards for evaluation, and the decision-making bodies in both systems receive input from seed

companies and must answer to the farming communities through the democratic process (Tripp 2002).

Tripp (2002) underlines that farmer education and empowerment and farmers' political power and organization are all central factors in ensuring that seed regulations are effective, and the two latter factors and farmer participation are especially important for systems based on voluntary testing. Regardless of the specific nature of the seed regulatory system, farmers and the seed industry must understand its operation and purpose if it is to be effective (Tripp 2002).

5.2.5 Literature in 5.2

Table 3: Literature in 5.2

Literature reference	Main relevant points
Almekinders, Conny J.M. and Niels P. Louwaars (2002), 'The Importance of the Farmers' Seed Systems in a Functional National Seed Sector' in <i>Seed Policy, Legislation and Law: Widening a Narrow Focus</i> (ed.: Niels P. Louwaars) (Food Products Press)	<ul style="list-style-type: none"> • seed laws came about in Europe as result of pressure from both farmers and seed producers • ...who wanted protection from dishonest and speculative producers
Louwaars, Niels (2002a), 'Seed Policy, Legislation and Law', <i>Journal of New Seeds</i> , 4 (1): 1–14	<ul style="list-style-type: none"> • three approaches to regulation based on role of government: control, competition and cooperation • control systems common in Europe • in competition systems, competition in seed market seen as only regulation needed • cooperation system in the USA: government shares tasks and responsibility with private sector
Louwaars, Niels (2002b), 'Variety Controls', <i>Journal of New Seeds</i> , 4 (1): 131–142	<ul style="list-style-type: none"> • compulsory variety registration developed in Europe during the first half of the 20th century • caused by lack of clarity with regard to names and varietal identity • the resulting registration system linked one name to one variety based on morphological descriptions and central agricultural characteristics • varietal identification and transparency still central in seed laws • DUS criteria for variety registration • VCU testing compulsory in the EU • VCU originated from farmer-created testing systems for validation of supplier claims • now usually focuses on adaptation to local conditions and product values • varietal change not possible during commercial life of variety • voluntary system works in USA because of seed industry competition, literate farmers and network of universities etc. conducting variety trials • rather than requiring a new variety to perform better than the standard it should be required not to perform worse

Literature reference	Main relevant points
	<ul style="list-style-type: none"> • government should regulate commercial seed trade only, not farmers' seed systems • heterogeneous varieties should be allowed to be registered and enter commercial market
Tripp, Robert and Niels P. Louwaars (1997), 'Seed Regulation: Choices on the Road to Reform', <i>Food Policy</i> , 22 (5): 433–446	<ul style="list-style-type: none"> • farmers in Europe and the USA demanded seed regulation as result of opportunism and inexperience during early stage of seed industry • the two systems developed differently • no national variety release authority in USA; variety registration, performance testing and seed certification is voluntary • all the above are mandatory in the EU • uniformity is emphasized more in the EU than in the USA
Tripp, Robert (ed.) (1997a), <i>New Seed and Old Laws: Regulatory Reform and the Diversification of National Seed Systems</i> (London: Intermediate Technology Publications and ODI)	<ul style="list-style-type: none"> • reform of seed regulatory frameworks • focus on developing countries
Tripp, Robert (1997b), 'Regulation and Regulatory Reform', in <i>New Seed and Old Laws. Regulatory Reform and the Diversification of National Seed Systems</i> (London: Intermediate Technology Publications and ODI)	<ul style="list-style-type: none"> • nature and rationale of regulation • regulation as political process
Tripp, Robert (2002), 'Seed Regulatory Reform: An Overview', <i>Journal of New Seeds</i> , 4 (1/2): 103–115	<ul style="list-style-type: none"> • regulation as response to information deficiencies: seed regulation should provide information and control negative externalities • confusion over variety names as part of rationale for variety registration • also intended to prevent diseased seed from being sold • seed certification introduced to ensure seed for sale is from claimed variety • problems: regulatory capture, costs, relevance of regulations/standards and lack of transparency • regulation as result of compromise among various political interests • essential to separate between standards, monitoring and enforcement • EU and US systems quite similar in practice • farmer education and empowerment and farmers' political power and organization central to effective regulation, especially voluntary

5.3 Effects of seed legislation on agricultural biodiversity

The effects of seed policies on seed diversity are explored by Visser (2002), who claims that even though globalization is the main cause of the genetic erosion that came after scientific plant breeding emerged on the international scene, seed regulations often have a negative impact on

local seed systems and genetic diversity. Whereas a substantial amount of genetic diversity is conserved in gene banks, Visser underlines that such banks cannot single-handedly maintain the needed diversity and that on-farm conservation should be an important complementary strategy. He also argues that seed legislation has an impact on both formal and participatory plant breeding programmes, as well as the number of varieties that are released and become available to farmers. In his opinion, seed policies and policies on agricultural biodiversity should therefore be seen in connection (Visser 2002).

According to Visser, the seed policies of Western countries were created to guarantee quality standards for farmers buying seed, for example regarding viability and identity, and quality standards for the food-processing industry and consumers, regarding identity and properties of the produce. However, he points out, legislation on seed quality control and variety registration has created problems for those seeking to develop or maintain varieties, create local seed enterprises or cultivate locally adapted varieties, because such varieties may not fulfil the requirements for distinctness, uniformity and stability. 'Farmers' varieties' for example, defined as varieties developed through deliberate selection by one or more farmers, usually display a high degree of genetic heterogeneity and are adapted to the local environment under which they were developed. In addition, such varieties tend to be unstable and are not necessarily distinct from each other. The legislation also constitutes a barrier because those involved in such initiatives usually have only limited resources at their disposal for seed inspection and meeting the regulation requirements (Visser 2002).

Various ways to facilitate conservation work related to agrobiodiversity had already been discussed in the EU in 2002, and Visser mentions both the German proposal of excluding traditional varieties from the required variety registration in the EU seed legislation and the proposal that variety registration should be made voluntary. He underlines that in addition to ensuring that seed policies are not detrimental to the maintenance and development of crop genetic diversity, it is important that they include measures to safeguard this diversity on-farm, thereby contributing to food security (Visser 2002).

Visser is not alone in arguing that European seed legislation creates difficulties for the conservation of plant genetic resources. In a short chapter on seed policies in his *Participatory Research and On-Farm Management of Agricultural Biodiversity in Europe*, Pimbert (2011) argues that the current EU legislation regulating the sale of seeds acts as a barrier to on-farm conservation and participatory research, by restricting access to seeds that do not pass the DUS test. He claims that the demand for uniformity central to this test has reduced genetic diversity in the EU and the number of varieties available to farmers. Noting the threats from climate change, he argues that changing today's seed regulations so that they can allow for continued maintenance of heterogeneous crop varieties is necessary to ensure resilient food systems in the future (Pimbert 2011).

A similar argument is presented in the FSO report on breeding initiatives related to landraces, conservation varieties and amateur varieties in Europe. In this report Osman and Chable (2007) claim that the upscaling

of existing breeding initiatives on landraces and other heterogeneous varieties is limited by the EU seed legislation, because the farmers involved are not allowed to exchange or sell the seeds they produce. The authors therefore argue that adapted legislation is urgently needed to address this problem, so that such initiatives can flourish and expand.

Also Bocci et al. (2009) see seed legislation as problematic: it interacts negatively with efforts related to protected geographical indications because EU seed legislation is not adapted to the type of seed relevant in such contexts, and restricts seed exchange.

Seed legislation can also be seen as of importance for issues such as Farmers' Rights, as the concept is defined in the Plant Treaty, and the right to food, conceptualized as a human right. Seed laws are noted as a barrier to the realization of Farmers' Rights by Andersen (2009), who emphasizes this as a problem especially in the industrialized countries, as traditional varieties usually do not meet the requirements for registration and certification. These findings are highlighted in the report published in 2009 by the UN Special Rapporteur on the right to food, which recommends that all states ensure that their seed legislation does not cause the exclusion of farmers' varieties, and that these varieties should be included on national lists (United Nations 2009).

5.3.1 Literature in 5.3

Table 4: Literature in 5.3

Literature reference	Main relevant points
Andersen, Regine (2009), <i>Information Paper on Farmers' Rights submitted by the Fridtjof Nansen Institute, Norway, based on the Farmers' Rights Project</i> , Input paper submitted to the Secretariat of the Plant Treaty 19 May 2009 (IT/GB-3/09/Inf. 6 Add. 3)	<ul style="list-style-type: none"> • seed laws as barrier to the realization of Farmers' Rights and the further development of crop genetic diversity • many varieties are excluded from the market as they do not fulfil criteria for variety release • farmers are not allowed to exchange and sell farm-saved seed
Bocci, Riccardo, Thomas Levillain, Guy Kastler, Estelle Serpolay, Silvio Pino, Maria Francesca Nonne, Conny Almekinders, JuanMa González, Thais Valero and Silvia Casado (2009), <i>National Survey on the Role of Innovative Market Mechanisms (Farm Seed Opportunities)</i>	<ul style="list-style-type: none"> • seed legislation problematic for protected geographical indications initiatives
Osman, Aart and Veronique Chable (2007), <i>Breeding Initiatives of Seeds of Landraces, Amateur Varieties and Conservation Varieties (Farm Seed Opportunities)</i>	<ul style="list-style-type: none"> • EU seed legislation hinders upscaling of initiatives for maintaining and developing diversity
Pimbert, Michel (2011), <i>Participatory Research and On-Farm Management of Agricultural Biodiversity in Europe</i> (London: IIED)	<ul style="list-style-type: none"> • EU seed legislation as barrier to conservation • DUS requirement reduces diversity • changing the system necessary
United Nations (2009), <i>Seed Policies and the Right to Food: Enhancing Agrobiodiversity and Encouraging Innovation</i> , Report of the Special Rapporteur on the right to food, Sixty-fourth session of the General Assembly, A/64/170 (New York: United Nations)	<ul style="list-style-type: none"> • recommends that states ensure that farmers'/traditional varieties are included in national lists/catalogues

Literature reference	Main relevant points
Visser, Bert (2002), 'An Agrobiodiversity Perspective on Seed Policies', <i>Journal of New Seeds</i> , 4 (1): 231–245	<ul style="list-style-type: none"> • globalization main cause of genetic erosion • negative impact of seed regulations • agrobiodiversity important for coping with, e.g. climate change • on-farm conservation and farmers' varieties central • seed legislation problematic for maintaining diversity: varieties not fulfilling requirements • one solution: exclude traditional varieties from variety registration; or: voluntary registration • seed legislation should contribute to maintenance of diversity and food security

5.4 Commission Directive 2008/62/EC

Louwaars (2007) notes that Commission Directive 2008/62/EC, on conservation varieties of agricultural species, represents an approach to farmers' seed systems that includes these systems in the regulatory framework. As opposed to leaving farmers' seed systems untouched by relaxing the regulatory system, this directive allows varieties defined as 'conservation varieties' to be marketed under somewhat different rules than other varieties. As Louwaars sees it, this system assumes that the farmers are well educated; further, that only interested farmers will be looking for seed from such varieties and that they will be familiar with the characteristics. He deems it unlikely that this EU directive will make it possible for dishonest seed producers to sell poor-quality seed by using the label 'conservation variety'.

5.4.1 Key concepts

Also Lorenzetti and Negri (2009) discuss Directive 2008/62/EC, specifically what these authors see as its key concepts and the likely consequences for implementation. Three concepts used in this directive are considered to be of particular importance for its implementation: agricultural landraces and varieties, region of origin and genetic erosion risk. As Lorenzetti and Negri see it, there is likely to be substantial variation in interpretation and implementation because not all the terms are defined in the directive, because of the lack of acceptance of some of the given definitions among some stakeholders, the use of different terms in different languages and the different meaning given to some terms in the English version compared to that generally accepted in scientific literature.

With regard to the definition of 'agricultural landraces' the authors recommend using the definition proposed and accepted at the Second Meeting of the On-farm Conservation and Management Task Force of the ECPGR in 2006 (see 5.1.1 above), or the definition provided by the Working Group of the Italian Interregional Seed Project. The reasons are that these definitions see landraces as populations which have adapted to

the local environment; considerable attention is paid to cultural heritage; these landraces pave the way for recognition of farmers' rights; they support the development of local economies based on cultivation of landraces, are somewhat restrictive and better satisfy the requirement to indicate in which region the variety in question has been cultivated historically.

Regarding the use of the term 'region of origin' Lorenzetti and Negri point out that the context in which it is used in Directive 2008/62/EC, ('When a member state accepts a conservation variety, it shall identify the region or regions in which the variety has historically been grown and to which it is naturally adapted, hereinafter "region of origin"') seems to imply that the directive covers only populations currently under cultivation and that registration and commercialization of material from gene banks has not been foreseen. The registration of landraces and varieties from gene banks is also predicted to be problematic under the new directive because of difficulties in proving adaptation to the environment and their existence in historical records.

In addition, to be included in the national catalogues of conservation varieties, a conservation variety must be 'under threat of genetic erosion' as the term is defined in the directive. This makes an evaluation and assessment of the threat of genetic erosion becomes a necessary part of the national implementation of Directive 2008/62/EC. The authors argue that the first step when it comes to estimating the risk of losing a landrace should be to compile national inventories of landraces to be used as baselines. When it comes to the risk of losing diversity within the various landraces, an evaluation of this would require assessment of genetic diversity and population structure, as well as the socio-economic aspects involving in farmers' decision-making regarding cultivation.

Lorenzetti and Negri conclude that active promotion and implementation of conservation activities related to crop genetic diversity will continue to be important after the implementation of Directive 2008/62/EC, and that implementation appears to be difficult due to the lack of data regarding the above-mentioned issues. In their opinion, the best way forward would be to use a bottom-up process involving regional authorities and agencies, *inter alia* for compiling and publishing data on the number of conservation varieties, their region of origin and the level of threat. In addition, these regional entities should 'listen to the requests of people interested in their commercialization' and 'prepare a list of conservation varieties that Member States will be called upon to register' (Lorenzetti and Negri 2009: 294).

A discussion of the central concepts of Directive 2008/62/EC is also provided by Louwaars et al. (2010). In their study, which is one of the publications of the FSO project, they aim to analyse the matches and mismatches between the directive and current practice with regard to varieties not listed in the national and EU catalogues, as well as whether Directive 2008/62/EC can be seen as a contribution to the conservation and use of plant genetic resources or pose a barrier to such work.

Further, Louwaars et al. (2010) note that when it comes to the requirements for acceptance as a conservation variety given in Article 4 of Directive 2008/62/EC, the demand that a variety should present ‘an interest for the conservation of plant genetic resources’ can be interpreted in different ways – one being that any variety is of such interest, and another that only varieties falling outside the diversity expressed by modern varieties listed in the common and national catalogues; further, that the first solution best promotes conservation and sustainable use of crop diversity. They also argue that the focus with regard to implementation should be on the identifiability/distinctness of the landraces, not uniformity and stability, and that the most practical way to go about assessing distinctness would be to use descriptions of the distinguishing characters of the variety. Louwaars et al. also acknowledge the importance of Article 7 allowing member states to ‘accept more than one name for a variety if the names concerned are historically known’ (Directive 2008/62/EC: Art. 7, 1) because this might be important for maintaining the connection between variety and history.

As to the directive’s two-year exclusion of varieties that have been removed from the common catalogue, Louwaars et al. underline that there is no scientific reason why it should be necessary to wait two years before such varieties can be sold as conservation varieties, and that this limitation seems to be the result of a compromise between seed-industry interests and biodiversity concerns.

Louwaars et al. (2010) also discuss Articles 8 and 9 and the concept ‘region of origin’ as used in the directive, and argue that although concepts like regional identity, culture and history are important in relation to landraces, the decision to restrict the cultivation of a conservation variety to what is determined to be its region of origin according to the criteria of the directive seems to stem from fears that these varieties could be misappropriated, or could compete with regular varieties. They authors maintain that no evidence exists that indicates reason to fear either.

The directive leaves the interpretation of the term ‘region’ up to the member states, and in the opinion of Louwaars et al. (2010) it is important that it is interpreted widely. This is also of importance in relation to Article 11 on seed production, which limits seed production to the region of origin, except in cases where ‘a specific environmental problem’ (Directive 2008/62/EC: Article 11, 1) poses a barrier to certification in the region of origin. Part of the reason for why a narrowly defined region of origin may be harmful to the conservation and sustainable use of crop genetic resources, they note, is that the potential market for seed then might become too small for it to be possible to recover the costs associated with quality control, variety maintenance, seed production and marketing. Article 13 does open up for marketing of seed from conservation varieties in regions outside the region of origin, but only within the same country.

Another possibly problematic feature concerns the quantitative restrictions set for marketing of seed from each conservation variety. Louwaars et al. (2010) point out that, apart from avoiding too large areas being set aside for the cultivation of one conservation variety out of concerns for the biodiversity objective stated in the directive, there are no good

reasons for such limitations: they might actually pose a barrier to the conservation and sustainable use of such varieties as the quantities allowed might not be large enough to justify investing in the production of such varieties.

It is also worth noting that Louwaars et al. (2010) see Article 21 on notification of recognized organizations as important because of what they see as its potential to enable the participation of farmers and seed networks.

On the whole, Louwaars et al. (2010) conclude that while Directive 2008/62/EC can be seen as providing a framework for the cultivation of conservation varieties in areas where they are not grown now and opening up for activities that were previously illegal on paper but tolerated in practice, it also might serve to create barriers to the conservation and sustainable use of plant genetic resources in the EU. In their view, the implementing rules drafted at the national level will be of high importance.

Louwaars et al. (2010) also discuss various concepts and standards used in variety testing and seed controls. One of their main points is that although varietal uniformity is important in relation to some characteristics for agronomic reasons, such as maturity and plant architecture, varietal uniformity in relation to morphological characteristics is useful only for administrative reasons. As a key characteristic of conservation varieties is their genetic heterogeneity, agronomic and other characteristics where most such varieties display uniformity are the most central tools for distinguishing and describing them. If, in addition, morphological uniformity is demanded, this will in most cases be problematic for such varieties and might therefore work against the objective of the directive.

Although the directive does open up for legal distribution of seeds (within certain limits) of what are defined as conservation varieties, some varieties that Louwaars et al. (2010) regard as central to increased genetic diversity in the field are excluded. This is because the concept of 'conservation varieties' demands a historic connection with a region of origin – as a result, what the authors call New Population Varieties and New Farmers' Varieties are not covered.

Based on interviews and correspondence with anonymous country representatives and other officials, Louwaars et al. (2010) conducted an investigation of country positions during the discussions leading to Directive 2008/62/EC. Their conclusion is that these discussions were dominated by countries with a significant commercial seed sector, and that the main difference between countries concerned whether they emphasized biodiversity issues or coherence with existing EU legislation.

Chable et al. (2010), another FSO study, examines the definitions of 'variety' used in the EU, as well as the meaning of 'local adaptation' and 'genetic erosion'. This study goes through the translations for the term 'landraces' used by various countries in their national translations of Directive 2008/62/EC and notes the differences in how EU member countries interpret the term; some focus on the cultural aspect of these varieties, whereas others emphasize the physical aspect. Chable et al. also

argue that a considerable number of landraces and peasant varieties will fall outside the scope of Directive 2008/62/EC if the homogeneity rate for conservation varieties is set at 90% and less – and thus that marketing of seed from such varieties will still not be allowed. As conservation varieties also have to be stable, the authors underline that nearly-stable varieties, varieties with stability connected to certain traits, and unstable varieties will all be excluded from this status (Chable et al. 2010).

Chable et al. (2010) also note that Directive 2008/62/EC connects two terms with somewhat different meanings when it links ‘local adaptation’ to ‘region of origin’. In their view, the term ‘region of origin’ emphasizes historical and cultural aspects and assumes that all relevant varieties belong to a specific area, whereas ‘local adaptation’ has more agronomic and ecological connotations. Further, they hold, this connection ignores the travels all cultivated species have done and the resulting adaptation to various new environments. Landraces may be introduced to new regions and adapt to the local conditions: as these authors see it, discounting this possibility by linking a variety to a specific area is equivalent to classifying such a variety as a thing of the past rather than a still-evolving resource.

5.4.2 National implementation efforts

In Finland, allowing uncertified seed from landraces to be marketed was, notes Paavilainen (2009), incorporated in the Seed Trade Act of 2000 (728/2000), with a Statute on Registration of Conservation Varieties (437/2001) and a Statute on Seed Trade of Landraces of Cereal and Fodder Plants (117/00) specifying the rules, on the basis of Council Directive 98/95/EC, which opened up the possibility of establishing such conditions prior to Directive 2008/62/EC. The Finnish rules might offer lessons for implementation of the latter directive.

Under these requirements, landraces, old commercial varieties and old modified commercial varieties are considered eligible for registration as conservation varieties, if they are not listed on the EU common catalogue of varieties of agricultural plant species or any national lists or protected by plant breeders’ rights.

As of September 2008, 12 varieties had been listed as conservation varieties in Finland; 11 of these were defined as landraces. In Finland, it is also possible to apply for support in the form of subsidies for maintenance of conservation varieties.

Also legislation in Italy may be of interest for the debate about the national implementation of Directive 2008/62/EC and the national implementation of the Plant Treaty. As Lorenzetti et al. (2009) explain, the objective of Italian Law 46/2007 was to implement Articles 5, 6, and 9 of the Plant Treaty; and Decree of 18 April 2008 provided further specifications. In addition, there is a body of regional laws on the conservation of plant genetic resources, most of them passed prior to Law 46/2007. Lorenzetti et al. (2009) emphasize the need to first harmonize Law 46/2007 with Directive 2008/62/EC and then the relevant regional laws.

Both Law 46/2007 and Directive 2008/62/EC provide limitations on the quantities of seed of conservation varieties that can be sold, and which areas the seed can be sold – but while the Italian law limits the amount of seed each farmer can sell of each variety, the EU directive limits the total amount of seed that can be sold per conservation variety and per species. According to Lorenzetti et al. (2009: 202), Directive 2008/62/EC seems to be a compromise between those who regard the varieties in question as particularly adapted varieties that are important for re-creating agriculture, and those who see such varieties as relics from the past that are being ‘used to break up the seed market’.

As Lorenzetti et al. see it, the regional laws on conservation of agricultural biodiversity passed in six of Italy’s regions demonstrate the high degree of local interest in the issue and the importance of taking the local level as the point of departure as regards recognition of conservation varieties and their inclusion in catalogues. Italy’s various regional laws on the conservation of agricultural biodiversity have many elements in common, including: the creation of regional inventories, identification of key farmers for each species, enabling non-profit diffusion of a limited amount of seed, and promoting equitable benefit-sharing and traditional knowledge.

According to Lorenzetti et al. (2009) the restrictions concerning the quantity of seed allowed to be distributed and the areas where the varieties can be grown and seed produced are so strict that the Italian system ‘does not interfere with large-scale seed trade’ (Lorenzetti et al. 2009: 204). They also argue that only those conservation varieties that are regarded as of commercial interest should be included in the national catalogue and the common catalogue.

While Lorenzetti et al. (2009) think that the implementation of Directive 2008/62/EC can have positive consequences for the conservation of crop diversity through the commercialization of landraces, they argue that the best way to maintain Italian agricultural biodiversity is through a bottom-up approach that coordinates regional initiatives.

Implementation of Directive 2008/62/EC is also discussed by Frese et al. (2009). In this publication as well, the terms ‘landrace’, ‘genetic erosion’ and ‘adaptation’ are analysed and seen as more or less problematic. The authors conclude that the criteria of this directive are not directly related to hard scientific evidence, and they argue that implementation may prove difficult due to lack of clarity as to which actions can be undertaken within its limits.

They find the term ‘landrace’ to be difficult in practice, and feel that ‘the dynamic and cyclic nature of plant breeding is seldom taken into consideration’ in efforts to define it (Frese et al. 2009: 86). As a solution they suggest distinguishing between landraces, varieties and accessions depending on biological state, legal state, adaptation and seed supply system. A landrace will then be characterized by an active and evolving biological state; its adaptation will be evidenced by practical proof; the seed system within which it exists is informal; and it is not protected by plant breeders’ rights. However, the mere existence of a geographical name is not seen as sufficient proof that a historical variety is adapted to a specific area and deserves to be called a ‘landrace’.

According to Frese et al. (2009) adaptation is a problematic criterion for conservation varieties because most gene-bank accessions will not be sufficiently adapted to current environmental conditions, compared with other genetic material. Further, if the breeding systems of various crops are taken into consideration when analysing the risk of genetic erosion, then the breeding category most likely to suffer from genetic erosion within populations is population varieties. With regard to genetic erosion between populations or varieties, they argue that for clonal accessions priority should be given to landraces not conserved in gene banks; for line varieties, priority should be given to crops with declining breeding activities; and for outbreeding crops, priority might be accorded to varieties from heterotic groups and varieties with decreasing breeding activities.

In Germany, an inventory of landraces still being grown and ‘other varieties’ (from gene banks) will constitute the first step towards implementing Directive 2008/62/EC. Frese et al. (2009) discuss the value of using a crop-based approach, a regional approach and an explorative approach in creating a national inventory. A crop-based approach takes as its point of departure the origin of accessions listed in databases, while a regional approach tries to determine the range of crops and accessions originating from a certain area. The third approach, the explorative approach, aims to map the landraces still being grown in a particular area, for example by seed-saver organizations or other civil society entities.

Frese et al. (2009) conclude that if all of the four central conditions of the directive must be proven – local adaptation, regional adaptation, risk of genetic erosion, and conservation interest – very few candidate varieties will meet the criteria and be accorded status as conservation varieties.

Andersen (forthcoming, 2012) discusses national implementation of Directive 2008/62/EC in Norway. She argues that the country’s implementation of the EU seed legislation is still detrimental to Farmers’ Rights, as the concept is used in the Plant Treaty, even though some improvements were introduced when Norway introduced new legislation in 2010 as a result of Directive 2008/62/EC.

The revised national legislation enables Norwegian farmers both to exchange and sell seeds on a non-commercial basis and to register as professional seed suppliers of conservation varieties. So far, seven conservation varieties have been added to the official Norwegian list of varieties and a considerable number of applications are currently being prepared (Andersen, forthcoming 2012).

5.4.3 Suggested changes

Another contribution that discusses Directive 2008/62/EC is an article by Bocci from 2009. Bocci argues that this directive can be seen as a first step towards opening up the seed market for varieties that fail to fulfil the standard criteria of EU seed legislation. However, he also stresses that only certain types of varieties – those for which a link to a specific territory can be historically proven – will be included in the new category ‘conservation varieties’. Other types of varieties – such as those produced

by participatory plant breeding and not fulfilling the DUS criteria, old varieties that are no longer listed in the national and common catalogues, varieties without a specific area of origin and varieties adapted to different areas than their region of origin – can still not be legally marketed. Bocci (2009) underlines that the certification system for conservation varieties under the new directive is too similar to the standard EU certification system, and that this is a bigger problem than the limitations with regard to quantity and region (Bocci 2009).

Looking at Directive 2008/62/EC in connection with the Plant Treaty, Bocci (2009) writes that if the directive is implemented in the right way it can contribute to the realization of Article 6 on sustainable use of the Plant Treaty by providing incentives for localized production and by legalizing the marketing of a wider range of varieties. In connection with implementation of the Plant Treaty, he argues that the directive presents new opportunities for civil society to become involved in the identification of conservation varieties.

The FSO studies also underline how current seed legislation acts as a barrier to the maintenance of crop diversity in the form of on farm conservation and breeding. Goldringer et al. (2010) stress that legislation concerning conservation varieties must become more flexible with regard to descriptive criteria, region of origin and the definition of genetic erosion risk; moreover, an appropriate legislative framework is needed for non-conventional varieties that cannot be classified as conservation varieties. The need to create legal space for this type of varieties, such as populations created within participatory plant breeding or other breeding methods favouring diversity, is underlined in Bocci et al. 2010 as well.

The various findings of the FSO project are summarized in Bocci et al. *Policy Recommendations* (2010), with recommendations. This publication emphasizes that the current EU seed legislation does not offer any solutions for non-conventional varieties that do not fall into the ‘conservation variety’ category, such as population varieties, farmers’ varieties and other non-uniform varieties, and that it is important to create the necessary legal space for their cultivation and commercialization. The need to focus on distinctness (for the purpose of identification) rather than uniformity and stability when it comes to the implementation of Directive 2008/62/EC is also underlined, along with the need to make the geographical limitations optional, and to adapt and increase the quantitative limitations.

5.4.4 Literature in 5.4

Table 5: Literature in 5.4

Literature reference	Main relevant points
Andersen, Regine (forthcoming, 2012), <i>Plant Genetic Diversity and Farmers’ Rights in Norway</i> (Lysaker, Norway: Fridtjof Nansen Institute) (Published in Norwegian in 2011)	<ul style="list-style-type: none"> • EU seed legislation, and Norway’s implementation of it, still detrimental to Farmers’ Rights after Directive 2008/62/EC • Important improvement in Norway; now possible for farmers to exchange and sell seeds on a non-commercial basis

Literature reference	Main relevant points
Bocci, Riccardo (2009), 'Seed Legislation and Agrobiodiversity: Conservation Varieties', <i>Journal of Agriculture and Environment for International Development</i> , 103 (1/2): 31–49	<ul style="list-style-type: none"> • opening up of seed market for increased variety, but only some types of varieties • too similar to standard EU certification • might contribute to implementation of Plant Treaty
Bocci, Riccardo, Véronique Chable, Guy Kastler and Niels Louwaars (2010), <i>Policy Recommendations (Farm Seed Opportunities)</i>	<ul style="list-style-type: none"> • create legal space for other non-uniform varieties • distinctness rather than uniformity and stability (D, not U and S) • make geographical limitations optional • increase quantitative limitations
Chable, Véronique, Andreas Thommens, Isabelle Goldringer, Thais Valero Infante, Thomas Levillain and Edith Lammerts van Bueren (2010), <i>Report on the Definitions of Varieties in Europe, of Local Adaptation, and of Varieties Threatened by Genetic Erosion (Farm Seed Opportunities)</i>	<ul style="list-style-type: none"> • 'landrace' interpreted and translated in different ways across EU • many landraces and peasant varieties fall outside scope of directive on conservation varieties • 'local adaptation' and 'region of origin' not the same • landraces travel, adapt and develop • linking varieties to specific areas takes away their evolving nature
Frese, Lothar, Ursula Reinhard, Hans-Joachim Bannier and Christoph Ulrich Germeier (2009), 'Landrace Inventory in Germany – Preparing the National Implementation of the EU Directive 2008/62/EC', in <i>European Landraces: On-farm Conservation, Management and Use</i> , Bioversity Technical Bulletin No. 15 (Rome: Bioversity International)	<ul style="list-style-type: none"> • landrace, 'genetic erosion' and 'adaptation' seen as problematic • directive's criteria not directly related to hard scientific evidence • directive may be difficult to implement due to lack of clarity • cyclic nature of plant breeding not considered • adaptation as criterion rules out gene bank accessions • crop-based approach, regional approach or explorative approach to create national inventory • very few varieties will meet all four criteria: local adaptation, regional adaptation, risk of genetic erosion and conservation interest
Goldringer, Isabelle, Julie Dawson, Estelle Serpolay, Nicolas Schermann, Simon Giuliano, Véronique Chable, Edith Lammerts van Bueren, Aart Osman, Silvio Pino, Riccardo Bocci, Michel Pimbert and Thomas Levillain (2010), <i>Report on the Analysis of the Bottlenecks and Challenges Identified for On-farm Maintenance and Breeding in European Agricultural Conditions (Farm Seed Opportunities)</i>	<ul style="list-style-type: none"> • more flexibility needed for descriptive criteria, region of origin and genetic erosion risk • framework needed for non-conventional varieties other than conservation varieties
Lorenzetti, Franco and Valeria Negri (2009), 'The European Seed Legislation on Conservation Varieties', in <i>European Landraces: On-farm Conservation, Management and Use</i> , Bioversity Technical Bulletin No. 15 (Rome: Bioversity International)	<ul style="list-style-type: none"> • central concepts: agricultural landraces and varieties, region of origin and genetic erosion risk • likely to cause variation in interpretation and implementation • commercialization of gene-bank material not foreseen in directive • compilation of national inventories of landraces as starting point for determining genetic erosion

Literature reference	Main relevant points
Lorenzetti, Franco, Silvia Lorenzetti and Valeria Negri (2009), 'The Italian Laws on Conservation Varieties and the National Implementation of Commission Directive 2008/62 EC', in <i>European Landraces: On-farm Conservation, Management and Use</i> , Bioersity Technical Bulletin No. 15 (Rome: Bioersity International)	<ul style="list-style-type: none"> • objective of Italian law and directive different, but both prescribe limitations • directive seen as result of compromise • regional agrobiodiversity laws in Italy seen as evidence of local interest • local level as point of departure seen as important • regional inventories, identification of key farmers, non-profit diffusion of limited seed amounts, equitable benefit-sharing and traditional knowledge central in regional laws • bottom-up coordination of regional initiatives best way forward
Louwaars, Niels (2007), <i>Seeds of Confusion; The Impact of Policies on Seed Systems</i> , PhD dissertation (Wageningen, The Netherlands: Wageningen University)	<ul style="list-style-type: none"> • directive includes farmers' seed systems in regulatory framework • allows 'conservation varieties' to be marketed under different rules
Louwaars, Niels, Chris Kik and Edith Lammerts van Bueren (2010), <i>Matches and Mismatches of the 2008/62/EC Directive, Text, Practice, and Positions</i> (Farm Seed Opportunities)	<ul style="list-style-type: none"> • 'an interest for the conservation of plant genetic resources' leaves room for interpretation • wide interpretation seen as most beneficial • prefers focus on distinctness of landraces, rather than uniformity and stability • no scientific reason for two-year exclusion • necessary with wide interpretation of 'region of origin' • no good reasons for quantitative restrictions • directive as a whole creates framework for legal distribution, but might create barriers to conservation and sustainable use • morphological uniformity requirements will work against goal of directive • New Population Varieties and New Farmers' Varieties excluded from new system • prior discussions dominated by countries with big commercial seed sectors
Paavilainen, Kaarina (2009), 'National Policies and Support Systems for Landrace Cultivation in Finland', in <i>European Landraces: On-farm Conservation, Management and Use</i> , Bioersity Technical Bulletin No. 15 (Rome: Bioersity International)	<ul style="list-style-type: none"> • landraces, old commercial varieties and old modified varieties can be registered as conservation varieties if not in common catalogue or protected by plant breeders' rights • 11 of 12 registered conservation varieties classified as landraces

6 Concluding remarks

As this guide has shown, current EU seed legislation is quite complicated, so the ongoing review process marks a welcome step toward simplification and clarification. Indeed, one main conclusion of the external evaluation conducted as part of the review of EU seed legislation was that the legislation ought to be modified. The evaluation concluded that efforts must be made to rein in the costs for governments, and that complexity and lack of ability to adapt to changing markets are among the main problems of existing EU seed legislation. In addition to complexity, one of the most-cited drawbacks of the current legislation is its negative impact on agricultural biodiversity. Experts and practitioners engaged in the maintenance of such biodiversity argue that EU seed legislation functions as a barrier to this work: under today's seed legislation, varietal change is not allowed during the commercial life of a variety; and it is difficult to market old, traditional and/or locally adapted varieties legally, as these usually do not fulfil EU requirements for distinctness, uniformity and stability. Efforts to develop or maintain such varieties, to create local seed enterprises and to upscale existing initiatives face an uphill struggle. Changing the legislation has become recognized as necessary. Suggested alterations include exempting traditional varieties from variety registration and introducing voluntary registration.

In this context it is relevant to compare the control-based EU seed system with the voluntary system practised in the USA. In the latter, variety registration, performance testing and seed certification are all voluntary, and there is no national variety release authority. By contrast, all of the above are mandatory in the EU. In addition, uniformity is held to be emphasized more in the EU than in the USA. It can be argued that the need of seed users to know what they are buying could be met without all varieties having to adhere to strict requirements regarding distinctness, uniformity and stability; further, that a system with more voluntary elements would work also in the EU. As long as the labelling clearly states the extent to which the seed can be expected to be distinct, uniform and stable, surely the interest of users in this regard can be regarded as sufficiently protected.

One of the scenarios presented in the 'options and analysis' paper of the review process, scenario 4 – also referred to as the 'enhanced flexibility system' – would make the EU system more similar to the one in the USA if implemented. This scenario introduces a system with mandatory basic provisions for registration and a voluntary level of higher assurance for registration and certification that enables cultivators of diverse varieties to legally market and access seed which does not meet the current testing criteria. Of the scenarios presented, this scenario would probably be the most beneficial for the maintenance of agricultural biodiversity, and also seems to be the one preferred by a majority of stakeholders involved in the maintenance of crop genetic diversity who responded to the survey conducted as part of the review process.

However, seed legislation is a contested matter, and considerable disagreement exists among stakeholders regarding to what extent and how the current EU seed legislation should be changed. The Kokopelli court

case, and the engagement from various stakeholders siding with one of the two parties, showcased these differences. When Advocate General Kokott concluded that the prohibition on the marketing of seed of varieties that do not fulfil the DUS criteria, and, where relevant, the VCU criteria, as established in Council Directive 2002/55/EC on the marketing of vegetable seed, was invalid because it infringes on the principle of proportionality, the freedom to conduct a business, the free movement of goods and the principle of equal treatment, it was both hoped and feared that the judgment of the Court of Justice of the EU would include a similar conclusion. In fact, the converse prevailed.

A revision of EU seed legislation is now underway, with the first legal text expected by the end of 2012. However, since no parts of this legislation were deemed invalid by the Court of Justice of the EU in its judgment, the EU institutions are not obliged to change the key provisions. Still, it is possible that major changes will be introduced, as it has been suggested in the official review documents that new objectives must be taken into account.

Treaties and directives

- Convention on Biological Diversity (CBD), 5 June 1992
- The International Treaty on Plant Genetic Resources for Food and Agriculture (Plant Treaty), 3 November 2001
- Council Directive 66/401/EEC on the marketing of fodder plant seed, 14 June 1966
- Council Directive 66/402/EEC on the marketing of cereal seed, 14 June 1966
- Council Directive 68/193/EEC on the marketing of material for the vegetative propagation of the vine, 9 April 1968
- Council Directive 92/33/EEC on the marketing of vegetable propagating and planting material, other than seed, 28 April 1992
- Council Directive 92/34/EEC on the marketing of fruit-plant propagating material and fruit plants intended for fruit production, 28 April 1992
- Council Directive 98/95/EC amending, in respect of the consolidation of the internal market, genetically modified plant varieties and plant genetic resources, Directives 66/400/EEC, 66/401/EEC, 66/402/EEC, 66/403/EEC, 69/208/EEC, 70/457/EEC and 70/458/EEC on the marketing of beet seed, fodder plant seed, cereal seed, seed potatoes, seed of oil and fibre plants and vegetable seed and on the common catalogue of varieties of agricultural plant species, 14 December 1998
- Council Directive 98/56/EC on the marketing of propagating material of ornamental plants, 20 July 1998
- Council Directive 1999/105/EC on the marketing of forest reproductive material, 22 December 1999
- Council Directive 2002/11/EC amending Directive 68/193/EEC on the marketing of material for the vegetative propagation of the vine and repealing Directive 74/649/EEC, 14 February 2002
- Council Directive 2002/53/EC on the common catalogue of varieties of agricultural plant species, 13 June 2002
- Council Directive 2002/54/EC on the marketing of beet seed, 13 June 2002
- Council Directive 2002/55/EC on the marketing of vegetable seed, 13 June 2002
- Council Directive 2002/56/EC on the marketing of seed potatoes, 13 June 2002

- Council Directive 2002/57/EC on the marketing of seed of oil and fibre plants, 13 June 2002
- Commission Directive 2008/62/EC providing for certain derogations for acceptance of agricultural landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion and for marketing of seed and seed potatoes of those landraces and varieties, 20 June 2008
- Council Directive 2008/90/EC on the marketing of fruit-plant propagating material and fruit plants intended for fruit production, 29 September 2008 (Recast version)
- Commission Directive 2009/145/EC providing for certain derogations, for acceptance of vegetable landraces and varieties which have been traditionally grown in particular localities and regions and are threatened by genetic erosion and of vegetable varieties with no intrinsic value for commercial crop production but developed for growing under particular conditions and for marketing of seed of those landraces and varieties, 26 November 2009
- Commission Directive 2010/60/EU providing for certain derogations for marketing of fodder plant seed mixtures intended for use in the preservation of the natural environment, 30 August 2010

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Annex 1: Overview of the 12 basic Council Directives on the marketing of seed and propagating material

Directive	Scope	Purpose and key points
<p>Council Directive 2002/53/EC of 13 June 2002 on the common catalogue of varieties of agricultural plant species</p>	<p>-the acceptance for inclusion in a common catalogue of varieties of beet, fodder plant, cereal, potato and oil and fibre plant which may be marketed under the provisions of the respective applicable vertical directives</p>	<ul style="list-style-type: none"> - horizontal directive establishing a common catalogue of varieties for the European Community - the common catalogue should be compiled on the basis of national catalogues -each member state must establish at least one catalogue of varieties officially accepted for certification and marketing - member states must ensure that only varieties that are distinct, stable and sufficiently uniform and of satisfactory value for cultivation and use are accepted - member states must ensure that varieties coming from other member states are subject to the same requirements as those developed nationally - once it is published in the common catalogue seed covered by this directive should be freely marketable within the Community - acceptance should be based on results of official examinations and exact and reliable methods - each member state must arrange for official publication of its national catalogue - as far as possible a varieties should be known by the same name in all member states - valid acceptance until the end of the tenth calendar year and might be renewed - seed of accepted varieties should not be subjected to marketing restrictions related to variety - specific conditions shall be established to take account of developments in relation to <i>in situ</i> conservation and sustainable use of plant genetic resources through growing and marketing of seed ‘of landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion’: landraces and varieties shall be accepted in accordance with this directive, specific quality characteristics and requirements shall be taken into account, sufficient information might result in exemption from official examination, after acceptance the variety in question shall be known as ‘conservation variety’ and ‘appropriate’ quantitative restrictions shall apply
<p>Council Directive 66/401/EEC of 14 June 1966 on the marketing of fodder plant seed</p>	<ul style="list-style-type: none"> - originally ‘fodder plant seed marketed within the Community, irrespective of the use for which the seed as grown is intended’, but amended by Council Directive 98/95/EC to ‘the production with a view to marketing, and to the marketing, of fodder plant seed within the Community’ - fodder plants defined as plants of certain listed genera and species - ‘marketing’ defined as the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of seed to third parties, whether or not for consideration (this definition was introduced with the amendments in Council Directive 98/95/EC) 	<ul style="list-style-type: none"> - vertical directive seeking to establish a uniform certification scheme for the Community - fodder plant seed should be marketed only if officially examined and certified - uses the categories basic seed, certified seed, certified seed first generation and certified seed second generation and commercial seed - the rules do not apply to seed intended for export, but imported seed must fulfil the requirements - strict, uniform rules seen as essential to greater productivity - establishes rules on packaging, sealing, sampling, marking and labelling - requires member states to provide control arrangements - less stringent requirements may be used during periods of difficult access - test fields should be established for the purpose of technical harmonization across the Community and comparative purposes when this has been reached - member states may impose additional or more stringent requirements for certification and examination of commercial seed produced in own territory

Directive	Scope	Purpose and key points
		<ul style="list-style-type: none"> - national lists of varieties accepted for certification should be established which makes clear how the listed varieties are to be distinguished from each other (physiological and morphological traits) - accepted varieties must be sufficiently uniform and stable - accepted varieties should be checked at regular intervals and acceptance revoked if conditions are no longer satisfied - any genetic modification must be clearly stated on label and documentation - rules for when seed mixtures intended for use as fodder plants, not intended for use as fodder plants and intended for use in the preservation of the natural environment is given - conditions for crop certification, such as sufficient identity and varietal purity, laid down in Annex 1 - conditions to be satisfied by the seed, such as sufficient identity and varietal purity, laid down in Annex 2 - mentions 'local varieties' and links them to a region of origin, but such seed must be produced under official control - amended by Council Directive 98/95/EC to allow specific conditions under which seed may be marketed in relation to the <i>in situ</i> conservation and sustainable use of plant genetic resources
<p>Council Directive 66/402/EEC of 14 June 1966 on the marketing of cereal seed</p>	<ul style="list-style-type: none"> - originally 'cereal seed marketed within the Community', but amended by Council Directive 98/95/EC to 'the production with a view to marketing, and to the marketing, of cereal seed within the Community' - cereal is defined as plants of a listed set of species - 'marketing' defined as the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of seed to third parties, whether or not for consideration (this definition was introduced with the amendments of Council Directive 98/95/EC) 	<ul style="list-style-type: none"> - vertical directive seeking to establish a uniform certification scheme for cereal seed in the Community - strict, uniform rules seen as essential to greater productivity - cereal seed should be marketed only if officially examined and certified - uses the categories basic seed, certified seed, certified seed first generation and certified seed second generation - member states may impose additional or more stringent requirements for certification of seed produced in own territory - national list shall be established of cereal varieties officially accepted for certification - varieties shall be accepted for certification only if examinations show that they are uniform and stable, and for some species identifiable and others 'can be distinguished' from another - accepted varieties should be checked at regular intervals and acceptance revoked if conditions are no longer satisfied - establishes rules on packaging, sealing, sampling, marking and labelling - the label and documentation of seed of a variety which has been genetically modified must clearly state that so is the case - marketing of cereal blends shall be authorized if the various components complies with the rules applicable to them - less stringent requirements or seed of varieties not included in the common catalogue or in the national catalogues may be used during periods with seed supply difficulties - the directive does not apply to seed intended for export to third countries - official inspections are to be carried out to verify compliance - test fields should be established for the purpose of technical harmonization across the Community and comparative purposes when this has been reached - conditions specified in annexes - amended by Council Directive 98/95/EC to allow specific conditions under which seed may be marketed in relation to the <i>in situ</i> conservation and sustainable use of plant genetic resources

Directive	Scope	Purpose and key points
<p>Council Directive 68/193/EEC of 9 April 1968 on the marketing of material for the vegetative propagation of the vine (including the amendments of Council Directive 2002/11/EC of February 2002)</p>	<ul style="list-style-type: none"> - material for the vegetative propagation of the vine produced and marketed within the Community - ‘vines’ defined as plants of the genus <i>Vitis</i> (L.) intended for the production of grapes or for use as propagation material for such plants - ‘marketing’ defined as the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of propagating material to third parties, whether or not for consideration 	<ul style="list-style-type: none"> - vertical directive seeking to establish a uniform Community certification scheme - strict, uniform rules seen as essential to greater productivity - vine propagating material can be marketed only if it satisfies the Annex 2 conditions and has been officially certified or is officially checked material - uses the categories initial propagating material, basic propagating material and certified propagating material, and standard material - with the amendments from 2002 member states are allowed to authorize propagating material ‘intended to help preserve genetic diversity’ to be placed on the market in appropriate quantities - member states may impose additional or more stringent requirements for certification of propagating material or checking of standard material produced in their own territory than those laid down in annexes 1 and 2 - all member states must establish catalogues of officially accepted vine varieties, and these must be open to public inspection - varieties and clones accepted in other member states must also be accepted for certification and checking - genetically modified varieties shall be accepted only if all appropriate measures have been taken to avoid adverse effects on human health and the environment, and must be clearly identified as such in the catalogue - propagation material should be kept in separate batches marked with variety during growing, transportation etc. - to ensure the identity of material rules regarding packaging, sealing, marking and labelling are laid down - less stringent requirements might be introduced during periods with supply difficulties - conditions relating to the growing crop and to propagation material laid down in Annex 1 and Annex 2 respectively - packaging and labelling requirements specified in Annex 3 and Annex 4 respectively
<p>Council Directive 92/33/EEC of 28 April 1992 on the marketing of vegetable propagating and planting material, other than seed</p>	<ul style="list-style-type: none"> - marketing of vegetable propagating and planting materials, other than seeds, within the Community - ‘marketing’ defined as the holding available or in stock, displaying or offering for sale, selling and/or delivering to another person, in whatever form, of propagating or planting material 	<ul style="list-style-type: none"> - vertical directive seeking to establish harmonized Community conditions that ensure the quality of vegetative propagation and planting material - aims to overcome the barriers to trade and free movement created by different treatment of the material in question in member states through the introduction of Community provisions - a schedule shall be established in Annex 1 for each of the genus and species listed in Annex 2 specifying the conditions vegetable propagating and planting material respectively must comply with - for vegetable propagating material the propagating system applied, the purity of the growing crop and where appropriate, varietal characteristics are emphasized - for vegetable planting material the quality and purity of the crop, and where appropriate, varietal characteristics are emphasized - introduces accreditation of suppliers and laboratories: an official body must verify that they meet the requirements and accreditation must be renewed if their activities change - vegetable propagating material and planting material can be marketed only by accredited suppliers that meet the requirements - vegetable propagating material and planting material from Annex 2 genera and species can be marketed only if of an accepted variety - accepted varieties shall be included in the Common Catalogue of Varieties of Vegetable Species - suppliers, establishments and laboratories shall be supervised and monitored by or under responsibility of the responsible official body

Directive	Scope	Purpose and key points
		<ul style="list-style-type: none"> - on-the-spot checks may be conducted by Commission experts in cooperation with the member states to ensure uniform application - separate lots should be used during growing and lifting or removal from the parent material, and if mixed during packaging etc. composition of the lot and origin of components recorded - requirements for labelling, sealing and packaging shall be established and only vegetable propagating and planting material in sufficiently homogeneous lots, in compliance with the directive and accompanied by the required document can be marketed - some exemptions are allowed for local circulation - less stringent requirements may be adopted during periods with supply difficulties - official inspections should be carried out during production and marketing - trials or test shall be carried out in member states on samples to ensure compliance with the directive and for harmonization purposes
<p>Council Directive 92/34/EEC of 28 April 1992 on the marketing of fruit-plant propagating material and fruit plants intended for fruit production (including later amendments, see Council Directive 2008/90/EC (Recast version))</p>	<ul style="list-style-type: none"> - marketing of fruit-plant propagating material and fruit plants intended for fruit production within the Community - the genera and species listed in Annex 1 and their hybrids, as well as rootstocks and other parts of plants of other genera and species if material of listed genera and species or their hybrids is grafted or to be grafted onto them - does not apply to propagating material or fruit plants intended for export to third countries - ‘propagating material’ defined as seeds, parts of plants and all plant material, including rootstocks, intended for the propagation and production of fruit plants - ‘fruit plant’ defined as plants intended to be planted or replanted, after marketing - ‘marketing’ defined as the sale, holding with a view to sale, offer for sale, and any disposal, supply or transfer aimed at commercial exploitation of propagating material or fruit plants to third parties, whether or not for consideration 	<ul style="list-style-type: none"> - vertical directive seeking to establish harmonized conditions regarding fruit propagating material and fruit plants at Community level to replace those laid down by member states - uses the categories pre-basic material, basic material, certified material and CAC material - propagating material and fruit plants can be marketed only if it is officially certified or qualifies as ‘CAC material’ - for trials or scientific purposes, selection work or to help preserve genetic diversity, member states may provide exceptions for appropriate quantities - specific requirements for each genus or species of Annex 1 are to be established that specify the conditions CAC material, pre-basic material, basic material and certified material must comply with, and the conditions rootstocks and other parts of plans of non-annex 1 genera and species must comply with - suppliers must be officially registered in relation to the activities they carry out, but member states may provide exception for suppliers marketing only to non-professional final consumers - ‘supplier’ defined as any natural or legal person carrying out professionally at least one of the following activities with regard to propagating material or fruit plants: reproducing, producing, preserving and/or treating, importing and marketing - all material is to be produced under the responsibility of suppliers engaged in production or reproduction and the suppliers must identify and monitor critical points in their production process, keep information on this available for examination, take samples when necessary and sure that lots are separately identifiable - propagating material and fruit plants must be marketed with a reference to the variety they belong to - the variety must be legally protected by a plant variety right, officially registered or commonly known - varieties can be officially registered if they have been found to meet certain officially approved conditions and have an official description - the conditions for official registration may include, in particular, distinctness, stability and uniformity - a variety is commonly known if it has been officially registered in another member state, is the subject of an application for official registration in any member state or of an application for a plant variety right

Directive	Scope	Purpose and key points
		<ul style="list-style-type: none"> - separate lots should be used during growing and lifting or removal from the parent material, and if mixed during packaging etc. composition of the lot and origin of components recorded - propagating material and fruit plants can be marketed only in sufficiently homogeneous lots and if qualified as CAC material and accompanied by documentation, or certified as pre-basic, basic or certified material - material or fruit plant of a genetically modified variety must be clearly labelled as such - local circulation of propagating material and fruit plants may be exempted by the member states - less stringent requirements may be adopted in connection with temporary difficulties in supply - official inspections of propagating material and fruit plants shall be carried out during production and marketing to verify compliance with the directive - trials or tests shall be carried out in the Member States on samples to check compliance - Community comparative tests and trial may be carried out and Commission experts may make on-the-spot checks to ensure uniform application - if the propagating material or fruit plants of a particular supplier do not comply with the provisions of this directive, appropriate measures are to be taken against the supplier - propagating material and fruit plants which comply with the conditions and requirements of this directive shall not be subjected to other marketing restrictions
Council Directive 1998/56/EC of 20 July 1998 on the marketing of propagating material of ornamental plants	<ul style="list-style-type: none"> -marketing of propagating material of ornamental plants within the Community - ‘marketing’ defined as sale or delivery by a supplier to another person, with ‘sale’ including holding available or in stock, display with a view to sale and offering for sale 	<ul style="list-style-type: none"> - vertical directive - propagating material can marketed only if it meets the requirements of the directive - propagating material shall be substantially free from harmful organisms and defects impairing quality, have satisfactory vigour and dimensions, have satisfactory germination capacity and if marketed with reference to a variety it shall have satisfactory varietal identity and purity - a schedule may be established for a particular genus or species laying down additional conditions for marketing of the propagating material if there are problems with the quality of the propagating material, it is of great economic importance or consistency with international standards require it - suppliers must be officially registered, unless they market to non-professionals only - propagating material must be marketed in homogeneous lots and properly labelled (if the supplier keeps records of composition and origin different lots might be marketed together), unless marketed to non-professionals only - propagating material can be marketed with reference to variety only if the variety is officially registered, commonly known, protected by plant breeders’ rights or entered on a list kept by the supplier with a detailed description and denomination - propagating material meeting less stringent requirements may be marketed during periods with supply difficulties - official inspections of propagating material shall be carried out by the member states using random checks - where appropriate, test or trials shall be carried out in member states on samples to check compliance and these tests and trials shall be used to harmonize the technical methods of examination

Directive	Scope	Purpose and key points
		<ul style="list-style-type: none"> - at its request and under certain conditions a member state may be wholly or partially released from certain obligations of the directive in terms of types of propagating material of certain genera or species of minimal importance to its territory
<p>Council Directive 1999/105/EC of 22 December 1999 on the marketing of forest reproductive material</p>	<ul style="list-style-type: none"> - production with a view to marketing and the marketing of forest reproductive material within the Community - forest reproductive material is defined as reproductive material of those tree species and artificial hybrids thereof which are important for forestry purposes in all or part of the Community and in particular those which are listed in Annex 1 - marketing defined as displaying with a view to sale, offering for sale, sale or delivery to another person, including delivery under a service contract - does not apply to material intended for purposes other than forestry 	<ul style="list-style-type: none"> - vertical directive seeking to ensure free movement within the internal market of forest reproductive material based on the highest possible standards - recognizes the multifunctional role of forests and the need for specific approaches and actions for different types of forests - seen as necessary to remove any barriers to the free movement of forest reproductive material within the Community to consolidate the internal market and in the interest of all member states that Community rules should impose the highest possible standards - divides forest reproductive material into four categories (derived from basic material): source-identified, selected, qualified and tested - only approved basic material can be used for the production of forest reproductive material which is to be marketed - opens up for the possibility for member states to depart from the requirements laid down in the directive for the purpose of conserving forest genetic resources that are naturally adapted to local and region conditions and are threatened by genetic erosion, provided certain conditions are met - forest reproductive material of species and artificial hybrids listed in Annex 1 can be marketed only if the requirements of Annex 6 are met - suppliers of forest reproductive material must be officially registered - member states may impose additional or more stringent requirements for the approval of basic material and production of reproductive material in their own territory than those laid down in Annexes 2 to 5 and Annex 7 - uses the concept 'regions of provenance' in connection with basic material intended for production of reproductive material of certain type and from relevant species - member states are required to draw up national registers of the basic material of the various species approved in their territory and a summary in the form of a national list - reproductive material derived from approved basic material shall be issued a certificate - during all production stages, reproductive material must be kept separated according to individual units of approval - specifications are given for packaging, labelling and sealing - material containing GMO must be clearly marked - an official control system shall ensure that material remains identifiable throughout its process - on-the-spot checks may be conducted by Commission experts to ensure uniform application of the directive and compliance - less stringent requirements may be adopted during periods with supply difficulties - member states may apply to be released wholly or partially from the provisions of the directive with regard to certain tree species not important for forestry purposes in their territory - detailed requirements for approval of material is specified in the annexes and the number and strictness of demands vary according to type of reproductive material; less is required from 'source-identified' material than the others

Directive	Scope	Purpose and key points
<p>Council Directive 2002/54/EC of 13 June 2002 on the marketing of beet seed</p>	<ul style="list-style-type: none"> - production with a view to marketing, and marketing of beet seed within the EC - ‘beet’ means sugar beet and fodder beet of the species <i>Beta vulgaris</i> L. - ‘marketing’ is defined as the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of seed to third parties, whether or not for consideration 	<ul style="list-style-type: none"> - vertical directive seeking to establish a uniform certification scheme in the Community and to ensure the free movement of seed within it - for the purpose of improved quality of Community beet seed, certain requirements are laid down regarding polyploidy, monogermity, segmentation, analytical purity, germination and moisture content - rules on packaging, sampling, sealing and marking is established to ensure the identity of the seed - beet seed should be allowed to be marketed only if officially examined and certified - uses the categories basic seed and certified seed - specifies the requirements for marketing of beet seed; conditions for certification and marking requirements are provided in the annexes - member states may impose additional or more stringent requirements for the certification of seed produced in their own territory than those laid down in Annex 1 - genetically modified and chemically treated seed should be clearly labelled as such - official inspections, at least by random checks, should be carried out in relation to the marketing of seed - Community comparative tests should be carried out within the EC for the post-control of samples and used to harmonize the technical methods of certification - specific conditions may be established regarding marketing of seed in relation to <i>in situ</i> conservation and sustainable use of plant genetic resources: the seed should be of a known and approved provenance, and appropriate quantitative restrictions should apply
<p>Council Directive 2002/55/EC of 13 June 2002 on the marketing of vegetable seed</p>	<ul style="list-style-type: none"> - production with a view to marketing, and the marketing, of vegetable seed within the Community - ‘vegetables’ means plants of the following species intended for agricultural or horticultural production but not for ornamental uses: onion, leek, chervil, celery, asparagus, spinach beet, chard, red beet, curly kale, cauliflower, sprouting broccoli, Brussels sprouts, Savoy cabbage, cabbage, red cabbage, kohlrabi, Chinese cabbage, turnip, chili pepper capsicum, endive, witloof chicory, large-leaved chicory, industrial chicory, watermelon, melon, cucumber, gherkin, gourd, marrow, cardoon, carrot, fennel, lettuce, tomato, parsley, runner bean, French bean, pea (excluding field pea), radish, scorzonera, aubergine, spinach, corn salad and broad bean - ‘marketing’ is defined as the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of seed to third parties, whether or not for consideration 	<ul style="list-style-type: none"> - vertical directive seeking to establish a uniform certification scheme in the Community and to ensure the free movement of seed within it - all member states should compile one or more national catalogues of vegetable varieties accepted for certification, checking and marketing in their territory - varieties are accepted only if distinct, uniform and stable; in the case of industrial chicory, the variety must be of satisfactory value for cultivation and use - specifies the requirements for marketing of vegetable seed; conditions for crop certification, conditions to be satisfied by the seed, as well as weight specifications and labelling requirements are provided in the annexes - vegetable seed should be allowed to be marketed only if officially examined and certified - uses the categories basic seed, certified seed and standard seed - for the purpose of improved genetic quality of vegetable seed certain requirements are laid down regarding analytical purity and germination - standards on packaging, sampling, sealing and marking is established to ensure the identity of the seed - member states may impose additional or more stringent requirements to those laid down in Annex 1 and Annex 2 for the certification of seed produced in their own territory - genetically modified and chemically treated see should be clearly labelled - official inspections, at least by random checks, should be carried out in relation to the marketing of seed - Community comparative tests should be carried out for the post-control examination and used to harmonize the technical methods

Directive	Scope	Purpose and key points
		<ul style="list-style-type: none"> - specific conditions shall be established to take account of developments in relation to the conservation <i>in situ</i> and sustainable use of plant genetic resources through the growing and marketing of landraces and varieties traditionally grown in particular areas and which are threatened by genetic erosion and varieties with no intrinsic value for commercial production but adapted to particular conditions: appropriate quantitative restrictions should apply and in the case of landraces and other traditional varieties unofficial tests and knowledge gained from practical experience shall result in exemption from official examination if sufficient, and when accepted they shall be referred to as a 'conservation variety', in addition seed marketed under specific conditions related to conservation must be of a known provenance and approved by the appropriate authority
<p>Council Directive 2002/56/EC of 13 June 2002 on the marketing of seed potatoes</p>	<ul style="list-style-type: none"> - production with a view to marketing, and the marketing, of seed potatoes within the Community - 'marketing' is defined as the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of seed potatoes to third parties, whether or not for consideration 	<ul style="list-style-type: none"> - vertical directive seeking to establish a uniform certification scheme in the Community and to ensure the free movement of seed potatoes within it - health status is particularly emphasized - specifies the requirements for marketing of seed potatoes; minimum conditions to be satisfied by seed potatoes, minimum quality conditions for lots of seed potatoes and labelling details are given in the annexes - seed potatoes may be marketed only if they are officially certified and satisfy the minimum conditions laid down in Annexes 1 and 2 - uses the categories basic seed potatoes and certified seed potatoes - member states may subdivide the categories of seed potatoes into grades satisfying different requirements - a Community procedure for the establishment of specific rules for marketing of seed potatoes produced through micro-propagation is laid down - for the purpose of improved genetic value and health status, as well as external characteristics, certain requirements are laid down regarding tolerance for impurities, blemishes and disease - member states may impose additional or more stringent requirements for certification of seed potatoes produced in their own territory than those laid down in Annexes 1 and 2 - more stringent measures shall also be authorized by the Commission in connection with risks related to harmful organisms which do not exist or pose a particular threat in those regions - the Commission may prohibit marketing of seed potatoes from a particular area if the standards have not been met for three successive years - Community rules on packaging, sealing and marking are established to ensure the identity of the seed potatoes - member states may require that seed potatoes produced in their own territory may be separated from other potatoes during production, for plant health reasons - seed potatoes may not be marketed if they have been treated with sprout inhibitors - seed potatoes may not be marketed unless they fulfil the size requirements - genetically modified and chemically treated seed should be clearly labelled - official inspections, at least by random checks, should be carried out in relation to the marketing of seed potatoes - specific conditions may be established regarding marketing of seed potatoes in relation to <i>in situ</i> conservation and sustainable use of plant genetic resources: the seed potatoes should be of a known and approved provenance, and appropriate quantitative restrictions should apply

Directive	Scope	Purpose and key points
<p>Council Directive 2002/57/EC of 13 June 2002 on the marketing of seed of oil and fibre plants</p>	<ul style="list-style-type: none"> - production with a view to marketing, and the marketing within the EC of seed of oil and fibre plants of the following genera and species for agricultural production: groundnut, brown mustard, swede rape, black mustard, turnip rape, hemp, safflower, caraway, soya bean, cotton, sunflower, flax and linseed, opium poppy and white mustard - 'marketing' is defined as the sale, holding with a view to sale, offer for sale and any disposal, supply or transfer aimed at commercial exploitation of seed to third parties, whether or not for consideration 	<ul style="list-style-type: none"> - vertical directive seeking to establish a uniform certification scheme in the Community and to ensure the free movement of seed within it - specifies the requirements for marketing of seed of oil and fibre plants; conditions to be satisfied by the crop and by the seed, as well as lot and sample weights and labelling requirements are given in the annexes - seed of oil and fibre plants should be allowed to be marketed only if officially examined and certified - uses the categories basic seed and certified seed (divided into first generation and second generation, and for some species also third generation), and commercial seed - for the purpose of improved genetic quality and external characteristics certain requirements are laid down regarding analytical purity and germination - standards on packaging, sampling, sealing and marking is established to ensure the identity of the seed - the proportion of the seed crops to be inspected is 10% for self-pollinated crops and 20% for cross-pollinated crops - seed crops shall be grown from officially inspected seed - member states may impose additional and stricter requirements to those laid down in the annexes concerning certification of seed and examination of commercial seed produced in their own territory - genetically modified and chemically treated see should be clearly labelled - official inspections, at least by random checks, should be carried out in relation to the marketing of seed - Community comparative tests should be carried out and used to harmonize the technical methods of certification - specific conditions may be established regarding marketing of seed in relation to <i>in situ</i> conservation and sustainable use of plant genetic resources: the seed should be of a known and approved provenance, and appropriate quantitative restrictions should apply.

Annex 2: Overview of EU directives aimed at the conservation of plant genetic resources

Directive	Scope	Purpose and key points
<p>Commission Directive 2008/62/EC of 20 June 2008 providing for certain derogations for acceptance of agricultural landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion and for marketing of seed and seed potatoes of those landraces and varieties</p>	<p>- derogations for agricultural species (fodder plants, cereals, beet, potatoes, oil and fibre plants) in relation to conservation <i>in situ</i> and sustainable use of these plant genetic resources through growing and marketing in the form of:</p> <p>acceptance for inclusion in the national catalogues of agricultural plant species of landraces and varieties which are naturally adapted to the local and regional conditions and are threatened by genetic erosion</p> <p>the marketing of seed and seed potatoes of such landraces and varieties</p> <p>- 'conservation <i>in situ</i>' defined as the conservation of genetic material in its natural surroundings and, in the case of cultivated plant species, in the farmed environment where they have developed their distinctive properties</p> <p>- 'genetic erosion' defined as loss of genetic diversity between and within populations or varieties of the same species over time, or reduction of the genetic basis of a species due to human intervention or environmental change</p> <p>- 'landrace' defined as a set of populations or clones of a plant species which are naturally adapted to the environmental conditions of their region</p>	<p>- landraces and varieties accepted under this directive are to be referred to as 'conservation varieties'</p> <p>- to be accepted a landrace or variety must present an interest for the conservation of plant genetic resources</p> <p>- member states may adopt their own DUS provisions for conservation varieties, but must ensure that certain minimum standards are followed</p> <p>- a variety cannot be accepted if already listed or was listed up until two years ago, is protected by a plant variety right or about to be so</p> <p>- when a conservation variety is accepted the member state must identify the region or regions where it has historically been grown and which it is naturally adapted to – the 'region of origin'</p> <p>- a conservation variety must be maintained in its region of origin</p> <p>- seed of a conservation variety can be produced only in its region of origin (additional regions can be approved due to specific environmental problems, but the seed can then be used only in the region of origin)</p> <p>- seed of a conservation variety can be marketed only in the region of origin and if it has been produced in the region of origin</p> <p>- member states may approve other regions for marketing, provided these regions are comparable to the region of origin with regard to the natural and semi-natural habitats of the variety</p> <p>- seed must comply with requirements for certification of certified seed as provided in Directives 66/401/EEC, 66/402/EEC, 2002/54/EC, 2002/56/EC and 2002/57/EC, except those concerning minimum varietal purity and the need for official examination/examination under official supervision</p> <p>- 'sufficient' varietal purity is nonetheless required, and seed tests must be carried out check compliance with the requirements (based on samples from homogeneous lots)</p> <p>- imposes quantitative restrictions:</p> <p>for each conservation variety the quantity of seed marketed cannot exceed 0.5% of the seed of the same species used in the member state in one growing season, or the amount necessary to sow 100 ha, whichever is the greater amount (for some species the percentage is 0.3%)</p> <p>the total amount of seed of conservation varieties marketed in a member state cannot exceed 10% of the seed of the species concerned used yearly in the member state in question (or for sowing 100 ha if the said amount is lower)</p> <p>- seed producers must notify the authorities about the size and location of their seed production area before each season</p> <p>- requirements concerning sealing and labelling are introduced</p> <p>- official post control is to be carried out, to ensure varietal identity and purity</p> <p>- seed producers must also report the amount of seed of each conservation variety marketed for each season</p> <p>- opens up for 'recognized organizations of plant genetic resources' to play a role</p>

Directive	Scope	Purpose and key points
<p>Commission Directive 2009/145/EC of 26 November 2009 providing for certain derogations, for acceptance of vegetable landraces and varieties which have been traditionally grown in particular localities and regions and are threatened by genetic erosion and of vegetable varieties with no intrinsic value for commercial crop production but developed for growing under particular conditions and for marketing of seed of those landraces and varieties</p>	<p>- derogations for the vegetable species covered by Directive 2002/55/EC in relation to conservation <i>in situ</i> and sustainable use of plant genetic resources through growing and marketing in the form of:</p> <p>acceptance for inclusion in the national catalogues of varieties of vegetable species, of landraces and varieties which have been traditionally grown in particular localities and regions and are threatened by genetic erosion, called 'conservation varieties', or acceptance for inclusion in these catalogues of varieties with no intrinsic value for commercial crop production but developed for growing under particular conditions, called 'varieties developed for growing under particular conditions'</p> <p>and the marketing of seed of such conservation varieties and varieties developed for growing under particular conditions</p> <p>- 'conservation <i>in situ</i>' defined as the conservation of genetic material in its natural surroundings and, in the case of cultivated plant species, in the farmed environment where they have developed their distinctive properties</p> <p>- 'genetic erosion' defined as loss of genetic diversity between and within populations or varieties of the same species over time, or reduction of the genetic basis of a species due to human intervention or environmental change</p> <p>- 'landrace' defined as a set of populations or clones of a plant species which are naturally adapted to the environmental conditions of their region</p>	<p>Conservation varieties:</p> <ul style="list-style-type: none"> - to be accepted as a conservation variety, a landrace or variety must present an interest for the conservation of plant genetic resources - member states may adopt their own DUS provisions for conservation varieties, but must ensure that certain minimum standards are followed - a variety cannot be accepted if already listed or was listed up until two years ago, if protected by a plant variety right or is about to be so - when a conservation variety is accepted, the member state must identify the locality or localities, region or regions where it has historically been grown and which it is naturally adapted to – the 'region of origin' - a conservation variety must be maintained in its region of origin - seed of a conservation variety may be certified as certified seed of a conservation of a variety if it meets certain requirements, and as standard seed of a conservation variety if it meets certain requirements - test must be carried out to check compliance with these requirements - seed of a conservation variety can be produced only in its region of origin (additional regions can be approved due to specific environmental problems, but the seed can then be used only in the region of origin) - seed of a conservation variety can be marketed only in its region of origin and if it has been produced in the region of origin - member states may approve other regions for marketing, provided these regions are comparable to the region of origin with regard to the natural and semi-natural habitats of the variety - imposes quantitative restrictions: for each conservation variety the amount of seed marketed per year cannot exceed the amount necessary to produce vegetables on the number of hectares set out in Annex 1 for the species in question (varies between 40, 20 and 10 hectares per member state per conservation variety) - seed producers must notify the authorities about the size and location of their seed production area before each season - requirements concerning sealing and labelling are introduced - official post control is to be carried out, to ensure varietal identity and purity <p>Varieties developed for growing under particular conditions:</p> <ul style="list-style-type: none"> - to be accepted as a variety developed for growing under particular conditions, a variety shall have no intrinsic value for crop production and be developed for growing under particular agro-technical, climatic or pedological conditions - seed of a variety developed for growing under particular conditions may be verified as standards seed if it meets certain requirements - seed of varieties developed for growing under particular conditions must be marketed in small packages and not exceed the maximum net weight set out per species in Annex 2 (varies between 250, 25 and 5 gr per package)

Directive	Scope	Purpose and key points
		<ul style="list-style-type: none"> - suppliers must report the amount of seed of each conservation variety and of each variety developed for growing under particular conditions marketed for each production season - opens up for 'recognized organizations of plant genetic resources' to play a role
<p>Commission Directive 2010/60/EU of 30 August 2010 providing for certain derogations for marketing of fodder plant seed mixtures intended for use in the preservation of the natural environment</p>	<ul style="list-style-type: none"> - derogations from Directive 66/401/EEC allowing the marketing of mixtures of various genera, species and subspecies intended for the use in the preservation of the natural environment in the context of the conservation of genetic resources - the mixtures may contain seed of fodder plants covered by the mentioned directive and seed of plants which are not fodder plants within the meaning of that directive - such mixtures are to be called 'preservation mixtures' - a 'source area' is defined as an area designated by a member state as a special area of conservation or an area contributing to the conservation of plant genetic resources 	<ul style="list-style-type: none"> - when a member state authorizes the marketing of a preservation mixture, it must define the region it is naturally associated with, to be called the 'region of origin' - member states may authorize the marketing of preservation mixtures in their region of origin, provided certain requirements are met - for directly harvested preservation mixtures, the requirements are that they must have been collected in their source area (located in the region of origin) at a collection site which has not been sown the last 40 years, that the percentage of the species and subspecies typical of the habitat type and of importance for preservation are appropriate for recreating the habitat type of the collection site, and that the maximum content of other species does not exceed 1% by weight, and a germination rate that is also sufficient for that purpose - for crop-grown preservation mixtures, the requirements are that the collected seed that the mixture is produced from has been collected in its source area in the region of origin at a collection site which has not been sown for 40 years, that the seed of the mixture is of species and subspecies typical of the habitat type at the collection site and of importance for preservation, and that components of the mixture which are seeds of fodder plants as defined by Directive 66/401/EEC must comply with certain criteria of that Directive regarding analytical purity etc. - inspections must be carried out at the collection site for directly harvested preservation mixtures and for crop-grown preservation mixtures tests are to be carried out, to ensure compliance - the total quantity of seed of preservation mixtures marketed each year cannot exceed 5% of the total weight of all fodder plant seed mixtures covered by Directive 66/401/EEC and marketed in the respective year in the concerned member state - producers must notify the authorities of the amount of seed for which they intend to seek authorization, before each season, and the size and location of the intended collection site/sites, or in the case of crop-grown preservation mixtures, the size and location of both the intended collection site/s and multiplication site/s - requirements for sealing and labelling are given - each production season, producers must report the amount of preservation mixtures marketed - opens up for 'recognized organizations of plant genetic resources' to play a role

The Fridtjof Nansen Institute is a non-profit, independent research institute focusing on international environmental, energy, and resource management. The institute has a multi-disciplinary approach, with main emphasis on political science, economics, and international law. It collaborates extensively with other research institutions in Norway and abroad.



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