

Seed Legislation and agrobiodiversity: conservation varieties¹

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Abstract: European seed policies and legislation have contributed to fostering a system in which fewer varieties are traded in ever bigger markets in accordance with the law of economy of scale. Informal seed systems have been marginalised and perceived as outdated in a scenario in which the agricultural system was being modernised. In 1998, however, the European Union recognised the need to conserve agricultural genetic resources and created a catalogue specially for registering what it called ‘conservation varieties’. In June 2008 an EU Directive was issued regulating the agricultural species involved. So what is this ‘new’ category of variety. What impact will it have in supporting the informal conservation initiatives in agricultural biodiversity and making them legitimate? This article sets out to address these questions by analysing the concept of conservation variety from when the phrase was coined up to the recent European directive 62/2008. After describing and evaluating the impact that the directive may have, Italian regulation on conservation varieties will be analysed focusing on synergies and diversities. Lastly, in the light of the International Treaty on Genetic Resources for Food and Agriculture, attention will turn to the regulations in order to verify how they correspond.

Keywords: Seed laws, plant genetic resources, conservation varieties, ITPGREFA, on-farm conservation, directive 98/95, directive 62/2008

Introduction

The industrialisation of agriculture in Europe has dramatically changed the panorama and landscape of the countryside in the last fifty years. Farm

¹ Thanks to Massimo Angelini, Oriana Porfiri, Piergiacomo Bianchi and Romana Bravi for their useful remarks that gave me the inspiration to write the article and analyse the directive and which, where particularly pertinent, are reported in the footnotes as a way

diversification has been replaced by crop uniformity aided by factors of production efficiency such as economy of scale and standardisation of the production. Public policies, market dynamics, wholesale and retail distributors and the requirements of the food processing and manufacturing industry have conditioned agriculture, shifting it towards specialisation and monoculture (Tansey and Worsley, 1995). The tools of legislation for monitoring seed quality and varietal registration, devised for supporting the increase in productivity in post-war years, have since become a constraint to the conservation and development of varieties which are suited to local farming methods and to the establishment of small seed companies (Visser, 2002). Many proposals have been put forward to tackle this problem and to increase diversity in farming methods and conservation varieties are perhaps the most advanced solution in institutional and legislative terms² and so merit special attention.

Directive 98/95/CE of 14 December 1998 introduced ‘conservation variety’ a new type of agricultural variety that could be marketed within Europe. But why did the European Union (EU) broaden the range of varieties that could be registered in the common Catalogue of varieties (from now on called ‘Catalogue’) and thus market them? Why is the term ‘conservation’ now appearing in regulations on seed? The 17th preamble of the directive gives a partial reply.

‘Whereas it is essential to ensure that plant genetic resources are conserved; whereas 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’.

To all intents, opening the Catalogue to conservation varieties and thus to marketing them is seen as a means of reducing their genetic erosion. The priority now is to conserve a varietal heritage that is disappearing from the fields, and for the first time a conservation initiative becomes part of seed regulations. Up to now, European legislation had only viewed conservation of agricultural genetic resources from a scientific standpoint, essentially supporting scientific bodies, networking amongst researchers and ex-situ seed-banks³. ‘Officially’ the seed sector was not affected by this problem and in this sense the directive is an important step forward because it implicitly acknowledges that seed regulations since the 1960s have contributed to the genetic erosion of agricultural diversity

of highlighting the lively debate that took place in Italy on the subject, reflecting the interest this measure has aroused.

² For an analysis of the various proposals see Kloppenburg 2008.

³ See on this CE regulation Nr. 870/2004 that repealed the earlier 1467/94.

and so must be amended somehow⁴.

Since 1998, however, the road followed by conservation varieties has been long and tortuous and the directive still lacks application by Member States. Indeed, despite the 2001 European Commission Action Plan for biodiversity in agriculture⁵, again stressing how on-farm conservation also depended on seed legislation that allowed genetically diversified material to be marketed, as of June 2008 no progress had been made at EU level to draw up the rules of implementation for conservation varieties in directive 98/95⁶. In any case, there was still not one single conservation variety being legally marketed in Europe in February 2009. It is to be noted that directive 62/2008 of 20 June 2008 only set the guidelines for agricultural species; the texts on vegetables, plant propagation species and fodder plant mixtures are still being negotiated at the Permanent Seed Committee in Brussels.

In the ten years spent in hatching the new directive no fewer than 14 text revisions were discussed before it was passed by the Permanent Seed Committee, which shows the difficulty that parties with such divergent interests have in reaching an agreement. On the one hand, some saw a danger that it would 'undermine the main commercial system of introducing new varieties onto the market' (FCEC, 2008); while others sought to open marketing possibilities to varieties that were then 'illegal' but in any case of interest to non-industrial models of agriculture such as organic farming or bio-dynamics. The main obstacle was deciding whether or not to maintain, and if so to what extent, the three fundamental principles of Directive 98/95:

- 1 the link between a variety and its area of origin;
- 2 the danger of erosion actually exists;
- 3 appropriate quantity restrictions.

⁴ A similar conclusion can be reached by reading the motivations for the European Union to launch the process of evaluation of seed legislation. Here, too, the new objectives to be pursued in seed policies include conservation of agricultural diversity (http://ec.europa.eu/food/plant/propagation/evaluation/index_en.htm).

⁵ The EU Commission's notification to the Council and Parliament of 27 March 2001 [COM(2001) 162 def.], contained the following chapter specifically on seed legislation. '79. The conservation and improvement of in situ/on farm plant genetic resources also depends on the effective possibility of sustainable uses and hence on legislation which makes it possible to market diversified genetic materials. 80. Directive 98/95/EC of 14 December 1998 created the legal framework needed to open up, in the future, the possibility of allowing the marketing of varieties arising from in situ conservation and

Indeed, clarifying what was actually meant by the short text of directive 98/95 on conservation varieties (Art. 6 (17) and Art. 8 (37)) was not easy, and depending on interpretation either made the norm useless because of its strict constraints or made the concept of conservation variety too generous thus running the risk of creating a system parallel to the standard one which would enable users to circumvent the rules, checks and red-tape of the classic seed system. The text passed in 2008, therefore, is to be seen as a compromise between these two extremes, and its effectiveness will only be able to be seen in the coming years by verifying if varieties not permitted today are on the market⁷ and if the rules established for implementing it are effective and efficient in the various EU countries.

Directive 62/2008

The preambles are very clear in conveying the frame of directive 62/2008:

- a The objective is the conservation of plant genetic resources (PGR) and the marketing of their seed;
- b To conserve these varieties, it is fundamental that the seed be reproduced in the place of diversification/origin of the variety;
- c Quantity restrictions and an adequate system of traceability must be established to prevent this simplification being abused to get round seed regulations and market varieties not to be conserved;
- d Member States may establish derogations on distinctness, uniformity and stability (DUS);
- e Three years after it comes into force its effectiveness will be subject to evaluation.

not included on the official lists of seeds complying with the DUS criteria. Also, this directive contributes to the in situ conservation and the sustainable use of plant genetic resources, through growing and marketing of landraces and varieties, which are naturally adapted to the local and regional conditions and which are threatened by genetic erosion. [...] 83. The implementing regulation needed to exploit this new possibility has not yet been established.

⁶ The specification is needed because directive 98/95 is also about entering transgenic varieties in the register.

⁷ The various points of view on the concept of conservation varieties are clearly reported in the final report of the Food Chain Evaluation Consortium published in 2008 and available at http://ec.europa.eu/food/plant/propagation/evaluation/index_en.htm.

Note first and foremost that the objective of conservation is achieved by the tool of derogation from the present-day seed system on the one hand to allow these varieties to be registered in the Catalogue⁸, and on the other to establish a minimum of procedures for the sale of the seeds. The intention, therefore, is for these varieties to fall into the category of seed marketability⁹ creating an area of legitimacy for varieties that could only be exchanged between farmers. The aim, therefore is to create a specific market with rules that are more appropriate to the needs of the users of these varieties. 'FCEC 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' (FCEC, 2008).

Defining the conservation varieties, however, is not simple; the starting point must necessarily be the two directives. Directive 98/95 (Art. 6 (17) and Art. 8 (37)) of 1998 states that certain conditions must be present for two specific types of plant, thus defined:

- 1 Landraces and varieties which have been traditionally grown in particular localities and regions and threatened by genetic erosion (for vegetables); seed of landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion (for agricultural plants);
- 2 Varieties with no intrinsic value for commercial crop production but developed for growing under particular conditions.

In the first case, these varieties are defined as 'conservation varieties', while in the second, 'varieties with no commercial value' are the so-called amateur varieties¹⁰. The Article also clarifies the central points of this new regulation, namely that they must have a special connection with the place where they are

⁸ 'Setting up a 'register', 'repertoire' or 'catalogue' is the first aspect to highlight. Without it, without knowing what is still extant, where it is and what its properties are, no safeguarding measures are of any use. This is the first thing of interest to us, then we can talk of enhancement, commercial use, types, etc., which interweave with acts aimed safeguarding, sometimes getting in the way' (O. Porfiri, pers.com.).

⁹ Thus defined by Art. 3 (2) of Directive 98/95: 'marketing shall mean 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'.

¹⁰ Of all Member States, only France has accepted the concept of amateur varieties, by creating an *ad hoc* catalogue for them by Ministerial Decree of 26/12/97 which is, however, limited to non-professional users (*variétés anciennes pour jardiniers amateurs*).

Box 1 - Definitions of landraces

1998 (Zeven): ecological / agronomical definition

- *As a landrace has a complex and indefinable nature an all-embracing definition cannot be given. However, I suggest the following: an autochthonous landrace is a variety with a high capacity to tolerate biotic and abiotic stress, resulting in high yield stability and an intermediate yield level under a low input agricultural system.*

2005 (Villa *et al.*): historical and cultural aspects

- *A landrace is a dynamic population(s) of a cultivated plant that has historical origin, distinct identity and lacks formal crop improvement, as well as often being genetically diverse, locally adapted and associated with traditional farming systems.*

2005 (Mutersbaugh): economical dimension

- *Today, these varieties have acquired also an economical dimension, with the increasing market of 'quality-certified' products.*

2005 (Negri): ethical value

- *One has to consider that these varieties are invested of an ethical value for a public considering the threatened biodiversity and the interest towards local development.*

There is also an identity-based meaning, different from those listed, which consists in the process of self recognition and self definition which begins in the contact between a person who lives in a certain place and is nourished by its culture, and a variety that has been conserved, developed and handed down in that place. It is the same when one rediscovers or tastes the Quarantina, or the Teresa apple again. You are moved, your mind is flooded with memories and you rediscover a part of yourself. Rather like photographs of the old folk or children's toys (M. Angelini, pers. comm.)

grown, they must be at risk of erosion and they must be subjected to adequate quantity restrictions.

Ten years after directive 98/95, the 2008 directive confirms the definition of agricultural plants by which conservation varieties are 'landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion'. But why do the varieties of agricultural plants have to be 'naturally adapted' instead of 'traditionally grown'? This is not explained but it is an interesting semantic shift. Agricultural plants are only considered the fruit of

Table 1 - Panorama of how the term 'landraces' appears in the national texts of directive 62/2008 (Source: Chable, Lammerts van Bueren 2009)

NATION	TRANSLATION OF 'LANDRACES'	MEANING IN ENGLISH	POINT OF VIEW EXPRESSED
France	Races primitives	Primitive, original races	Historical, social or biological
Germany	Landsorten	Landraces	
Italy	Ecotipi	ecotypes	Ecological
Spain	Variedades	varieties	Biological
Romania	Soiurilor locale	Local variety	Geographical
Portugal	Variedades autoctones	Autochthonous varieties	Geographical and social
Hungary	Honos fajok	home variety	Sociological

a process of natural adaptation as though the work of man, and farmers in particular, were merely marginal. This change is not unimportant considering the scientific debate surrounding the definition of 'landraces', distinguishing it from 'ecotype' (Andersen, 2008) and the text of the Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) which expressly recognises the role of past, present and future generations of farmers in creating and maintaining agricultural diversity. It could be said that the directive has a very limited definition of 'landraces' and does not consider that scientific literature gives it a multi-dimensional aspect (see box 1). This stance on the part of the directive can cause confusion as can be seen in the translations of the English text of the directive into other EU languages. 'Landraces' for instance appears in Italian as *ecotipi* [ecotypes] while *varietà locali* [local varieties] would have been more appropriate since there is consensus in the Italian scientific community as this being the current translation (for the definition in Italian see Lorenzetti and Falcinelli, 2008; Menci, 2007).

In defining conservation varieties, let us now turn to another two aspects which are also hard to identify, namely genetic erosion and the origin of the variety. Note that landraces and varieties cannot be identified as 'conservation varieties' without these properties.

As regards erosion, it is very difficult to define the levels in plant genetic resources. Some Regions of Italy are conducting interesting work in this area to justify the list of the varieties at risk which qualify for public funding in the Rural Development Plan (Porfiri *et al.*, 2009). It is, however, difficult to paint the

complete picture of a specific genetic resource because it is not easy to express its state in numerical terms (see Bertacchini, 2009). First and foremost a census or a list of the local varieties still grown by farmers would be needed in order to estimate the risk of inter-varietal erosion. Secondly, the variability of each local variety would have to be known - these are often fairly heterogeneous populations – to estimate the risk of intra-varietal erosion. Obviously, the absence of a preparatory cognitive survey makes it very difficult to indicate the risk of genetic erosion of a specific resource (Lorenzetti and Negri, 2009). Furthermore, even assuming being able to quantify the risk of erosion there is still a marked contradiction. When the seed of a conservation variety is sold in conformity with all the rules, can it still be considered at risk of genetic erosion? The answer most in line with the objective of the directive is that once it is marketed the variety becomes no longer at risk although it is still a ‘conservation variety’, even though the directive says the contrary since it has lost its qualifying property of being at risk of genetic erosion¹¹.

Identifying the area of origin of the variety is the other pre-requisite for registering it¹². As stated in Art 8., the region or regions where it has been grown for some time and where it has naturally adapted to (region of origin) must be identified when registering it in the Catalogue. This identification is crucial for regulating the production and marketing of seed. Indeed the directive prescribes that the regions of production of the seed must be its region of origin provided there are no environmental problems. The directive also limits the marketing of

¹¹ ‘The concept of genetic erosion is what gives meaning to the EU proposal. It must be present in order to apply the derogation provided for marketing the conservation varieties. The authorities for the conservation of bio-diversity or the appropriate recognised organisations still have to rule on this. I think that once a conservation variety has been acknowledged as such, it acquires the right to derogation and may be marketed. The fact that a conservation variety is not lost thanks also to its being marketed is precisely the objective of the Directive. In my view, the ambiguity referred to is only a question of school of thought because if the variety were no longer at risk by being marketed it should conform to the general requisites which, we know, is impossible and therefore, the risk of loss would still be present’ (P. Bianchi, pers. com.).

¹² As Lorenzetti and Negri wrote (2009), the area of origin must be taken as ‘the region in which the variety was developed and/or grown for a sufficiently lengthy period of time to leave some trace in documents or to be present in people’s memory’.

¹³ ‘I am personally in favour of this idea otherwise local varieties would no longer be local!! And if we want them to continue to be connected to the territory and to the country-

seed to the place of origin alone (Arts. 11 and 13)¹³. An additional point closely linked to the issue of variety origin is that more than one denomination of a single variety has been accepted provided the denomination is traditionally well-known (Art. 7). This is an important innovation because it creates a derogation from the principle of seed regulations which requires there to be a univocal link between denomination and conservation variety. In conservation varieties, the historical is given priority over the purely commercial. It is, however, evident that in the absence of socio-anthropological research in the territories where the varieties are still grown and a parallel historic investigation on the sources, it makes little sense to talk about origin¹⁴. The preliminary work carried out in Italy by the Regions goes in this very direction. After defining which varieties can be included in this new container, let us now analyse the norms and procedures that have to be followed in order for registration in the Catalogue to take place.

The seeds of conservation varieties must be reproduced in accordance with well-defined practices of variety maintenance (conservative selection) and the seed must have sufficient varietal purity¹⁵. Distinctness and stability must be in conformity with the properties set forth in the guidelines of the Community Plant Variety Office (CPVO) or of the International Union for the Protection of New Varieties of Plants (UPOV), and the variety must be 90% uniform¹⁶. By way of derogation from the requirements, no official testing is necessary for admission to the Catalogue, it being sufficient:

- a The description and denomination of the variety;
- b The results of non-official tests;

people who have kept them up and continue doing so, and if we want any benefits that might accrue to come back to the local communities, this 'limitation' is the only measure that will work otherwise we will merely have accomplished a commercial exercise' (O. Porfiri, pers. com.)

¹⁴ 'Origin, origin, origin. Provenances, origins identifying regions, types, traditions, temporal processes, a non-naïve usage of oral sources and of fragments of material culture etc are categories which typically belong to history and social anthropology and call for the use of tools and methodologies of analysis and deconstruction of the sources which - if they're lucky - people trained in historiography and anthropological reconstruction have learned to use. Will someone please explain to me how you can still talk insistently about 'historically recognised' and restrict your reference points to agronomists because seemingly there is no other professional figure in this world? Just as up to now agronomists and the like have been entrusted with preparing the lists of traditional produce, will they also do likewise for the traditionally grown or naturally adapted conservation varieties?' (M. Angelini, pers. com.).

- c Know-how acquired through practical experience;
- d Other information including that from recognised organisms.

Varieties previously registered in the common Catalogue of varieties but which have been absent from it for less than 2 years, or which are protected by Plant Breeders Rights (PBRs) cannot be considered conservation varieties (Art. 6). In this way, legislation has sought to reduce the risk of an indiscriminate passage of varieties from the common Catalogue to that of conservation as a strategy to derogate from certain requisites of seed rules.

After dealing with the definitions and the ways of registration in the catalogue, the directive moves on to defining proper quantity limits, the upper limit for marketing. The maximum quantity of seed of each conservation varieties marketed may not exceed either 0.5% of the seed of the same species used in the Member State in the agricultural year or the quantity needed to sow 100 hectares whichever be the greater (Art. 14)¹⁷. Furthermore, there is a total limit by species, namely 10% of the total of the same species used. Producers must give a yearly notification of the place of production and the quantity of seed that they will produce in order that Member States can verify whether the quantity restrictions will be breached (Art. 15). The seed batches must be properly packed and labelled (Arts. 17 and 18) and the whole seed production must be subjected to random inspection to verify the identity and varietal purity (Art. 19).

To ascertain whether the percentages given in the directive are realistic, we verified the impact of the quantity restrictions in Italy for the main agricultural species.

First and foremost the method of calculating the quantity that each Member State uses annually must be defined, the value that the directive takes as a reference for calculating the restrictions. For our purposes we chose the (Italian national statistics office) ISTAT data of the seed quantity distributed in 2007. The figure

¹⁵ 'The expression sufficient varietal purity for seed is to be understood as by comparison to the uniformity of that variety and is not an independent value' (P. Bianchi, comment). 'This assumes that there are specific rules for production and that there is 'someone' (region, local government) who supervises' (O. Porfiri, pers.com.).

¹⁶ 'As regards distinctness and stability, UPOV and CPVO are only for the list of properties of the technical questionnaire - a limited number not the whole list. Purity has to be 90% when you count the off-types but for most cases the CPVO and UPOV technical protocols involve resorting to relative uniformity, namely as compared to varieties of the same typology' (P. Bianchi, pers.com.).

¹⁷ For certain species such as *Triticum*, the percentage is lowered to 0.3% per variety.

Table 2 - Seed distributed in Italy in 2007 with the percentage of conservation varieties (CV) potentially accepted for marketing (Source: ISTAT data processed by the author)

SPECIES (sowing density)	SEED DISTRIBUTED(q)	10% (total CV/species in q.)	HECTARES	0.3% (total per CV in q.)	HECTARES
Durum wheat (200 kg/ha)	1,904,265	190,426	95,213	5,712	2,865
Soft wheat (200 kg/ha)	1,122,089	112,208	56,104	3,366	1,683
Maize (20 kg/ha)	238,528	23,852	119260	715	3575
Rice (180 kg/ha)	374,067	37,406	20781	1,122	623
Oats (140 kg/ha)	35,985	3,598	2570	108	77.14
Potato (1500 kg/ha)	421,661	42,166	2811	1,265	84.33

for durum wheat was 1,904,265 quintals, however, this figure is much higher if the calculation is based on the hectares cultivated in 2007 (1,439,231 again according to ISTAT) by an average of 2 quintals of seed per hectare, giving a total of some 2,800,000 quintals. The figure is different still if the statistics of certified seed in Italy for 2007 are considered - just over 3 million quintals. The choice of the data source is therefore very important in ascertaining the exact amount of seed actually used. In general, if it is available nationwide, the most reliable data can be had from the area of land cultivated since it includes the use of certified seed, re-used seed and non-certified seed.

Having ascertained the quantity used, we proceeded to calculate the various percentages of conservation varieties for the species concerned as can be seen in the table 2. The maximum quantity of durum wheat seed was some 190 thousand quintals which, if sowed entirely would cultivate more than 95 thousand hectares of conservation variety. No more than 5,712 quintals of seed of each conservation variety of durum wheat could be marketed, sufficient to sow almost 3,000 hectares for a total upper limit in Italy of 33 conservation varieties of durum wheat.

As can be seen from the table, the quantity limits for the species considered are no obstacle in the development of the market of the seed of the conservation variety, in Italy at least. On the other hand, the limits are perhaps disproportionate if as the regulation states, production of every variety of seed is to be limited to its area of origin.

Conservation varieties: the example of Italy

Italy is the only country in Europe to have implemented directive 98/95 before Directive 62/2008 by *ad hoc* national-level regulations. Implementation of EU

legislation on conservation varieties in Italy began in 2007 with Law Nr. 46, Article 2 (a) of which established the national catalogue and delegated the obligation of drafting the decree of implementation to the Ministry of Agriculture, Food and Forestry (MiPAAF). This decree was signed by the Minister and published in the Official Gazette Nr. 122. The purpose was to attempt to harmonise the situation at national level, compromising with the Regions that had already passed their own laws protecting agricultural biodiversity - local government had thought that the problem of how to market the varieties entered in regional registers but barred from being sold by seed regulations would be solved by introducing conservation varieties. This is why the definition of conservation variety draws heavily from the wording of regional laws and is dissimilar to that of European norms¹⁸. For Italian legislation, varieties, populations, landraces, clones and cultivars of agricultural interest worthy of conservation are for species of plant that are:

- a Autochthonous and non-autochthonous which have never been registered in the Catalogue provided they have been integrated into local agricultural eco-systems for at least fifty years;
- b No longer registered in the Catalogue but still at risk of genetic erosion;
- c No longer grown in Italy but conserved in botanical gardens, experimental institutes, public and private seed banks, universities or research centres of other regions or countries for which there is interest of an economic, scientific, cultural, or landscape nature that would favour its reintroduction.

By contrast with Community thought, the risk of genetic erosion and the identification of the area of origin are no longer obligatory properties for conservation varieties. It is sufficient for the varieties included in point a) to be autochthonous while only those entered in the Register (b) must be at risk of genetic erosion. Hence, varieties which are properly described as landraces (point a) do not have to prove being at risk of erosion to be registered in the Catalogue while varieties no longer in the common Catalogue (point b) still do because there is no special link with an area of origin. Furthermore, differently from 2008 directive, the Italian version is applicable to all species of agricultural interest - vegetables, fodder, plant propagation species and agricultural species.

Let us analyse this text in closer detail in order to highlight the compatibility with directive 62/2008 and the reasoning behind it.

Art. 1 expressly mentions Article 9 of the ITPGRFA which specifies that 'the benefits deriving from the reproduction, diffusion and use (of conservation

¹⁸ For the story of how the approval of this decree was arrived at see L. Paoloni (2005) and the site www.semirurali.net.

varieties), inalienably and indefeasibly belong to the local communities who ensured their conservation'. Art. 2 establishes the Section for conservation varieties in the Catalogue specifying that registration of each variety is to be notified to the Ministry through the appropriate Region ad/or Province who must give their approval. This means that the system is highly decentralised and delegates evaluation of the prescriptions required for registration to local bodies in accordance with the procedure by which Regions establish regional Repertoires based on their specific agrobiodiversity laws and then notify the Ministry of the varieties to be registered in the catalogue as conservation varieties¹⁹. The aim is to achieve integration among the various levels of regulation in a decentralised system (see Bertacchini, 2009). Registration is free of charge 'save the costs for ascertaining the uniqueness of the variety'. This issue of uniqueness raises another problem. A given variety is often found in different geographical areas with different names and so it should be registered in the Section just once. This, though, would determine a curtailment of cultural diversity (see the multi-dimensional meaning of *landraces* discussed above) and would also run counter to the directive prescriptions which allows for a single variety to have more than one name²⁰.

As to derogation from the prescriptions of seed legislation, the decree provides greater freedom than directive 62/2008. Indeed the varieties have to be identifiable by means of a minimum number of characters without specifying how many can derogate from the prescriptions in Distinctness, Uniformity and Stability. Art 3 also highlights the major difference *vis-à-vis* the EU text. Here, farmers are explicitly given the right to sell conservation varieties (Art 3 (2)). It seems as though the Italian legislator took pains to allow farmers to do this rather than limit sales to the subjects provided for in the seed regulations²¹.

¹⁹ 'We should favour a two-fold procedure but do things so that what has been registered in the regional repertoires so far is channelled into the national repertoire - it cannot happen differently. The Regions will obviously have to toe the same line in this registration procedure. In actual fact, my experience tells me that in the little that has been done here are no differences in procedures among the Regions because by and large the regional laws are all the same'. (O. Porfiri, pers.com.)

²⁰ 'A local variety does not have to be registered 'one way' only; indeed directive 62/2008 also allows for more than one name. I fail to see the problem in registering a local variety that's called 'monachello' bean in the Marche and 'prete e monaca' bean in Abruzzo. They are all the same type of bean. Remember that regional repertoires register local varieties as well as the various accessions discovered for each local variety' (O. Porfiri, com. pers.).

²¹ Provided for in Italy by Law 1096/1971 and amendments.

On the other hand, the prescriptions on quantity limitations are more restrictive. Clause 2 limits the total quantity that each farmer can transfer as seed as ‘the amount necessary to establish a crop of 1,000 square metres for vegetables and 1 hectare for the other agricultural species’. For cereals this means that the farmer can sell no more than 200-300 kg of cereal seed per year. There being no explicit mention of the single varieties in the text (which is instead given in directive 62/2008 indicating the total by species and single variety) it is clear that these figures are to be taken as the totals for each person selling and not, therefore, for each single conservation variety produced²². In this case, a marked discrepancy arises with the general objective of European legislation on conservation varieties. Indeed, the whole concept of conservation variations hinges on creating a market for them with its own set of rules. But how can one even think of seed marketing with the quantity limit set by the Italian decree? Who would ever find it worthwhile to invest in such a limited market? The eventuality of the cereal sector being interested is indeed remote.

The text of the Italian decree qualifies the local arena (the region of origin in the text of the directive) as ‘the traditional area of cultivation of the variety [...] where the variety developed its properties’. This is the only arena in which selling is allowed, but there are no restriction on growing it outside its area of origin except the use of the same name and the use of public funding (see e.g. geographic indications, Rural Development Plan interventions). This is a highly significant innovation because it introduces a criterion of protection of the local name (but even more the right to use the local name) which comes from outside the system of the geographic indications, which up to now have been the only ones accepted.

In conclusion, the Italian regulations are also the outcome of compromise between those who see conservation varieties as a way to legitimise many kinds of variety which are not presently marketable and therefore lean towards a slim, decentralised system and those who see them as a dangerous derogation from the seed system and seek to curtail its potential as much as possible - the strict quantity limitations are the result of the affirmation of the latter.

²² Note that the draft decree prepared by the Association *Rete Semi Rurali* and submitted to MiPAAF for approval linked the quantity to the ‘needs for a family-scale farm’ while extending the quantity limits. This idea had the advantage of not beginning right away with very low limits, leaving the definition to possible future instances of dispute to be judged on a case-by-case basis, each in accordance with its specificities.

Table 3 - Comparison between directive 62/2008 and the Italian Decree

	DIRECTIVE 62/2008	ITALIAN DECREE
Definition of conservation varieties	Landraces and varieties that have adapted naturally to local and regional conditions and are threatened by genetic erosion.	Varieties, populations landraces of plant species: Autochthonous and non-autochthonous, never entered in the National Register of the Varieties of Agricultural and Vegetable Species, provided integrated for at least fifty years in local agro-eco-systems, no longer in the Register provided they are at risk of genetic erosion; No longer grown in Italy but conserved in botanic gardens experimental institutes, public and private germ-plasma banks, universities and research centres in other regions or countries, for which there is an economic, scientific, cultural or landscape interest in its re-introduction.
Quantity limitations	Each CV: max 0.5% quantity seed same species. Total quantity per species: max 10% seed of the same species used in the country, or in both cases if in excess of the quantity needed to sow 100 ha.	Each farmer: <ul style="list-style-type: none"> • max seed needed for 1,000 sq mt vegetables • max seed needed for 1 ha agricultural species.
Geographical limitations	CV seed can only be produced and marketed in the regions of origin of the variety.	CV seed can be marketed locally by those who produce it in the zone of origin. Traditionally CVs are grown locally or in the province in which production of the registered variety takes place.

Conservation varieties: synergies with the Treaty

The directive is irrevocably connected to Article 6 of the Treaty and the sustainable use of plant genetic resources by the concept of conservation variety. Indeed, every EU document makes it clear that the directive is the legislator's response to the seed sector as a move to stem the loss of agricultural diversity. In point of fact, directive 62/2008 states that with regard to the seed sector, in order to give due weight to the aims of the Treaty, certain specific conditions have to be established in the rules to govern the marketing of seed.

If it is correctly implemented by Member States, the regulations on conservation varieties can be a valid tool towards changing the rules that discipline the release of varieties and the distribution of seed as hoped for in Art 6 (g) of the Treaty. The references to the zones of origin of the varieties and the tradition of cultivation can be interpreted as an incentive to re-localise seed production, which takes account of the varieties' adaptation to different surroundings and agricultural models and thus encourages the use of local and/or locally adapted

varieties (Art.6 (e)). By accepting for marketing varieties presently barred makes this norm also seem a means for increasing the range of varieties available to farmers (Art.6 (d)).

Furthermore, directive 62/2008 opens a whole new interesting area in which civil society can become involved in the whole process of identification of conservation varieties by indicating that Member States will be obliged to notify their appropriate organisations at national level on plant genetic resources (Arts.5, 8, 11 and 21). The participation of farmers in the decision-making process of agricultural biodiversity is one of the aims of the Treaty and is a precondition for implementing the programmes of participatory plant breeding, which is considered one of the means for putting the sustainable use of plant genetic resources into practice.

Conclusions

The regulations described are in danger of getting bogged down if they are interpreted and applied too narrowly. They should, instead, be read as the beginning of a new pathway that links seed production at local level and channels the seed towards different agricultural models, giving farmers a new role to play. In general, directive 62/2008 has to be read as a first timid step towards opening the seed market up to certain varieties as partial derogation from the prescriptions of distinctness, uniformity and stability (DUS), and also as procedures for marketing them.

It is to be stressed, however, that conservation varieties will be limited to a specific kind of variety for which a link with a certain territory will be historically demonstrable. This, therefore, is not a category for lumping together all the varieties which at the moment cannot be marketed, and for which it will be necessary to explore different legislative openings. In particular we refer to the following categories:

- 1 The varieties produced by participatory plant breeding improvement and are not in conformity with DUS prescriptions;
- 2 The old varieties no longer registered in the Catalogue (there factors that can make registering these varieties problematical: excessive registration costs, difficulty in proving the Value of Cultivation and use, only limited marginal areas interested in growing them) and which do not have a precise geographical area of origin;
- 3 Local varieties used as genetic resources in reintroduction programmes, to cultivation in different areas from their area of origin;

- 4 Variety - Populations that have no historical link with a given territory and which cannot be registered in the official catalogue having no correspondence with the DUS criteria.

There is another consideration to be made; while the legislator intended to confer juridical legitimacy to these varieties by integrating them into the seed market, it does not follow that by exchanging them in a way that is not in conformity with the new directive makes the exchange illegitimate. A reasonable assumption is that by lacking commercial exploitation the act of exchange cannot be considered marketing²³.

This directive could undoubtedly ease relations between farmers and agricultural red-tape even if the use of just a few varieties, presently not marketable were to become 'legalised'. This would solve a lot of problems of red tape that farmers who cultivate them encounter today when applying for public funding or organic certification.

In conclusion, the Directive is at great risk of being unapplied despite the over ten years needed for it to see the light of day. The problem is not the quantity or geography limitations but in the too few derogations from the certification procedure and the excessive red tape throughout the whole system. There seems to be a drive to apply the rules of classic seed marketing to the much more variegated market of conservation varieties.

This concern is also apparent in the final report of the evaluation of European seed legislation prepared by the Food Chain Evaluation Consortium (FCEC): 'FCEC concerns is that the new Directive may well be restrictive if implemented in a wrong way and FCEC is not certain that Member States will understand how to implement it with flexibility, freedom and adaptability that the Commission intended' (FCEC, 2008).

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²³ 'When seed is not exchanged for profit or gain (for example if the aim of the exchange is the conservation of the germplasm, or if the seeds exchanged are used to produce food for oneself) the act is not subject to the measures of the directive. In all other cases the seed regulations must be applied' (P. Bianchi, pers. com.)

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