The Sustainable Use of Agrobiodiversity in Italy

Report on case studies on article 6 of the International Treaty on Plant Genetic Resources for Food and Agriculture

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Istituto Agronomico per l’Oltremare
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Introduction

One of the major key components of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is the sustainable use of these resources as specified in Art. 6. This article is different from other Treaty components. It applies to all the resources and it is not limited to those explicitly listed in the Annex I. All the Contracting Parties (CP) must implement it, without the limits imposed by national laws, as it is stated in the case of article 9 (Farmers’ Rights) or in the “Conservation”, where the article 5.1 says explicitly “subject to national legislation”.

Article 6 rules over key areas described in the “Global Plan of Action” (GPA) for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture (PGFRA) adopted during the International Technical Conference on Plant Genetic Resources in Leipzig 1996.

In particular, article 6.1 mandates the implementation steps followed by the accepting parties:

“The Contracting Parties shall develop and maintain appropriate policy and legal measures that promote sustainable use of plant genetic resources for food and agriculture”.

The remaining provisions expressed by the article point out few of the possible measures each countries can undertake in order to promote the sustainable use of the PGFRA. Nevertheless the measures considered are only for illustrative purpose and shall not limit the countries to take other measures for the implementation of this article, following the requirements detailed in the broader GPA. The framework described in the Treaty comprises the following actions:

(a) Pursuing fair agricultural policies that promote, as appropriate, the development and maintenance of diverse farming systems that enhance the sustainable use of agricultural biological diversity and other natural resources;

(b) Strengthening research which enhances and conserves biological diversity by maximizing intra- and inter-specific variation for the benefit of farmers, especially those who generate and use their own varieties and apply ecological principles in maintaining soil fertility and in combating diseases, weeds and pests;

(c) Promoting, as appropriate, plant breeding efforts which, with the participation of farmers, particularly in developing countries, strengthen the capacity to develop varieties particularly adapted to social, economic and ecological conditions, including in marginal areas;

(d) Broadening the genetic base of crops and increasing the range of genetic diversity available to farmers;

(e) Promoting, as appropriate, the expanded use of local and locally adapted crops, varieties and underutilized species;

(f) Supporting, as appropriate, the wider use of diversity of varieties and species in on-farm management, conservation and sustainable use of crops and creating strong links to plant breeding and agricultural development in order to reduce crop vulnerability and genetic erosion, and promote increased world food production compatible with sustainable development; and

(g) Reviewing, and, as appropriate, adjusting breeding strategies and regulations concerning variety release and seed distribution.

The importance of Article 6 within the Treaty has been stressed in 2007 during the second meeting of the Governing Body (GB) in Rome. After the review of the documents brought forward for discussion, a statement has been made: “article 6 should continue to be a component of its
Programme Work and a standing item on its agenda”. In particular the point 72 of the Report of the Second Session of the GB points out the importance of having in the third meeting a general picture of the implementation of this article and to this purpose: “[...] invited submissions from Contracting Parties, other governments and relevant institutions and organizations”.

In this framework the Istituto Agronomico dell’Oltremare (IAO - www.iao.florence.it), technical branch of the Italian Ministry of Foreign Affairs, has started a study of the Italian situation, making use of the best and most interesting cases in sustainable use of the PGRFA. This report is the result of the research collecting the several cases.

**Between sustainable use and Farmers’ Rights**

The case studies presented in the Report show different way to implement the sustainable use of the PGRFA. Throughout the analysis, we have seen how little is the boundary separating article 6 from article 9 of the Treaty and the whole idea of the sustainable use from that of Farmers’ rights (FRs). For instance, many actions taken within article 6 have effects similar to the ones defined in the article 9.

This fact is not irrelevant. FRs have usually been a hot topic during negotiations both at national level and international, while sustainable use has not these limitations, so it is supposed to be easier to be implemented by the CP.

In order to better understand the possible connections between these two articles we tried to analyse them within the Italian case studies.

Article 9.3 is one of the most controversial, where the farmers’ rights to exchange use and sell the propagation material are subject to national legislation. This article has close links with the articles 6.2 (a) and (g) supporting agricultural systems maintaining genetic resources in a sustainable way and promoting laws in favour of plant breeding.

In our analysis, the possibility of promoting diversified agricultural systems (art 6.2a) is bound also to a seeds system that is different from that currently in place. In particular, farmers’ role should be broadened and the exchange, reuse and sell of the seed material in the farm should be permitted. Moreover, the seeds exchange, reuse and sell from the farmers can play an important role in the experimentation of new varieties outside from the commercial seed system. In doing so, this is fully consistent with the aim of reviewing and adapting the norms on the variety release and breeding strategies.

Article 9.2(a) concerning the protection and sharing of traditional knowledge can be related to article 6.2 (e) promoting the use of local varieties and underutilised species. In the case study presented by Enrico Bertacchini in the next pages, the regional Italian experiences on the preservation of local species expressly make use of the recovery and preservation of traditional knowledge in addition to their protection. As pointed out by Regine Andersen (2008) the major problem in the most industrialized countries lies not in the “misappropriation” of traditional knowledge but in its recovery and valorisation.

Article 9.2 (b) concerning benefit sharing measures is quite broad and its potential implementation depends on the definition of benefit sharing. If the main driving logic is the pursuit of economic benefits the risk becomes to introduce a subsidising mechanism to local varieties conservation, as it emerged in the European experience. At the contrary, introducing as non-economic benefit, the sustainable use of agricultural biodiversity - and all the
measures to be adopted to implement it becomes in itself a mean of benefit sharing. In particular, the promotion of Participatory Plant Breeding (PPB) strategies to help farmers to fulfil their needs, facilitating them in accessing the genetic resources and broadening the range of available species all they are actions aiming to bring compensation in farmers' favour. For this reason article 9.2 (b) can be considered close to articles 6,2 (b) (d) concerned about research promotion, Participatory Plant Breeding and farmers' access to the genetic resources.

The report shows another important aspect during the development of instruments geared toward a sustainable use of the PGRFA: the relationships with the market and the strategies for the valorisation of the produce. Indeed, all the illustrated cases link conservation, use and valorization with a particular attention to the linkages between varieties and culture and to the creation of new kind of market more suitable to this specific produce. The reference in this case is directly to the Global Plan of Action and to his section “14. Developing new markets for local varieties and diversity rich products”, within the priority activity “Utilization of Plant Genetic Resources” (see next box).

This action is not explicitly listed in the article 6 of the Treaty, but is the cornerstone to the sustainable use of the PGRFA. In fact, besides acknowledging the market potential for local varieties or agricultural biodiversity products, it points out the important role of the public opinion, including schools, about how they perceive the agricultural biodiversity.

In this spirit the Report has to be read, without separation between the different Treaty components (Conservation, Sustainable use, Farmers' rights, Multilateral access system and Benefit sharing) and maintaining a general understanding of its aims during the implementation. In fact a proper implementation of the Treaty requires a complex and integrated system involving several actors and requiring a balanced workload amongst all the components.

Italy and the Treaty

In Italy, the implementation of the Treaty is demanded to four different institutions: Ministry of Foreign Affairs, Ministry of Agricultural, Food and Forest Policies (MiPAAF), Environment Ministry and Regional authorities. The latter authorities, according to the law 101 (2004), have the duty to implement the Treaty articles 5, 6, 9, 11 and 12. The role of the MiPAAF is to report at an international level about the Treaty implementation status and to monitor the regional offices actions.

During the three years 2004-2006, the Government has provided the MiPAAF with 1.172 MiEur to conduct national actions across all over the country giving priority to ex situ conservation. The project “Risorse Genetiche Vegetali/FAO” (RGV/FAO) has received funds and this has produced works in the ex situ conservation, cataloguing and characterization of the Italian agricultural biodiversity (not limited to the species listed in the Annex 1) through collaboration with research centres belongings to the MiPAAF and the Ministry of Universities and Research (MiUR). During the period 2007-2009, the MiPAAF has extended the original project scope to include activities of the so-called informal sector and to start dissemination to the whole society. Doing so, the association “Rete Semi Rurali” has been involved into the RGV/FAO project in order to provide information, dissemination and training about the Treaty objectives and consolidate the informal conservation system adopted by farmers and associations across different territories in

Introduction
Introduction

Global Plan of Action
Priority activities Utilization of Plant Genetic Resources

14. Developing new markets for local varieties and “diversity-rich” products

208. Assessment: Increasingly, diversity is being replaced by uniformity in the agricultural market place. Changes in traditional cultures and in consumer preferences are one explanation. Concentration on productivity, the effects of advertising and the rise of global consumer markets leading to stringent requirements being imposed on farmers and the inadvertent disincentives arising from legislation, policies, programmes and other institutional activities offer additional explanations. Farmers worldwide are losing once strong incentives to provide an array of varieties. Both in developed and developing countries, economic and social incentives could be offered to encourage farmers who continue to grow distinct, local varieties and produce “diversity-rich” agricultural products.

209. A programme to assist in the creation of specialized niche markets for biodiverse food crops could act as a positive stimulus to farmers to grow landraces/farmers’ varieties, obsolete varieties, and other under-utilized food crops. Such a program should include the identification and removal of systemic institutional barriers and disincentives to biodiversity conservation and production/marketing.

210. Long-term objectives: Stimulate stronger demand and more reliable market mechanisms for landraces/farmers’ varieties and related agricultural products.

211. Intermediate objectives: To encourage farm suppliers, food processors, food distributors, and retail outlets to support the creation of niche markets for diverse foods, varieties and products.

212. Policy/strategy: Governments should consider, and as appropriate, adopt policies in extension, training, pricing, input distribution, infrastructure development, credit and taxation which serve as incentives for crop diversification and the creation of markets for biodiverse food crops, including standards for labeling of foods which allow the highlighting of use of non-standard crop varieties. Consideration should be given to developing appropriate niche variety registration systems to permit and promote the perpetuation, trial, evaluation and commercial distribution of local, obsolete varieties and to monitoring regulations enacted for other purposes to ensure that they do not inadvertently lead to the extinction of varieties.

213. As feasible and appropriate, institutions should be encouraged to purchase “diversity-rich” foods for internal use.

214. Capacity: Processes and activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biodiversity should be identified and their effects on crop diversification monitored.

215. Appropriate bodies, including NGOs, should promote public awareness in various media and through appropriate mechanisms, such as street fairs, initiatives in schools, etc.

216. Coordination/administration: National and local level coordination and administration should be most effective.

217. This activity is closely linked with:

- Supporting on-farm management and improvement of plant genetic resources for food and agriculture
- Promoting public awareness of the value of plant genetic resources for food and agriculture.
the country. At present about 30,000 accessions have been recorder across the different public gene banks and it is planned to make them available through the multilateral Treaty system soon. Italy is one of the main contributors to the Treaty having provided founds at 1,048,000 €/year since 2005; this sum is about the 65% of the overall founds provided from all the industrialised nations.

L’Italia agricola¹

Analysing the statistical data about Italian farming system, one has the impression the country holds a position in between tradition and modernity where the farming activity, despite having a marginal residual importance, still conserves its importance for a wide portion of the population.

Despite in the last few years the number of farming workers have fallen below one million units, Italy still holds firmly the third place in Europe after Romania and Poland. The head count of employees in the farms working in the whole food sector, still give Italy a firm third place after Romania and Poland. It is interesting to stress that Italian agriculture is dominated by mainly small firms: small farms with less than 10 hectares represent the 85% of the total. Farms with more than 50 hectares represent only the 2.2% of the total in numerical terms and sum up to only 5.6% of the overall Utilized Arable Land (UAA). In fact, the average size for a farm is sensibly smaller than the ones in the EU area and in line with the newly incorporated eastern countries. This means in Italy the average size is 7.4 hectares, in France that is seven folds (48.6 hectares) and in United Kingdom nearly eight times largest (55.6 hectares) (Nomisma, 2008).

The landscape of the country is showing sign of a scattered system that during the years has not had the opportunity or the willing to modernise itself like other countries did with the aid from the European grants provided by the Common Agricultural Policy.

Analysing the economical dimension of the Italian agriculture, the sector presents two strong poles. On one hand, there are farms technically described as “enterprises” and in the other hand there is still the presence of companies not defined, as in European terms, as “enterprise”. From the 2000 data emerges that 82.8% of the farms has an economical dimension smaller than 8 European Dimension Unites (UDE) and the 55% is smaller than 2 UDE. Farms larger than 16 UDE, threshold above which the farms are “enterprises” market oriented, represent only the 9.5% of the total (Nomisma, 2008). An interesting fact to better understand Italian farming system is the workers’ average age: according to the 2005 Eurostat data, in Italy only the 3.5% of the workers is younger than 35 years against an European average of 6.9% and the number of farmers older than 64 years is 41.4%. The generational turnover index for Italy is the lowest across all the European countries except Portugal (Nomisma, 2008). After an in deep analysis of the generations groups in relation to the farms sizes, it emerges the largest group of older people work for the smaller farms wit less than 8 UDE.

From data analysis carried over the high quality productions and over the geographical indications (PDO, PGI and STG) the landscape changes dramatically. Italy has become a powerhouse in Europe with 175 certified productions in 2008.

¹ L’Italia Agricola [Italy and its agricultural sector] was the title of one the most important agricultural weekly newspaper during the ’50.
representing the 21% of the European total followed by France with 160 and Spain with 121. The market for these products is growing fast and in the last three years has recorded expansion in both production and turnover (Rosati and Verrini, 2009). Geographical indications are a strong link between the underlying territory, the culture and agriculture and their presence in Italy is a demonstration to the importance of this link as driving factor in the economical agricultural development still in these days.

In summary, the general situation is one of an agricultural sector balanced between tradition and modernization where in every day life farmers are trying to find new solutions in order to operate in the sector. It is also important to stress, as some case studies will point out, that the largest portion of the agro biodiversity and the traditional knowledge associated is usually preserved by the group of farms not listed as “enterprises” (<8UdE) and managed by people older than 65 years. For this reason, it is of paramount importance to adopt policies to tackle these structural weaknesses by avoiding loss of know-how and seeds due to generation gaps and to promote economical, social and cultural conditions where these farms can continue to operate. In fact, the global market is not within the reach for these farmers that, without the much-needed protections, are doomed to disappear with their particular knowledge and seeds. “Living the fate of soil and people to the market would be tantamount to annihilating them” (Polanyi, 1957).

Agrobiodiversity in Italy
This report focuses on sustainable use of plant genetic resources in Italy. It aims at analysing a number of case studies, ranging from the institutions to the civil society, falling within the framework of article 6 of the International Treaty on Plant Genetic Resources for Food and Agriculture. Furthermore, it presents them as possible ways of implementing this article in a northern and industrialized country.

“In Italy, the high percentage of land under cultivation is striking ... [For this reason,] knowledge of Italy and its Island is of fundamental importance to any under standing of Mediterranean culture [and agriculture]. A considerable portion of [Italy's] mountainous areas are covered with plantations tress planted in straight rows for fruit, nut or timber production whose trunks are entine by grapevines, and those interspaces between rows are seeded with wheat, fava beans, barley or other crops.” (Vavilov, 1997)

The different case studies point out the unique role that agrobiodiversity has played and still plays in shaping farming systems, agricultural landscape and food habits in the Italian peninsula. It is worthwhile to point out that, even if Italy has changed since Vavilov’s time, agrobiodiversity is still cultivated and has a growing role in the national and regional policies on rural development.

The first part of the report deals with the different policies and plans, set up by institutional bodies within the conservation and sustainable use of agrobiodiversity. Italy has been the first European country having a specific law on conservation varieties; in this report particularly attention is paid to describe the negotiation process and how this law relates with the European directive on conservation varieties (62/2008/CE). This law has been conceived as a national harmonization of the existing regional laws on promotion and conservation of local varieties and breeds. For instance, six
regions have already established specific rules on agrobiodiversity that can be considered one of the most interesting examples of providing a legal framework for the conservation of local genetic resources in Northern countries. The links of these regional laws with the Rural development plans of the European Union are examined in order to show their synergies.

Two more institutional case studies analyse other peculiarities of Italy. The first is the National plan on agrobiodiversity approved in 2008 by the Ministry of Agriculture, and the second is the Seed interregional programme whose results have been presented last year. In both cases the report underlines the huge role that public policies play for the sustainable use of agrobiodiversity, and the need of strengthening the coordination among different stakeholders, e.g. public bodies, agricultural research centres, farmers’ associations, seed savers.

The second part of the report deals with experiences undertaken by different actors of civil society: single farmers, farmers’ associations and consumers. These case studies emphasize the importance of agrobiodiversity in maintaining agroecosystems from both ecological and economical point of view.

As said by Nabhan, farmers’ knowledge still exists in Italy, mainly in those marginal areas not yet overwhelmed by agricultural modernization. Searching for these examples throughout Italy, the report shows how innovation is produced in rural areas mixing past and present, re-using agrobiodiversity for new challenges and needs.

Bibliography


Vavilov I., 1997. Five Continents, IPGRI.


“For the 551 species of cultivated plants that have been recorded in northern and central Italy, Italian farmers informally use no less than 10,672 vernacular names to refer to them” (Nabhan, 2008)
The National Plan for Agrobiodiversity

Maria Francesca Nonne, Riccardo Bocci

“CBD Article 6 refers to National Biodiversity Strategies and Action Plans (NBSAPs), [...] which are intended to promote inter-sectoral cooperation, towards the goal of sustainable use. For purpose of applying the NBSAPs concept within the Treaty, those terms are seen often as sequential: Strategies, set out specific recommendations or steps for national action, Plans, explain how a strategy’s specific recommendations will be achieved, and Programmes implement strategies and plans”

(Moore and Tymowski, 2005)

Introduction

Italy ratified the Convention of Biological Diversity (CBD) in 1994, but drafting the required National Plan for Biodiversity was lengthy and difficult because of the lack of coordination among the Ministries involved. Indeed, two draft Plans were prepared in the late '90s, one on agricultural biodiversity (for the Ministry of Agricultural, Food and Forestry Policies – MiPAAF) and one for natural biodiversity (for the Ministry of the Environment), but no single national plan was arrived at. Biodiversity is a transversal issue involving a series of institutional players both nationally and internationally and requires delicate coordination among different institutions. Biodiversity “is the link between critical areas of world politics: intellectual property, environmental protection, agriculture and trade” (Raustalia and Victor, 2004). In 2004 Italy also ratified the Treaty on Plant Genetic Resources, Food and Agriculture (ITPGRFA) with an ad hoc law that devolved the power to implement it to the Regions. This launched a phase of negotiation between Regional and national governments which ended in 2008 with the approval of the National Plan for Agricultural Biodiversity (PNBA) within the State-Region Conference. Moreover, this Plan can be considered one of the results of the “Innovation and Research Initiatives in support of the Seed Plan” project, which explicitly calls for national coordination and planning involving all subjects active in the fields of conservation and agricultural biodiversity (see Bocci and Nonne in this issue). This provided a national framework for the initiatives that private and public subjects had carried out at local, regional and interregional levels entitling them to inclusion within the European and international legislative context.

The state of the art

The Plan was useful for conducting a preliminary survey of all activities so as to devise a general modus operandi and a way of protecting agrobiodiversity which could be disseminated in the private and public sectors and in the sphere of research in order to share initiatives and make results comparable.

There are many subjects working in research: organisations belonging to the Council for Research and Experimentation in Agriculture (CRA) under the MiPAAF, those belonging to the National Research Centre (CNR) and to universities under the Ministry of Education, Universities and Research (MiUR) and, lastly, the other public bodies under Regional or Provincial administration. Each of these can or has launched initiatives to research, characterise, enhance and ex situ conserve local breeds and varieties. In the sphere of legislation and agricultural policies, the main players are the Regions, the Special Statute Provinces, the National Park Administrations and the Ministries of Agriculture and of the Environment.
mentioned above. Then there are the several civil or agricultural associations that are resorting to agricultural biodiversity at local level as a strategy for diversifying farm production. As can be seen, this is a highly varied assortment of very non-homogeneous subjects.

The Plan registered some 150 initiatives that had been launched with a plethora of diverse subjects with funding coming from highly diversified sources but all with a common objective, namely to recover, characterise and enhance agricultural biodiversity. Cases in point are the Interregional Programmes for the protection and enhancement of autochthonous vegetable germplasm, the several projects for recovering characterising and enhancing local and/or ancient varieties of cereal (“Solina Bread” in Abruzzo, enhancement of the upland bread production chain in Emilia Romagna and the initiatives for protecting and enhancing ancient cereal varieties in Veneto etc.), the projects for recovering and characterising ancient fruit varieties in order to conduct a census of the varieties extant, the projects launched by the National Parks (“We Cultivate Diversity” and the “Cerere” Project in Abruzzo or the "Cultivated Biodiversity from Cataloguing to Conservation" Leader Project in the Belluno Dolomite National Park), the Scigno project (Developing and characterising native genetic resources in fruit and vegetable growing), the Plant Genetic Resource project funded by MiPAAF and the project for enhancing Italian vegetable germplasm.

**The National Plan**

The main objective of the Plan is to meet the need to set the archipelago of the initiatives identified within a standardising national framework. It is to be stressed that there is total coherence between the Plan and the international obligations that Italy must conform to as signatory to the CBD and the Treaty. Indeed the PMBA states that the objective is also ... “to coordinate the combination of initiatives and relationships with national and international organisms involved in agricultural biodiversity. It is also to provide the Regions and Special Status Provinces called upon to implement the FAO treaty from Law 101/2004 with concrete answers to the problems that have emerged in introducing a nation-wide system of agricultural biodiversity protection able to restore most of the biodiversity no longer present or at risk of extinction, to the benefit of environmental protection, sustainable agriculture and rural development. In so doing, the system will also be able to contribute to performing Italy’s obligations in international treaties” (PNBA, 2008).

Flow-chart 1 illustrates the actors active in Italy and identifies the institutional relations among them according to the Plan. The Ministry is responsible for
international relations, collecting nationwide data, providing support to national-interest agricultural research, providing support to the various implementing subjects and making funding available for implementing the Plan. The scientific subjects involved, whether in directly with the Ministries or as support bodies to conservation activities at local level, have the responsibility of guiding methodology, defining common parameters, guaranteeing ex situ conservation at national level and providing scientific support to the Regions and Special Status Provinces. Lastly, they have the responsibility of drafting the progress reports of agricultural biodiversity in Italy. Local government (Regions and Provinces) is responsible for identifying, characterising, conserving and enhancing local breeds and varieties. It is also responsible for implementing the Community Agricultural Policy’s (CAP) Rural Development Plans (RDPs) and for funding “local” agricultural research. Lastly, the Plan considers farmers as conservators of agricultural biodiversity on an equal footing with ex situ banks run at local level.

The PNBA identified the need to implement a series of priority initiatives in an effort to coordinate and organise all the activities already running and to be launched. The priority initiatives or support initiatives are as follows:

<table>
<thead>
<tr>
<th>Initiatives provided for by the PNBA</th>
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<tbody>
<tr>
<td>Establishment of an interactive database of the various current initiatives at national level in order to ease access to information and to optimise the resources used in biodiversity;</td>
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<td>Definition of the risk of extinction or erosion of genetic resources and identification of common indicators;</td>
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<td>Identification of “adequate quantitative restrictions” as provided by the new regulations on varieties to be conserved;</td>
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<td>Valuation of present methods of ex situ conservation of local varieties, and definition of shared national guidelines;</td>
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<tr>
<td>Identification, assessment and experimentation of in situ/on farm systems of conserving local varieties (with the involvement of local farmer networks) and the definition of shared national guidelines;</td>
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<td>Definition of a common methodology for identifying and characterising autochthonous agricultural genetic resources in order to obtain comparable data and results and to standardise the various terminologies used at local level as well as the tools used;</td>
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<tr>
<td>Publication on-line of the characterisation results of local varieties (regional or national repertoires/registers), to make the data public and easily accessible;</td>
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<td>For the protection of autochthonous animal genetic resources, nationwide public selection of at least 2 reference centres specialised in collecting, preparing and conserving seed and oocytes or embryos obtained by producers for populations at risk of genetic erosion;</td>
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<tr>
<td>Identification of the main descriptors for characterising local varieties which can render the descriptions of different areas comparable;</td>
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<tr>
<td>Publication online of the fact sheets of the local varieties correctly identified and conserved (regional or national repertoires/registers);</td>
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</table>
Definition of general shared guidelines for enhancing local varieties and wherever possible the reintroduction into the territory in particular of varieties at risk of extinction;

Continuation and strengthening of research and experimentation into conservation, characterisation, enhancement and documentation of biodiversity by means that also include interregional initiatives;

Communication initiatives to promote awareness of genetic resources and to activate synergies among the territories involved.

The area of these initiatives is the whole gamut of agricultural genetic resources. They seek to broaden the list of cultivations annexed to the Treaty to include microbe and forestry diversity, taking a systemic view of agricultural biodiversity as indicated during the 11th meeting of the FAO Commission for Genetic Resources in Food and Agriculture (CGRFA) held in Rome in 2007 (CGRFA, 2007).

The plan allows for recourse to direct and indirect economic incentives to ensure an income for farmers and breeders who conserve genetic resources by making use inter alia of the provisions allowed for in the CAP by means of the RDPs (Melozzi, 2009).

The initiatives for protection include economic enhancement of agricultural biodiversity and of the products deriving from it. These include addressing the problems encountered in marketing them. Communication focuses on highlighting the methods of conservation, protection and enhancement within an approach of respect for the specificity of the territory and its cultural identifying heritage with the objective of:

1. Promoting public awareness of the importance of protecting and enhancing agrobiodiversity;

2. Stimulating active public participation in safeguarding biodiversity jointly with public and private institutions active in the territory.

There are some significant passages in the section of the PNBA dedicated to the role of farmers and breeders. The first concerns their active participation in research characterisation, study and investigation in the territories, and conservation of plant and animal agricultural biodiversity. The second stresses that the role of research and of those in charge of seed banks will be “to experiment and activate methods for continual monitoring and observation of activity within the various farmers’ networks” and to “make their knowledge and laboratories available to local bodies for the genetic or molecular characterisation of local varieties”. This in practice is a decentralised research method with a new relational approach by which local bodies act as intermediaries between researchers and farmers and is the outline that the PNBA gives to the premises for pro-active future co-operation between researchers, local bodies, farmers, breeders and other structures such as seed banks, all of which are fundamental within a virtuous system of conservation and sustainable use of agricultural biodiversity (Swaminathan, 2002), fully in line with the objectives stated in Article 6 of the Treaty.

In operational terms, the PNBA established the “Permanent Committee for Genetic Resources”, composed of a representative from the MiPAAF with co-ordinating functions, one from the Ministry of Universities and Research (MiUR), another from the Ministry of the Environment and Territorial and Maritime Protection and six representatives from the Regions and Special Statute Provinces. Experts in other areas who are not on the Committee may be co-opted from time to time according to requirements so as to establish a flexible, intersectoral structure able to dialogue with institutional and private actors. Its brief is to implement the Plan and define the priorities of the single initiatives.
programmed. The objectives to which the Committee decided to give priority for 2009 are as follows:

1. Identify the descriptors for the various species;
2. Define the investigative and characterisation methodologies for local breeds and varieties;
3. Define the guidelines for proper conservation in situ/on farm and ex situ;
4. Define the risk of genetic erosion by means of specific indicators.

In this way, the Committee intends on the one hand to co-ordinate among the Regions who already have specific biodiversity protection legislation in place (Bertacchini, 2009) and on the other to provide technical-scientific support to those Regions who still have none.

Conclusions
The Plan is the synthesis of a significant move towards co-ordination among the various areas of public administration which as well as taking the inter-disciplinary nature of agricultural biodiversity into account also considers the need to combine local and global dimensions and to establish dialogue between different actors. It also indicates the growing interest in Italy for agrobiodiversity not only as a museum curiosity or as a means of providing variability for genetic improvement, but also as an intangible asset to safeguard, bound in with our crops and traditions.

One last reflection concerns involvement of the general public and of farmers in the PNBA and its implementation. It must be said that a certain amount of difficulty has been encountered in opening up decision-making processes and in conferring a more active role to these subjects. Despite the Plan explicitly stating that “it is therefore necessary that the network of farmers at local level be identified as the fulcrum for the conservation of genetic resources” (PNBA, 2008), farmers, to all intents and purposes have been kept out of the negotiating process and relegated to the role of mere “custodians” of agrobiodiversity. Furthermore, the work of research and conservation conducted by civil society is also absent from the Plan despite it having reached a perceptible critical mass.

Bibliography


Marino D., 2001. Le politiche e le strategie a livello internazionale e nazionale per la salvaguardia e la valorizzazione della biodiversità, Tipografia Arti Grafiche.


Introduction

Italian regional legislation is one of the few operational examples at European level for protecting and enhancing the genetic resources for food and agriculture. In many ways it can be considered a forerunner of regulations at national and European levels in line with the aims of the FAO treaty on plant genetic resources for food and agriculture (ITPGRFA).

The origins of this experience are to be found in the Tuscan Regional Law 50/97 on “The protection of autochthonous genetic resources” which was later followed by similar initiatives on the part of the Regions of Lazio, Umbria, Friuli Venezia Giulia, Marche and Emilia Romagna (see table). Underlying these initiatives is the awareness that there are only a few remaining local or old varieties being grown in Italy today (FAO, 1998). The interest of individual farmers in maintaining autochthonous breeds and varieties is declining since there is no economic gain in preserving and exploiting agricultural diversity. This means that the heritage of species and variety of interest to agriculture and husbandry present in the territory is at risk of genetic erosion and hence requires measures that will encourage conservation and provide incentives towards sustainable use of autochthonous genetic resources.

In the Italian context, the regional laws also act as a useful local test bench since the Italian constitution states that Regions are empowered to legislate on matters of agriculture. Furthermore, the Italian law transposing ITPGRFA expressly states that the Regions are the principal subjects with whom responsibility lies for implementing the treaty. The experience with the Regional laws, therefore, highlights the importance of the local context in addressing the question of the sustainable use of genetic resources. In particular, combining territorial development with agricultural biodiversity appears to be an appropriate strategy for harmonising local incentives and global objectives in pursuit of the common good deriving from the sustainable use of genetic resources for food and agriculture (Helfer, 2005).

Objectives and tools of the regional laws

The objective of the regional laws is to safeguard and enhance the heritage of autochthonous genetic resources, especially those at risk of erosion. In some cases, only animal and plant varieties of agricultural interest are considered (Lazio, Umbria and Marche), whereas in others, protection and enhancement is extended to forestry resources (Toscana and Friuli).

Although the purpose of the majority of laws is to protect autochthonous genetic resources, in some cases the Regional laws are applied to forestry resources.
resources, more recent versions (Toscana and Emilia-Romagna) graduated towards expressly considering local breeds and varieties while acknowledging a juridical correspondence between the two concepts. This semantic shift seems to have the objective of moving towards a more organic perspective of genetic resources in which the prevalently economic worth of the term “resource” is combined with ecological, agricultural, cultural and historic factors which encompass the concepts of “territory” and “variety”.

The definition of autochthonous breeds and varieties include:
1. Those which are originally from the regional territory;
2. Those which although not originally from the regional territory have lived within it for a long time – indicatively more than 50 years.4

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4 Not all the laws specify the duration but in most cases it is set as 50 years.
3. Those originally from the regional territory and no longer present on it, but conserved elsewhere.

From this definition, and the second criterion in particular, the concept of autochthony clearly emerges as being broad and especially dynamic. It is by contemplating varieties that have become integrated over time that the idea of the heritage of autochthonous genetic resources does not become rigid but stays adaptable and “elastic” to shifts in local farming methods.

The regions take on the responsibility of safeguarding and enhancing this heritage by means of a series of tools which are essentially based on the following points:

1. establishment of a voluntary, free-of-charge regional register for species, breeds, varieties, populations, cultivars, landraces and clones;
2. establishment of technical-scientific committees to assess the fact-sheets of the subjects listed on the regional register;
3. establishment of a network composed of farmers, associations, public and private bodies, research bodies, universities, gene banks to conserve and safeguard the varieties registered;
4. pursuant to Article 8j of the Rio Convention on biodiversity, recognition of local communities as the stewards of the resources (e.g. Lazio and Umbria), or the Region itself (e.g. Toscana, Emilia Romagna), as guarantor and manager of this heritage.

Of these tools, the voluntary regional register, and the conservation network are the most effective and innovative means for pursuing the objectives of protecting and enhancing local varieties.

The regional register is crucial firstly for identifying the varieties that are present in the region and secondly for giving them a precise, indisputable identity – both basic factors for exactly evaluating the point of genetic erosion reached and thus the most solid measures of protection needed (Dutfield, 2004). For example, the regional register of Toscana presently counts 564 arboreal and fruit species and 58 herbaceous ones of which 400 and 50 respectively had been considered at risk of extinction. 100 species have been registered in Lazio so far, 29 of which are herbaceous.

By the same token, the network of conservation and protection performs the functions of conserving, multiplying and disseminating the genetic material registered in full conformity with present legislation. The network, with its mechanism of selection and enrolment of applicants, can be seen as a first attempt to create an integrated institutionalised system at grass-roots level for ex situ and on farm conservation. It puts a variety of actors in touch with each other who are interested in the protection and sustainable use of autochthonous genetic material.

In the first instance, ex situ conservation is undertaken by the region’s public and private research institutes; in some cases the law provides for the ad hoc establishment of a regional seed bank (Toscana, Marche and Friuli Venezia Giulia). In the second instance, on farm...

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5 This is a very similar definition to the one introduced by Decree of the Minister of Agriculture, Food and Forestry (MiPAF) of 18 April 2008 “Measures applicable to the commerce of conservation varieties”. Article 1 states that the definition of ‘conservation varieties’ encompasses non-autochthonous varieties which have never been registered in the National Seed Register, provided they have been integrated within the local agricultural eco-systems.

conservation is entrusted to “steward” farmers who perform the task of maintaining and multiplying the local varieties that have been assigned to them. The laws normally allow farmers within the network to save and to locally exchange a modicum of seed, in quantities agreed for each single subject when they enrol in the regional register.

**Synergies with Article 6 of the FAO Treaty**

The regional laws examined are a clear example of juridical measures and institutional frames for promoting the sustainable use of plant genetic material for food and agriculture in conformity with Article 6.1 of the FAO Treaty. Furthermore, the tools provided for in these laws are fully in harmony with the measures described in points a) and g) of Article 6.2 of the Treaty, according to which the contractual parties shall launch policies that favour local farming practices and where necessary, modify the regulations on the trade of varieties of seed and their distribution.

Europe and Italy are both witnessing a rapid decline of both plant and animal agricultural bio-diversity, due mainly to a series of economic and institutional factors which, instead, have encouraged the spread of varieties that maximise productive efficiency on vast farming areas. These varieties ensure high profit margins for the large seed companies who promote their produce instead of the autochthonous varieties which historically are more suited to the local contexts but have a low commercial value except for use in restricted settings and which are hard to insert into a production chain of a more agro-industrial nature (Swanson et al., 1994). Institutional factors emerge as being particularly significant for analysis. The way that seed distribution is institutionalised in Europe, Italy included, provides no incentive towards the use or commercialisation of autochthonous varieties. The system of plant variety rights and the system of registration in the Catalogue of Plant Varieties have very strict requirements of distinctness, uniformity and stability (DUS), as well as how the seed is to be marketed (Almekinders, 2000; Louwaars, 2000).

These institutional constraints make it less inviting to use local, autochthonous varieties which now only tend to be cultivated in limited, marginal areas with a consequent loss of the heritage of the agricultural biodiversity of the territory. This heritage is only the first link in an agricultural and food chain that reflects the cultural roots of the territory and which, if enhanced, can favour high returns both economically and in terms of local development.

While autochthonous varieties today occupy a niche within the seed system which is often marginalised and negatively affected by institutional constraints, Italy, through its regional legislation, has created new juridical openings that favour this niche. This new legal space does not run counter to the framework of existing incentives, which are tailored towards a model of varietal innovation for the seed market. The objectives aim rather more towards completing the existing system by giving a clearer, better defined juridical status to autochthonous varieties and producing a new series of measures and incentives to conserve and enhance them.

In the first place, these laws tend to view autochthonous varieties and breeds as a collective heritage of local communities. As
already mentioned, the idea of a collective heritage emerges clearly from the texts of the laws which refer back to Article 8 (j) of the Convention on Biological Diversity, or provides that the Region itself be recognised as party responsible for the autochthonous genetic resources. At the same time, the regional laws do not contemplate the institution of any form of individual exclusive rights over the variety. The individual or juridical person who suggests a variety be registered enjoys no exclusive right to the variety involved, just as no third party may lay claim to it and request a plant variety right. Rather, enrolment in the register and access to the resource accures first and foremost collective benefits for the community as a whole in terms of conservation and enhancement of the heritage of autochthonous genetic resources. Furthermore, some laws (Toscana and Emilia Romagna), also regulate the use of autochthonous genetic resources to create new varieties. Members of the conservation network who intend applying for a plant variety right, or a patent on a variety essentially derived from one enrolled in the register, must request prior authorisation to do so or give timely notice that they intend doing so to the Region or to the body responsible.

These characteristic elements in regional laws have many analogies with the institutional framework created by Articles 12.3 (d) and 13.2 (d)(ii) of ITPGRFA, which respectively forbids any form of monopoly on the genetic resources registered in the multilateral facilitated exchange system and regulates of the compensatory regime for the new varieties that used genetic material from the multilateral system.

A second tool for promoting the conservation and enhancement of autochthonous varieties is the right of “steward” farmers and members of the network to locally exchange seed without any form of monetary compensation. This institutional innovation recognises the importance of farmers’ practices which, in the past, have brought about varietal innovation and the continual adaptation of varieties to the territory exactly as the premise to ITPGRFA recognises. This right can be especially important in coping with the risk of extinction of local varieties by putting them to use in agriculture. Further, it is also a way of safeguarding and enhancing the cultural heritage and traditional knowledge which are tied in with autochthonous crops. In this sense, saving and exchanging seed inevitably allows farmers to exchange information, which leads to a strengthening of traditional knowledge within the community. One of the obligations that Article 9.2(b) of the Tuscan Regional law provides for steward farmers is to spread knowledge and cultivation of the genetic resources that they are custodian of within the principles of this law. In the same way, Article 13 of the Emilia Romagna Regional law recognises the protection offered by the regional body to the knowledge, techniques and customs of the local communities linked to the agricultural biodiversity of the territory.

Unresolved issues and future development
The experience gained in applying the regional laws presented in this study is undoubtedly an important source of normative reference for the conservation and enhancement of autochthonous genetic resources. One of the main lessons

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7 Article 5 of the law of the Lazio Region is more explicit on this point: "Without prejudice to the right of ownership of every plant or animal in the register pursuant to Article 2, the heritage of the genetic resources embodied in these plant varieties or animal breeds belongs to the local native community [...]".
to be learned from it is how institutions can be innovative in promoting measures for the sustainable use of agricultural biodiversity.

However, as for all institutional processes, some issues still remain unresolved as to the implementation of these laws and future developments on the Italian and international normative scenario.

While the objectives of the regional laws can be universally shared, and the innovative tools they provide appreciated, the implementation of the norms and how they work depend on many factors, inter alia technical, bureaucratic and political.

With this complexity in mind, there are differences in how the various Regions are implementing the laws that they have approved. The laws are already operative in Lazio, Marche, Toscana and Emilia Romagna, partially operative in Friuli and non-operative in Umbria. In the areas where the laws are operative a census has already been carried out on the autochthonous genetic resources and the regional register and technical scientific committees are functioning. The Toscana Region has also begun to select and register steward farmers as the basis for the future network for conservation and security.

In addition to the differences in implementing the laws, there are also important unresolved issues in how the local genetic heritage is best managed. Considering that legislative tools are regional while conservation and enhancement of genetic resources go beyond the purely local context, there cannot but be problems of co-ordination among the different institutional levels. Links among the Regions therefore need to be reinforced in order to co-ordinate efforts to safeguard autochthonous genetic resources.

Furthermore, although the texts of regional laws share many similarities, more caution is needed in assessing the operative aspect of the laws (e.g. measuring its effectiveness). For example, the data contained in the regional registers must be uniform if there is to be any thought of integrating the repertoires within a nation-wide dimension in some future time. The material catalogued in the various registers, however, is still heterogeneous and does not always refer to the same type of descriptors for varietal characterisation.

In the same way, the regional activity can be at a disadvantage by being limited to a local setting, if, for example there is a lack of technical skills for managing the system of conserving the autochthonous genetic resources properly.

Lastly, relevance must be given to how the tools of present regional legislation will fit in with the new EU directive on the so-called “conservation varieties”, which must be implemented by EU Member States. The points of greatest interest and clarification are as regards 1) the definition of the concept of genetic erosion, 2) the economic incentives deployed in marketing.

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8 The criteria for selecting the variety characterisation descriptors for autochthonous varieties is also of great importance. The descriptors given in the UPOV guidelines tend to privilege the uniformity and stability of the variety while those suggested by IPGRI are more suited for describing the diversity and the degree of variability in populations of autochthonous varieties. It is clear, therefore, how nation-wide selection and co-ordination of this seemingly technical aspect can affect the juridical definition and cataloguing of the heritage of autochthonous varieties.

9 European Directive 2008/62/CE “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”. For a treatise on this subject see the article by Bocci, 2009.
conservation varieties and 3) the issue of the circulation of seed, also considering farmers’ exchange.

1) Definition of the concept of genetic erosion

The question of genetic erosion and the need to conserve varieties at risk is dealt with both in the EU Directive mentioned above concerning conservation varieties and in the Regional laws studied here. According to the EU Directive, conservation varieties are those which are naturally adapted to the local agricultural systems and threatened by genetic erosion. Similarly, the most innovative tools provided by regional laws – such as, for example, the network of steward farmers – were expressly created to conserve the varieties that are considered at risk of genetic erosion.

It is therefore fundamental to understand how the risk of erosion is to be determined since the compliance or non-compliance of a variety to this criterion can have juridical implications. In this regard, the EU Directive is rather vague defining genetic erosion 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”.

At the regional level, Emilia Romagna has emerged with a detailed proposal for defining the basic criteria for considering a variety at risk of genetic erosion. In fact, the implementing regulation of the law identifies minimum levels of cultivated land which vary in accordance with the species, and contemplates not only the ecological and agricultural properties of the varieties but also, indirectly, natural factors and the production capacity of the farms on the territory.

In many instances, the risk of erosion or of disappearance is mainly due to the scarcity of farmers cultivating the crop. The definition of risk, therefore, must also take into account this human factor which is only indirectly linked to the ecological and agricultural properties of the variety. This sensibility in defining the risk of erosion gives highlights the role of the farmers and their capacity to use autochthonous varieties and safeguard their genetic heritage of interest to agriculture.

2) Economic incentives and marketing conservation varieties.

The aim of enhancing conservation varieties is pursued through the derogation from the present seed system by enabling the variety to be registered in the Common Catalogue and with a proper procedure to be followed in selling the seed. This second aspect of marketing of conservation varieties, which is one of the lynchpins of the new European legislation, is practically absent from Regional laws.

In this sense, registering varieties, entered previously in the Regional Register as conservation varieties, may be regarded as a supplementary tool for enhancing these resources.

Being able to market the seed varieties registered in the Common Catalogue – even considering the constraints on quantity specified by law – could be an important step forward towards a revitalised production of autochthonous varieties. In this way, the economic return from the sale of seed becomes an incentive by which farmers can recover the costs of conservation as the holders of plant breeders’ rights can recover their investments in varietal innovation by
marketing the seed of commercial varieties.

One particularly interesting idea for enhancing the benefits of marketing local varieties is already comprised in the Toscana Regional law which has transposed the new European regulation on conservation varieties into law earlier. In addition to the commercialisation of seed, a regional mark has been devised which may voluntarily be set on the products constituted that contain or are derived from material in the register\textsuperscript{11}. This creates a distinguishable brand to favour the broadest possible consumer awareness and knowledge on food products obtained from local varieties and breeds at risk of extinction, and consequently enhance demand for the product itself.

It is to be noted that being able to market the seed is the most significant economic incentive but not the only one available for encouraging the re-adoption of varieties at risk of erosion. The Regional laws also provide for expense reimbursements to steward farmers for their work in conserving the assigned varieties. Lastly, the Rural Development Plans can envisage other forms of allowance for enhancing and conserving autochthonous varieties, thus tracing a more complex frame of economic incentives both market and public based.

3) Question of the circulation of seed and exchange among farmers.

One issue which is not clarified by the EU Directive on conservation varieties concerns the distribution of seed by the traditional practice of farmers exchanging it amongst themselves.

These practices are an integral part of so-called “Farmers’ Rights” and as has been underlined earlier have always lain at the base of the continual innovation and adaptation of varieties to the ecological conditions of the environment (Andersen, 2005; Girsberger, 1999). In recognition of the enormous contribution of farmers in conserving, improving and making available plant genetic resources, the Article 9.3 of ITPGRFA establishes that nothing shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate.

This weak affirmation of Farmers’ Rights in the question of the exchange of seed seems to create more doubt than certainties. In Italy and Europe, the root of the problem is that present regulations of the seed system focus mainly on the issue of commercialization of seed and neglect or fail to identify directly seed exchange between farmers as a non-profit transaction.

In this sense, even the European Action Plan in favour of Agricultural Biodiversity is oriented towards the idea of marketing, recognising that “ [...] conservation and the in situ ad on farm improvement of plant genetic resources also depend on the real possibility of using these resources in the long-term, and thus legislation that enables the commercialisation of diversified genetic material”\textsuperscript{12}. In the same way, the aim of the EU Directive for conservation varieties is mainly to confer juridical legitimacy to these varieties allowing them to be marketed on the seed market.

It is therefore important to establish whether the traditional practice of non-profit exchange of seed among farmers

\textsuperscript{11} Art. 11 Tuscany Regional Law 64/2004.

\textsuperscript{12} Communication of the Commission to the Council and the European Parliament of 22 May 2006 – Action Plan in favour of Biodiversity in Agriculture.
falls within the concept of marketing or not in order to implement appropriate strategies of in situ and on-farm conservation for local varieties.

The varieties not registered in the Common Catalogue, including the local and autochthonous ones, are particularly vulnerable to this problem because marketing them is expressly prohibited. At the same time, these varieties, lacking commercial interests, fall in a legislative and juridical vacuum that legitimises their exchange and circulation out of the formal channels of seed distribution.

Absent a juridical legitimacy, the informal exchange of seed of varieties that do not appear in official registers can be formally against the law but be practised because of the lack of enforcement of the regulations. In other cases, to get round the problem, exchange takes place within groups of farmers who have formed associations (Almekinders and Jongerden, 2002).

This is why it is important to understand how the concepts of selling and marketing are defined in seed legislation. For example Louwaars (2005) points out how seed legislation in South Africa and Malawi expressly states that the definition of seed sale also includes exchange and barter of seed, which makes this practice illegal when the varieties exchanged are not in the official register.

With this perspective, EU Directive 98/95/CE and Legislative Decree 212/2001 state that “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”13. As can be seen, by including commercial exploitation with or without consideration this definition leaves doubt surrounding the legitimacy of the non-profit exchange of seed.

The Regional laws have sought to respond to these drawbacks and to the fact that even the free exchange of seed risks to be interpreted as an act that falls within seed regulations and therefore subject to its rules. The conservation and safeguard network has been set up precisely with the aim of being a legal tool that allows the exchange of seed between interested parties who are registered as belonging to the network. However, we still have to understand the extent to which this tool is in harmony with regulations regarding seed both as regards autochthonous varieties which will be inserted into the Catalogue as conservation varieties, as well as for the autochthonous varieties not at risk of erosion which will, instead, not be included.

Bibliography


Andersen R., 2005. The History of Farmers’ Rights. The Farmers’ Rights Project Background Study 1


The implementation of the directive on conservation varieties

Riccardo Bocci

“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)

Introduction

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. “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 and so must be amended somehow.

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 agriculture, again stressing how on‐farm conservation also depended on seed legislation that allowed genetically diversified material to

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1 This article is an excerpt from Bocci R., Seed legislation and agrobiodiversity: conservation varieties, Journal of Agriculture and Environment for International Development, vol. 102. N. 1-2. Thanks to Massimo Angelini, Oriana Porfiri, Piergiacomo Bianchi and Romana Bravi for their useful remarks that gave me the inspiration to write the article. Indeed, a lively debate took place in Italy on the subject, reflecting the interest this measure has aroused.

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

3 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).
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 98/95. 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 biodynamics. 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;
3. appropriate quantity restrictions.

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 be only be able to be seen in the coming years by verifying if varieties not permitted today are on the market and if the rules established for implementing it are effective and efficient in the various EU countries.

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

1. The objective is the conservation of plant genetic resources (PGR) and the marketing of their seed;
2. To conserve these varieties, it is fundamental that the seed be reproduced in the place of diversification/origin of the variety;
3. Quantity restrictions and an adequate system of traceability must be established to prevent this simplification being abused to get

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4 The specification is needed because directive 98/95 is also about entering transgenic varieties in the National catalogues.

round seed regulations and market varieties not to be conserved;
4. Member States may establish derogations on distinctness, uniformity and stability (DUS),
5. 3 years after it comes into force its effectiveness will be subject to evaluation.

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 Catalogue, 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 marketability 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.

The implementation in Italy

Italy is the only country in Europe to have implemented directive 98/95 before Directive 62/2008 by ad hoc national-level regulations. Transformation of EU legislation on conservation varieties in Italy began in 2007 with Law Nr. 46, Article 2 (b) 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 norms. For Italian legislation, varieties, populations, landraces, clones and cultivars of agricultural interest worthy of conservation are for species of plant that are:

1. Autochthonous and non-autochthonous which have never been registered in the Catalogue provided they have been integrated into local agrosystems for at least fifty years;
2. No longer registered in the Catalogue but still at risk of genetic erosion;
3. No longer grown in Italy but conserved in botanical gardens, experimental institutes, public and private germ-plasma 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

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6 “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, which interweave with acts aimed safeguarding, sometimes getting in the way” (O. Porfiri, pers.com.).

7 For the story of how the approval of this decree was arrived at see L. Paoloni (2005) and the site www.semirurali.net.
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 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 agricultural biodiversity laws and then notify the Ministry of the varieties to be registered in the catalogue as conservation varieties. The aim is to achieve integration among the various levels of regulation in a decentralised system (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 curtailing of cultural diversity and would also run counter to the directive prescriptions which allows for a single variety to have more than one name.

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 (DUS). 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 regulations\(^9\).

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 produced\(^10\). 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 area (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 area 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. geographical 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 geographical indications, which up to now have been the only one 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.

**Synergies with the Treaty**

The concept of conservation varieties is irrevocably connected to Article 6 of the Treaty and the sustainable use of genetic plant resources. Indeed, every EU document makes it clear that the directive on conservation varieties is the legislator’s response to the seed sector as a move to stem the loss of agrobiodiversity. 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

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\(^9\) Provided for in Italy by Law 1096/1971 and amendments.

\(^10\) Note that the draft decree prepared by the Rural Seed Network and submitted to MIPAAF for approval linked the modest 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.
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 Italian legislation is going to be reviewed and amended in order to implement the new directive 62/2008 in the next few months. Up to now no information is available to say if Italy will maintain and integrate its specific rules on conservation varieties in the law of implementation of the directive. Depending on it, 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 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 participative genetic 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 – VCU -, 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 marketing.

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 limitations or geography 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).

Bibliography


The implementation of the directive on conservation varieties

Journal of Agricultural and Environment Ethics 18: 3-25.


Research and innovation initiatives in support of the seed plan

Riccardo Bocci, Maria Francesca Nonne

“Landrace is a genetically variable population, not improved by formal breeding, spread in the same area where it originated through repeated cultivation by farmers and that local community considers as its heirloom”

(Falcinelli, Lorenzetti, 2008)

Introduction

The project entitled “Research and innovation initiatives in support of the seed plan” in the form of an inter-Regional project has been adopted by a number of Regions pursuant to Law N° 578 of 1996 which provides for systematic initiatives to be launched in support of the Italian agriculture and food system. In this case, the project was launched in order to improve the Italian seed system, considering that an agricultural policy whose objective is quality must also accept the uncompromising premise of guaranteed quality in seeds. The project committee, composed of representatives from 16 Regions (Basilicata, Calabria, Campania, Emilia Romagna, Friuli Venezia Giulia, Lazio, Liguria, Lombardia, Marche, Molise, Piemonte, Sardegna, Sicilia, Toscana and Veneto) led by the Region of Umbria launched two subprojects – one nationwide entrusted to the Ente Nazionale Sementi Elette (National Elected Seed Authority) – the public body that deals with seed certification and control, and the other Regional in scope, entrusted to a Consortium of 16 research bodies coordinated by the Department of Applied Biology of Perugia University.

The former, the First Programme for Research and Experimentation (PRIS1, 2005 - 2007) was composed of the following four theme areas:

1. Development of guidelines for the production of non-GMO seed products and for determining areas for multiplication;
2. Development of regulations for the production of non-GMO seed products for maize, soy, tomato, potato and sugar beet
3. Fine tuning of guidelines for identifying trace elements for the enhancement of the seed system;
4. Definition of guidelines for issuing seed licences.

The second Programme of Research and Experimentation (PRIS2, 2005 - 2008) was divided over the following issues:

1. Development of supply chains for producing non GMO seed products;
2. Identification of production technologies for seed products for organic agriculture;
3. Assessment of suitability of varieties suited to organic production;
4. Assessment of autochthonous genetic resources of agricultural herbaceous interest.

The raison d’etre of both PRISs lies in the need for any domestic seed sector to be sufficiently equipped to deal with the changes that occur in the world of agriculture; for example, the spotlight on the one hand being focussed on the GMO issue and the availability of GMO-free seeds and on the other hand on organic farming – an area in which Italy is one of the leading countries in Europe – and the need to have a seed distribution system that can produce seeds for organic farming. A third area of interest for PRIS is agricultural biodiversity and the so-called local varieties because as Falcinelli wrote (2008) “Today the seed market is required to come to the defence of biodiversity”.

Research and innovation initiatives in support of the seed plan

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This contribution will analyse this latter aspect of the inter-regional project.

**PRIS2 – agricultural biodiversity**

The main objective of the three year project was to map out all the current initiatives at national, regional and local level in collecting, characterising, conserving and enhancing agricultural biodiversity.

This research which was conducted by questionnaires to the main actors; bibliographic investigations and focussed interviews highlighted the need for coordination among all those involved. Indeed the great many subjects who are somehow involved in one way or another in collecting studying and conserving local germplasm find themselves in a situation in which there is a considerable amount of information but no shared work methodology. This makes it hard to compare the individual experiences and data collected (Concezzi et al., 2008). This, then, is the situation in which a National Plan of Agricultural Biodiversity was established in 2008 one of the results achieved by PRIS2 (see Nonne and Bocci on this Report on the The National Plan for Agrobiodiversity), and which provided a framework of national coordination.

Another issue that PRIS2 addressed was how to define landrace – a term used within the international framework – at national level. This is an important issue since E.U Law increasingly refers to what in English are called “landraces”, a term which often generates confusion in Italy. In Community Directive 62/2008 on conservation varieties, for instance, landraces is translated as ecotypes (Bocci, 2009), but PRIS2 concluded that the proper translation is *varietà locale* because ecotypes are a natural population especially in an ecosystem. Moreover, there is a older term – *agroecotype* – that may be used. Coined in 1950 by Carlo Jucci it is a synonym for landrace or local variety (Falcinelli and Lorenzetti, 2008; Jucci 1950) to emphasis the contribution made by farmers which is not conveyed by the word ecotype in selecting varieties. The definition that PRIS2 is based on three basic premises:

1. The absence of formal genetic improvement;
2. The structure of the variety being genetically variable;
3. A link with the territory and the agricultural community that selected it.

The information was collected so as to set up a database that could be consulted on line at [http://www.catalogovarietalocali.pris2.parco3a.org/consultazione.aspx](http://www.catalogovarietalocali.pris2.parco3a.org/consultazione.aspx). It contains the data of the 2,126 varieties listed and is subdivided by category (graph 1) and by category and region (graph 2). The catalogue makes no claims to be exhaustive but is in any case a good starting point for learning about the Italian plant heritage which, in turn, is fundamental to any initiative for conserving and enhancing. For example, access to incentives provided by the Rural Development Plan for agricultural biodiversity conservation depends on being included in a register or repertory of local varieties that qualify for funding (Melozzi, 2009). The varieties accepted for registration were catalogued on the basis of a 16-field data set which in addition to the purely scientific also lists the local name of the variety, the type of conservation it has been subjected to and the availability of seed for exchange and research (Tab. 1).

The varieties in the catalogue were subdivided into 5 categories the largest being the cereals with 1,020 entries followed by grain legumes with 518 and vegetables with 363. The most cited species is maize with 487 different varieties.
followed by beans with 302 varieties, medicinal herbs (110 varieties) and tomatoes (58 varieties).

At regional level the richest in local varieties is Umbria (307), followed by the Abruzzi and the Marche (231), Sicilia (195) and Toscana (178), as can be seen in the following table.

PRIS2 has also made efforts to recover and revalue old varieties of wheat to assess if and how they may be adapted to organic farm cultivation. The varieties concerned were not local but from the first half of the 20th Century, produced by plant breeding and endowed with a marked capability of adaptation, robustness, resistance to disease and greater efficiency in nitrogen usage. All these properties, together with taste and smell, give it excellent prospects for being grown in low-input farming contexts (Vecchio et al., 2008). This project, realised in the Tuscany Region by Florence University involved several farmers in reproducing the collections housed in the University seed bank and in the growing trials of the varieties selected.

**PRIS2 and the sustainable use of agricultural genetic resources**

One of the first steps towards sustainable use of plant genetic resources is to devise adequate strategies for orienting initiatives at national level. PRIS2 responds to precisely this need, outlining recommendations, future activities and pointing out key points for fitting agricultural biodiversity conservation into the Italian agricultural system in particular into the areas of organic farming and typical local produce.

The work carried out by PRIS2 in researching and organising the data is the starting point for increasing the use of local and locally adapted varieties as provided by Article 6.2 (e) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). Indeed, the legal tools that discipline the marketing of the varieties always call for knowledge about and characterisation of the genetic material. This is found, for example, in the
Italian regional laws as well as in the European norms on conservation varieties where identifying the variety is indispensable. As stated by Falcinelli and Lorenzetti (2008), all local varieties can be listed in the registers or catalogues of conservation varieties, therefore the inventory of the local varieties prepared by PRIS2 is an important step forward towards actually proceeding to conserve them. Here, though, the problem arises: which descriptors are to be used to describe the local variety? “What was achieved within the PRIS2 programme leads us to think that even using UPOV or Community Plant Variety Office descriptors, their actual number should fall dramatically resorting only to those by which local varieties can be distinguished from each another making use of the farmers’ knowledge. They, indeed, should be the closest advisors regarding the species they are familiar with” (Falcinelli and Lorenzetti, 2008). In this respect, PRIS2 can be linked to Art 6 of the ITPGRFA, as it encourages the creation of a more flexible legislative system for registering varieties. Furthermore, and wishing to highlight the importance of getting farmers’ active participation, not only in agricultural biodiversity conservation but also in research and experimentation such as took place in the specific wheat project in Toscana, the PRIS2 paves the way for affirming a participative research model as indicated in Art 6 (c).

Conclusions
The accomplishments of PRIS2 on agricultural biodiversity are an important step forward towards full application of the Treaty in Italy. In addition to the concept embodied in Article 6 they are the basis on which to build the future sharing of plant genetic resources within the multilateral system. The proposed national catalogue is very interesting in this sense since not only has it identified the ex situ collections of the research institutes but also the many varieties held for whatever reasons by the actors of the varied world of agrobiodiversity conservation. Furthermore the information that the database will provide on how the resource is conserved (ex situ, in situ, on farm) and the extent to which the seed is available is centralised information all part of the
facilitated access to the material. Updating the catalogue and making it fully operational is now the responsibility of the National Plan on Agricultural Biodiversity which is also responsible for tackling practical issues of accessing it.

At national level PRIS2 acknowledges the need to implement existing legislation on conservation varieties so as to set the marketing of these seeds within a clearer legal framework. Here, the responsibility falls on the MiPAAF who will have to align national legislation by the end of 2009 (Law 46 of 2007 establishing the catalogue of conservation varieties and the relative ministerial decree of June 2008 defining terms and procedures) with the recent community directive (62/2008).

Note also the importance of the link that PRIS2 establishes between local varieties and organic farming not only in as regards conservation but also as a way of getting them to be a regular part of farming

Bibliography


Falcinelli M., Lorenzetti S., 2008. Le varietà locali presenti in Italia e la loro salvaguardia per la difesa della biodiversità nazionale, in Rete Interregionale per la Ricerca Agraria, Forestale, acquacoltura e pesca, Azioni di innovazione e ricerca a supporto del piano nazionale sementiero: PRIS2, Promovideo.
Incentives for agrobiodiversity: the implementation of Rural Development Plans

Lorenzo Melozzi

"Yo soy yo y mi circunstancia y si no la salvo a ella no me salvo yo". 
José Ortega y Gasset, Meditaciones del ‘Quijote’, I: 322.

Introduction

Biological diversity is one of the most important and weighty values and resources within the concept of sustainable development, a cornerstone implemented by the European Union in all policies. The EU was one of the main players in negotiations on the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), often bridging the gap between other OECD (Organisation for Economic Cooperation and Development) countries and developing nations. Furthermore, in signing the Treaty in March 2004, the EU became a contractual party to it and has the same responsibilities as Member States for implementing it.

The main tool by which Member States implement their policies for agricultural development is the so-called Rural Development Plan (RDP), one of the two pillars on which the Common Agricultural Policy (CAP) rests. RDPs are the tools by which the EU puts its policies into practice and seeks to orient the operators involved by means of economic incentives.

RDPs provide two kinds of incentive for conservation of agricultural biodiversity, namely direct and indirect. The former takes the shape of payments made to farmers for growing or raising a specific breed or variety at risk of genetic erosion (measure 214 in the Axis 2). The latter are indemnities to encourage a farming approach that is more respectful of the environment and less intensive and which, generally speaking, makes use of agricultural biodiversity.

The RDPs in Italy

Responsibility for planning and running RDPs in Italy lies with the Regions while in other European countries it is national or hybrid – shared between State and Region. For this reason, RDPs were presented by 21 local governments with responsibility for agricultural policies at local level. This decentralisation, which in certain cases extends to sub-regional level with the

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2 Rural Development Plans are the means by which Community policies for rural development are put into practice at local level. The tool of the RDP was introduced by Regulation CE 1257/99, and is a planning document drawn up by the Regional governments. The Plans are organised along axes of prioritised intervention; on finalisation they are sent to the Commission and promulgated by means of a Decision. Rural development is the development of rural areas defined by the OECD as having a population density not exceeding 150 inhabitants per Km².

3 The Common Agricultural Policy (CAP) is one of the competences shared between the EU and its Member States. Set up by article 33 of the EU constituting treaty, its scope is to ensure European consumers reasonable prices, a fair remuneration to farmers, above all by a common organisation of agricultural markets and conformity with the principles enshrined by the 1958 Conference of Stresa concerning uniformity of prices, financial solidarity and EU preference. At present, all Member States contribute a percentage of their GDP to the annual EU budget as part of the so-called own resources. Approximately half of this figures goes to finance the CAP.
Provinces preparing the local Development Plans, has allowed each region, in theory at least, to tailor the RDPs to better fit their own territorial specificities. Decentralising agricultural policies plays a very important role in safeguarding agricultural biodiversity as we shall see. Furthermore, an analysis of this expenditure is highly significant because responsibility for implementing the Treaty in Italy lies with the Regions. Consequently, if their investment in the RDP is different, the extent to which they achieve the objectives of the Treaty will be (Bertacchini, 2009). RDPs can therefore be seen as additional financial tools provided by the CAP to facilitate implementation of the Treaty.

The overall resources that the Regions have freed up for the whole 2007-13 period amount to 16,726 million euros which come from the European Fund for Regional Development (EFRD) and national and regional co-funding. Graph 1 compares the difference in the amounts allocated in the Regions for each single axis expressed as percentages. Those from the north, with better organised agriculture, invested more in axis 2 (Italian average 42%), while the Regions of Italy where agriculture is more marginal but rich in agri-biodiversity order to use their resources for axis 1.

An analysis of the expenditure of Axis 2, shows that in most Regions (11 out of 16), the resources are concentrated in measure 214 on the total public expenditure. Expenditure allocated to agri-environment issues range from 32% of the Autonomous Province of Bolzano to 7% in Liguria (Graph 2). Note that most of these resources were incentives to organic farming and so can be considered as an indirect incentive to conserving agricultural biodiversity.

More in detail, aid earmarked for safeguarding agrobiodiversity contemplate two specific aspects:

1. Raising breeds of local importance at risk of genetic erosion;
2. Cultivation and multiplication of local varieties at risk of genetic erosion.

As can also be seen from table 4, 19 Regions/Autonomous Provinces (excluding Abruzzo and Molise) embarked on at least one of the two initiatives which reflects the degree of interest shown by the single regions for these forms of support. No fewer than 17 Regions tendered bids for raising breeds of autochthonous livestock.

<table>
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<th>% Axis 2 of the total RDP</th>
<th>% Measure 214 of axis 2</th>
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Tab. 1: The number of agri-environmental measures in Italy (Source: Fugaro, 2008).

Graph 1 – Overall public expenditure per axis.
Source: data processed by this author based on the “Rural Development Plans 2007-2013” of the Regions
while only 13 included specific initiatives for growing plant genetic resources. Only 11 Regions contemplated initiatives for both.

Aid was given to the following subjects:

1. Individual or associated breeders and farmers who commit themselves to in situ raising the pure bred animals for which aid is given, or maintain, or increase the consistency of the local breeds registered. The amount of aid ranges from a minimum of 80 to a maximum of 500 €/LU (Livestock Unit)\(^4\), depending on species and breed.

2. Individual or associated farmers who commit themselves for a period of not less than 5 years to grow, conserve, reproduce or increase the consistency of plant genetic resources (specified in the RDP or for varieties listed in the appropriate registers, or in voluntary regional registers, see Annex) which are at risk of genetic erosion in the area of origin.

3. Public research bodies and botanic gardens for the upkeep, management and update of regional Repertoires (for the regions who possess them). Initiatives can include managing, putting into practice and monitoring the regional seed bank and the list of steward farmers; providing training, technical assistance ad teaching services, supervising the conservation and security network and verification of its state of functionality; carrying out local conservation and enhancement projects and re-introduction of varieties of local origin back into the territory; teaching, dissemination and training initiatives on the web. Here, the amount of aid is 100% of expenditure.

Obviously, the variety or breed eligible for aid must be listed in the regional registers. This is where the work by the regions, which have specific laws for protecting autochthonous genetic resources, encounters the Regional Development Plans. The regional repertoires, prepared pursuant to regional laws, are the lists of the varieties and breeds on which there is the right to a premium (Bertacchini, 2009).

The result is perfect harmony between a tool for regional planning and a European Union financial one. Should these repertoires be unavailable, the regions resort to what public research centres have produced on the issue.

\(\text{Graph 2 - Overall regional expenditure for measure 214 on the total public expenditure}\

\text{Source: Mipaaf data processed by this author based on the “Rural Development Plans 2007-2013”}.\n
\(^4\) Livestock Unit (LU): Bulls, cows and other bovines older than 2 years (1 LU), adult bovine aged between 6 months and 2 years (0.6 LU), sheep (0.15 LU), goats (0.15 LU).
Incentives for agricultural biodiversity: the role of Rural Development Plans

cconcerned. All RDPs contain a list of the species for animal resources which may apply for premiums. 17 breeds of horse, 26 of bovines, 42 of sheep, 27 of goats, 6 pig and 6 asinine (Fugaro, 2008). It is more complicated to develop a combined scenario of plant genetic resources because of the great many varieties listed in the regional registers (see Annex).

Note that certain regions (Basilicata, Emilia Romagna, Liguria, Puglia, Umbria, and Veneto) have broadened the area of simple direct aid for conserving agricultural biodiversity by including “supplemented territorial plans” among projects for funding. Emilia Romagna was the first region to begin moving in this direction seeking a higher profile in the dynamics of rural development, a strengthening of the identity of rural territories, an enhancement of their endogenous resources, and the creation of a more direct link between public bodies and the subject who attends to resource conservation. More in detail, these plans provide for specific initiatives for in situ and ex situ conservation, typifying, collecting and making use of autochthonous genetic resources of interest to agriculture, but also, and especially, agreed-on supplementary initiatives from promoting the culture of rural communities to providing information and dissemination about everything related to agrobiodiversity. Those carrying it out can also be organisations of civil society. The aim of the projects is to encourage formal and informal institutions to become involved in conserving biodiversity so that the conditions will arise for the heritage to become a real resource. This can take place, for example, by creating new markets or revitalising local circuits, setting up local cooperative ventures or other forms of associationism as a support for local producers, training teachers and farmers “combining” local breeds and varieties into forms of sustainable agriculture such as organic farming using the factor of quality as a tool for enhancing local crops.

Furthermore, some regions appointed two specific figures to benefit from initiatives, namely the steward farmer (Sicilia, Veneto) and the steward breeder (Veneto). These are farmers and breeders who carry out farming within the regional territory and act as custodians of biodiversity by using and conserving local genetic resources. Not to be forgotten is the Leader axis, by virtue, also, of the positive reaction forthcoming from the previous plans 2000-2006. The purpose of the Leader was to strengthen the links between agricultural policies and social and economic interests through a process of local governance, and by encouraging

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<td>P.A.Trento</td>
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<tr>
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Tab. 2 – Measures in support of plant varieties and/or animal breeds

Source: data processed by this author based on the Mipaaf data: “Rural Development Plans 2007-2013” of the Regions www.politicheagricole.it

43
synergies between divergent areas and a network of relationships able to promote new opportunities for farmers, the public, local craftsmen and the territory. The results have contributed directly, but especially indirectly, to developing initiatives for safeguarding animal and plant biodiversity. Indeed, by enhancing typical local produce through involvement of the whole community, there has been an overall, integrated improvement of local resources which included the plant and/or animal biological diversity being protected and enhanced. In Italy, the Leader project has been widely used to ascertain local varieties and breeds still being kept up by farmers. The surveys were carried out by local authorities in close cooperation with public research centres. These proved essential for mapping the agricultural diversity in the field. Just how important the Leader axis is in revitalising rural areas can be seen in the case of the Cerere project in the Gran Sasso and Monti della Laga national park in the Abruzzo region (see Bocci in this issue). Despite the RDP not providing specific initiatives in measure 214 for the protection of agricultural biodiversity, the Cerere project which was also funded by Leader, enabled a local survey to be carried out and a network of steward farmers to be set up together with the accompanying incentives (Agro Biodiversità, 2008).

On examining the 2007-13 plan implemented by the regions, the first thought that comes to mind is that local government is always interested in incentives of this kind. Agri-environment payments under regulation 2078 of 1992 including specific measures for those wishing to cultivate ancient plant varieties or breeds of animal only began in 1997 and only in 4 Regions, namely Friuli, Toscana, the Province of Bolzano and Umbria. In actual fact, Toscana had the lion’s share with 127 applications and 500 thousand euros expenditure and was the Region in Italy that invested most in conserving autochthonous genetic resources. Even Spelt from Garfagnana and the Zolfino bean which were initially included in regional lists because of their risk of erosion were subsequently removed because the danger no longer exists. It must be said, however, that the merit of this success did not lie in the CAP alone or in the direct aid but was also due to the rebirth of a niche market for them (Marino, 2001). The fact that today almost every Region tenders bids for aid for activities of this kind shows a renewal of interest and points to the role that these resource can play in rural development.

The effectiveness of these measures is also striking. As stated above and confirmed by several analyses on the ground, the instances of direct aid being a real driving force in conserving agricultural genetic resources were when they were part of a broader context that included many local actors. This is borne out by the study conducted by Prof. Riccardo Fortina of the Department of Animal Husbandry of the University of Turin on the “Mora Romagnola” (a breed of pig from Romagna) and the “Sempione” (a goat from Piemonte), genetically autochthonous breeds which were in danger of extinction, and which were both saved through initiatives funded by the Emilia Romagna and Piemonte Regions respectively (within the support measures provided for by the RDPs). While the “Mora Romagnola” population has grown from the 10 heads in 1997 to today’s 600 thanks to a joint effort on the part of institutions (Region, university, research centre), breeders, transformers and agritourism, the outcome of the Sempione goat project has been less successful. The population of 30 has not changed over the
last 25 years and the main causes include a lack of synergy between the institutions and breeders, the latter being unaware of or not knowing how to apply the proper means of safeguarding the breed. Especially, though, differently from the Mora Romagnola, there lacked a focused aim of safeguarding the breed which in addition to conserving the germplasm saw this breed playing an economic or environmental part present or future or having an historic or cultural worth.

RDPs in relation to Article 6 of the Treaty
The CAP and RDPs in particular are the most important tools by which the European Union pursues the objectives within agriculture’s new role in society. The sustainable use of genetic resources is one of the new priorities as stated also in the European Action Plan for Agricultural Biodiversity. The recent Intermediate Evaluation of Implementation of the Community Action Plan on Biodiversity is explicit; in the chapter on biodiversity in the countryside it suggests making other funding available for rural development for safeguarding biodiversity by shifting resources from the first to the second pillar of the CAP (European Commission, 2008). In point of fact, measure 214 of the RDP is perfectly in line with Article 6 (2) (a) of the Treaty where the measures favouring the sustainable use of genetic resources include proper agricultural policies that promote the development and maintenance of diversified farming systems. Contributions to encourage conversion to integrated agriculture, and even more to organic agriculture are also clearly moving in this direction. Note that this clause of the Treaty goes well beyond the conservation of single genetic resources but views the agricultural system from a holistic, eco-systemic approach that also includes natural diversity. This, then, places the other initiatives provided by measure 214 into their proper perspective; despite no longer being specifically in support of an agricultural model that makes more use of agricultural biodiversity, they still promote land use by grass cover, conversion of arable land to grassland and environmental improvement and landscape conservation.

The initiatives of measure 214 specifically for protecting local varieties and breeds at risk of genetic erosion appear as another of the measures indicated in Article 6. Here, the relevant clauses are (2) (e) on promoting the use of local varieties and varieties adapted to local conditions and (2) (f) on the in-farm management and conservation of genetic resources. Indeed, the Italian system shows how the list of varieties and breeds accepted for contributions within RDPs include a series of local genetic resources which are the result of localised adaptation to different surroundings and cultures. Providing incentives for the conservation of these varieties is the primary objectives that Regions have set themselves.

This link between specific measures of the RDPs and the Treaty is confirmed by the work of research and enhancement begun by the Regions which is also funded by the same measures. Indeed, in a wider perspective, in pursuing the objective of sustainability in agricultural biodiversity, the Treaty recognises the importance of the contractual parties activating programmes of conservation, research, development and enhancement. That

5 Thanks to Dr. F. Perri of the Development service of the agriculture and food system of the Department of Agriculture of the Emilia Romagna Region and also to Prof. R. Fortina of the Department of Animal Husbandry of the University of Turin – RARE, Association of Autochthonous Breeds at Risk of Extinction for giving useful comments and information.
every Region in Italy has envisaged funding for these initiatives for research centres and botanical gardens, or that some have included “integrated territorial projects” in their initiatives to be financed is a clear sign of the role that rural development policies can play in implementing the Treaty, and become increasingly important territorial as opposed to sectorial tools.

Conclusions
These last ten years have seen a heightened awareness both in Europe and in Italy of rural development issues. Within this process the farmer has taken on a new role in society, not merely a producer of food products but also of services, and especially of the conservation and sustainable use of biodiversity.

In many cases, however, agricultural biodiversity is still seen as a side issue of agricultural and production policies in which agriculture should firstly be brought up to date and then some thought be turned to environmental issues. This interpretation of direct forms of aid for conservation carries the risk of the effectiveness being closely linked to the duration of the inventive received. To achieve the desired results, by contrast, the aid = conservation of biodiversity equation needs to be included in well-defined local strategies and policies which take other factors into consideration.

It is assuredly not easy to identify the best means for safeguarding and enhancing biodiversity, but identifying it as a resource is assuredly a major step at institutional level (Cannata and Marino, 2000). Local varieties and breeds should be seen as a resource for farmers to make direct use of (Cleveland, 1994), providing incentives for their cultivation and use more than for conservation and linking their produce to the territory. This in turn highlights the relationship between local culture and local varieties and breeds synthesised in traditional foodstuffs rediscovered and enhanced.

As we have pointed out, in a country like Italy, enhancement of biodiversity underpins many rural development policies in which agricultural production maintains its link with the territory and its culture of origin, giving them worth (Negri and Veronesi, 2000).

Bibliography


Cleveland D.A., Soleri D., Smith E.S., 1994, Do folk crop varieties have a role in sustainable agriculture?, BioScience, Vol. 44, No. 11.


regione Abruzzo: un patrimonio da valorizzare, ARSSA.


Fugaro A., 2008. La nuova politica di sviluppo rurale 2007-2013 - Una politica per l'agricoltura, una politica per il territorio, Roma.

Kettunen M., 2008. The EU budget and biodiversity, Institute for European Environmental Policy.

Marino D., 2001. Le politiche e le strategie a livello internazionale e nazionale per la salvaguardia e la valorizzazione della biodiversità, collana “Biodiversità” Università degli Studi del Molise.


Sites of reference
Rural Agriculture and Development - EUROPA
http://ec.europa.eu/agriculture/index_it.htm

Bioversity International
http://www.bioversityinternational.org/

Food and Agriculture Organization of the United Nations
http://www.fao.org/
White Sperlonga Celery – a new local variety

Riccardo Bocci

“Tradition is the expression of continuity in time not the conservation of the past – its meaning is the opportunity of innovation in continuity”

(Angelini, 2008)

Introduction

White Sperlonga Celery is a local variety grown in the Province of Latina in the Region of Lazio, one of the areas of Italy with a vocation for vegetable growing. Its story, and the recent research that the Regional Body for Development and Innovation (ARSIAL) carried out on this variety are important for understanding the connection between a variety and the area it is grown in and how this relationship is not unchangeable but evolves over time. Indeed this celery today is an authentic local variety, despite being completely absent from farmers’ fields in the late ‘50s. Conservation and selection of Sperlonga Celery by farmers began with the market interest that the variety had and continues to have thanks to its special taste and smell properties. In 2003, producers who grew it launched, with the help of ARSIAL, the procedure for recognising it at European level as an PGI product (Protected Geographic Indication), while contemporarily the celery was included in the regional register of the local varieties of Lazio. All this makes it an excellent case study to verify the correspondence between geographical indication and protection of agriobiodiversity within the perspective of sustainable use of genetic resources over time. Moreover, ARSIAL studies on the phenotypic characterisation of the celery and on the seed system which lie at the basis of its cultivation, enable us to understand how the informal seed system works in an industrialised country and the importance it can have. We use the term “informal” because the White Celery is not registered in the Catalogue of Varieties of Vegetable Species and so, according to seed regulations, its seed should not be marketed.

How the variety developed

White Sperlonga Celery (Apium graveolens L.) has white or whitish stalks which are its qualifying characteristic. It is of average size and compact shape with 10-15 light green leaves. Its flavour is sweet and only slightly aromatic which makes it highly suitable to be eaten fresh (Paoletti et al., 2005).

It was introduced to the area in the early ‘60s by a farmer who transplanted some white celery in his field that he had bought in the market in Rome, the seed of which reproduced itself year after year. In the plain of Sperlonga and Fondi, not far from the sea, the variety found earth markedly typical of an almost surface-level and highly saline water table – the so-called "Pantani" – a condition that gives it its present properties of smell and taste. However, the variety was beset by the problem of the early emission of the flowering stem. In the mid ’60s that same farmer imported some

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1 My thanks to the staff of ARSIAL who gave me access to thei archives and gave me of their time for in-depth talks on the topic, in particular Miria Catta, Pierfrancesco Nardi and Imma Barbagiovanni.

2 Three factors enable the White Celery to be so defined – selection on the part of the farmers, the broad genetic variability and being known and kept up by a local community (Falcinelli and Lorenzetti, 2008).
seeds of the Dorato d’Asti variety that had more resistance to this problem, and began to grow it alongside the variety introduced some years earlier. The introgression of this new property into the white celery population spread it much more widely throughout the area. Historic documents from 1914 mention several farmers in the plain of the river Tanaro in Piemonte growing golden celery indicating that the Asti golden celery had been grown successfully since the early 20th Century. Today, the Dorato d’Asti variety is registered in the National Catalogue of Vegetables.

The selection made by farmers since the ’60s has created a local variety – the White Sperlonga Celery – grown today on some 40-50 hectares in the plain compared to the 90-100 hectares given over to commercial varieties like Golden Boy. There are some sixty farmers involved in two cooperatives (La Flacca and San Leo) through whom the product is marketed in Italy and also abroad in Belgium and Germany. The farms are small to medium – between 1 to 3 hectares – and by and large the celery is grown protected and farming is intensive. Sowing the White Celery is staggered from end November till end January so as to be harvested between end April and end July.

**Seed production**

Preliminary research on the ground carried out by ARSIAL with the support of the National Elected Seed Body (ENSE) identified five populations belonging to the White Celery type which are maintained and reproduced each year by the same number of farmers. One farmer has a nursery and distributes the celery seedlings to the other farmers of the area for transplanting. There are an estimated sixty farmers involved in this seed supply mechanism (fig. 1). Note that the first experiments carried out comparing the 5 populations with certain commercial varieties indicated a vast genetic variability both between populations and within single populations. Indeed, this agrees with the White Celery seed system with in-farm seed reproduction being entrusted to a group of local farmers and is one of the reasons why this variety can be defined as local.

The experimental work carried out jointly by ARSIAL and ENSE was aimed at firstly identifying the variants to define their properties, to describe the variability present and arrive at identify appropriate descriptors.

Reproducing the White Celery seed is not easy and is done with great care by a

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3 The study of the variety’s history was carried out by ARSIAL through interviews with farmers and by analysing the farms’ taxation documents.

4 Today, 30 years after its establishment, the Flacca cooperative counts 70 farms of the Sperlonga Fondi plain who till approximately 100 hectares under glass with an average yearly marketed production of some 110 thousand quintals and a production capacity of 150 thousand quintals.
limited number of farmers. Interviews with them revealed that not only do they carry out the phenotypic selection of the seed-bearing plant (i.e. obtain seed from the best plants), planted in specially protected hidden places, isolated to prevent contamination from nearby celery plants, but they also follow traditional practices, such as, for example sowing at high tide.

The farmers conserve the seeds jealously and distribute them in following certain customary rules and practices. Indeed the researcher who was conducting the study had to overcome the initial mistrust of the farmers to understand how the seeds were circulated and left to carry out the experimental trials with only 30-40 seeds given to him by a farmer only after he had gained his trust.

Between Conservation and Valorization

In 2003, the White Celery was included in the Regional Voluntary Register (RVR) of the autochthonous genetic resources at risk of erosion as provided by Regional Law No 15 (Bertacchini, 2009), and that same year the procedure was begun to obtain recognition of the status of Protected Geographical Indication (PGI) from the European Union. The documentation was sent in 2005 to the E.U. and in 2008 The Ministry of Agriculture, Food and Forestry (MiPAAF) granted nation-wide transitory protection for the denomination of “White Sperlonga Celery” pending European PGI registration. The choice of PGI as a means of protection instead of PDO (Protected Designation of Origin) stems from the Agency’s view that PDO is more suited to processed products as opposed to fresh vegetable produce. In fact the regulations devised for the White Celery require all production phases to be completed within the territory hence it could easily have been considered a PDO to all intents and purposes⁵.

Inclusion in the RVR, and PGI recognition are presently underway at the same time and were implemented by two separate departments of ARSIAL, and it is interesting to note the points of convergence and criticality. Indeed, while

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⁵ The idea of PDO is to protect a unique product which is non-reproducible elsewhere whereas PGI is based on the reputation of the product and does not imply that the raw materials necessarily come from the specific area that the PGI refers to. For a discussion on the implications of PDO and PGI see Bérard and Marchenay (2004).
RVR inclusion – the former – has the objective of conserving a genetic resource, the latter has a more commercial significance and aims to protect the product on the market by safeguarding its name; applying a geographical indication does not always lead directly to the conservation of a genetic resource. These two objectives are assessed on the basis of the regulations that discipline any link between conserving the genetic resource and its commercial exploitation (Bérard and Marchenay, 2008). A delicate equilibrium is being maintained for White Celery between the need to adequately describe and typify the variety for it to be registered as PGI against the importance of maintaining the genetic variability of the various populations. The danger lies in an excessive standardisation of the variety with a description which would unify all the diversities under a single type. This is why ARSIAL is moving towards using the numbered intervals of the parameters used to identify White Celery from the other varieties and the results of experimentation with ENSE, so as to encompass the broadest possible variability of the population. A further central aspect of the regulation of PGI production is the origin and production of the seed. Indeed it states that the seeds used by the single local farms involved in production must be those included in the Voluntary Regional Register. This is the direct link between the norms for conservation of agricultural biodiversity and the enhancement of the name of the variety on the market. Without a detailed indication on this, any attempt at regulation risks protecting only the geographical indication and losing sight of the genetic resource that it is based on. As Bérard and Marchenay remark “the question of plant varieties and seeds is pivotal to vegetable production in geographical indications and has never been more topical than it is today. The following points deserve particular attention: the strict identification and description of varietal types, their diversity and local growing methods, the link between the preservation of varietal diversity and the selection and maintenance of varieties, and the multiplication and production of seeds” (Bérard and Marchenay, 2008). The requirement for inclusion of the seed in the RVR has been noted by the E.U. who has asked for information and explanations on what this register actually is. As we have noted, White Celery is not in the vegetable catalogue and as far as the European Union is concerned there are no other registers or catalogues for seeds, hence the request for clarification. It is, however, true that maintaining a certain genetic variability is incompatible with the present norms that regulate seeds. As we shall see under, one possibility might be opening up with conservation varieties.

One of the results that emerged from this case is a painstaking intervention in the territory to identify what is to be regulated. The earliest studies carried out towards recognising PGI had resulted in writings on the proposal to regulate that all farms should reproduce the seeds in farm. It was only later investigation, carried out to characterise the variety in order for it to be included in the RVR that brought to light the nursery and the complexity of the system illustrated in fig. 1. Failing to understand how the seed is produced, who produces it and how it circulates among farmers contributes to erasing all the diversity constructed locally which is in fact the basis of the product. Aware of this the people in ARSIAL amended the regulations in accordance with the actual situation.

Another interesting aspect of IGP is the collective dynamics that come into play in...
the territory (Fournier, 2008). Indeed in order to prepare the documentation, the two cooperatives set up the Association of Sperlonga White Celery Producers which appears as the party responsible for the variety in the Voluntary Regional Register. Moreover the Association, or the Consortium it may develop into, must also monitor production control and observance of the regulations provided by the system of geographical indication.

Lastly, it should be remembered that White Celery has been registered on the list of varieties at risk of genetic erosion which public funding can be applied for, for on farm conservation. This is measure 214 of the Lazio Region Rural Development Plan (Melozzi, 2009), the objective of which is to strengthen the link between conservation, production and enhancement of agricultural genetic resources, providing direct incentives for farmers to grow a particular variety. The risk of genetic erosion of the Celery has been estimated as being medium the risk factors being the small number of farmers who grow it (between 30 and 100) and because the variety is not in the national catalogue (ARSIAL, 2008).

Conclusions
As we have pointed out, the sustainable use of White Celery depends on the two factors of conservation and promotion initiated by the farmers supported by the public body. But what are the prospects for the future? What initiatives are possible in a seed context like this? We can conjecture certain hypotheses in accordance with recent developments in seed legislation.

One possibility is to register White Celery in the official vegetable catalogue in order to legalise the sale of the seed and create a subject responsible for the conservative selection of the variety. This however would cause strong indirect impact on the variability of the variety. The norms for registration (distinctness, uniformity and stability) would exclude all but one varietal type from among the various populations, which in turn would further reduce the diversity still cultivated by the farmers today. This alternative would certainly make it easier for the product to be certified as PGI and it would also simplify the system of control but in the end it would cause a genetic erosion of the variety...

The alternative could be to register the variety in the Italian Catalogue of conservation varieties (Bocci, 2009), given that the Celery has all the properties entitling it to do so: seed cultivation and production in a well-defined area, link between the territory and the variety and risk of genetic erosion. Note that while EU Directive 62/2008 on conservation varieties was only for agricultural plants, Italy established a national catalogue in 2008 for varieties of all cultivated species to be conserved. Being in this catalogue, furthermore, would not clash with being in that of the RVRs as was the case with the previous alternative – quite the contrary it would be necessary in order to obtain the

![Diagram](image-url)
In this way there would be an ad hoc tool for protecting biodiversity – the regional register – with adequate seed regulation that would allow the sale of reproductive material. The protection afforded by PGI would guarantee achieving the final aim of the whole system combining conservation and development. In the light of this, sustainable use of the White Sperlonga Celery – continuation of its diversity – depends on whether certain policies and legislation adapt to the situation, the aim being to foster local initiatives implemented by farmers and the construction of rural development based on the enhancement of a particular genetic resource. The public body has an important part to play especially at local level to ease the whole procedure, whether carrying out the studies needed to understand and characterise the variety, or launching promotional initiatives or highlighting the needs and specificity of the territory in order to liaise at local level with the global framework in particular as regards Italian or European norms and legislation.

Bibliography


Falcinelli M., Lorenzetti S., 2008. Le varietà locali presenti in Italia e la loro salvaguardia per la difesa della biodiversità nazionale, in Rete Interregionale per la Ricerca Agraria, Forestale, acquacoltura e pesca, Azioni di innovazione e ricerca a supporto del piano nazionale sementiero - PRIS2, Promovideo.
Marano Vicentino a corn variety in Veneto: the importance of being famous!

Riccardo Bocci

"Steeped in maize flour cooked in the cauldron. The maize from the countryside by Marano Vicentino [...], a town north east of Vicenza is of premium quality. It is milled into an excellent flour [...] the polenta made from it is delicious".

(Candiago, 1962)

Introduction

Maize is not native to Italy, yet it has known extensive diversification since its introduction here in the far off 16th Century, resulting in many local varieties being grown in the countryside in the early 20th Century. One of the Regions of Italy where this diversification has been most marked is Veneto. Indeed when the first systematic survey was conducted there in 1946, there were some 94 varieties grown of which only ten or so were hybrids, (Pino and Bertolini, 2003), catalogued on the basis of their precocity (Zapparoli, 1937). This meant that first harvest maize could be distinguished from that of second harvest, then further subdivided into Maggenghi, the most late and developed to be sown by May; Agostani, that should ripen by August, not so tall as Maggenghi, and earlier, with ears with fewer rows; Agostanelli, an earlier type of Agostani that the Marano Vicentino belongs to; Cinquantini, a first harvest variety; Brabantini considered second harvest despite being used for late sowing, a group between Spring and Summer corn; Cinquantini and Quarantini, hard to separate and normally called cinquantini in Veneto and quarantini in Lombardia; and Spring corn from Central-South Italy generally short-cycle varieties and short in height.

However, it would be misleading to think that this diversification came about by a process of haphazard selection on the part of the farmers of the time. Quite the opposite, as Gazzi wrote the natural tendency of the plant towards hybridization was also helped by the “explicit wish of the farmer to cross-breed to obtain maize with properties that were deemed excellent from a subjective standpoint rooted in country knowledge” (Gazzi, 2003). This tendency towards “confusion” as a scientific analysis of this system might have defined it, was reflected in the names given to the varieties. “The sub-varieties that developed were given now the name of one and now of the other which made them fairly generic” (Gazzi, 2003). The broad range of local varieties derived from the variety of uses of the corn (for human and animal consumption, with a further diversification for farmyard animals); the same farm would grown late and early varieties together also depending on how they could fit with the other crops.

The story of the Marano variety is typical of this process. Produced by a farmer in the late 1800s it spread rapidly thanks to the quality of the polenta it made which is why it is still grown today despite the subsequent emergence of hybrid varieties. Marano maize, in particular, lives up to the importance of its name, its history and the notoriety of a variety. It is no coincidence that in the period between the First and the Second World Wars, so the story goes, the classic answer that people of Marano got was “You’re from Marano? The corn place?” All this still has a marketing

1 My thanks to Drs. Silvio Pino and Giandomenico Cortiana for giving of their precious time and for the valuable information on the history of Marano.
relevance today as witness the attempts of third parties described under to get a hold of the name.

The agricultural and social landscape of Veneto of today has changed a lot. Monocropping hybrid maize dominates the plain with some 310,000 hectares planted which, in 2007, produced approximately 2.76 million tons with an average yield of about 8 tons per hectare. However, the open pollinated variety are still a small productive niche of 80-90 hectares concentrated in the foothills. Indeed it the “rediscovery” of varieties like Marano or Biancoperla that has led to new models of agricultural development that seek to combine tradition and modernity, enabling farmers in marginal areas to continue to live from their land.

This history of Marano

Marano is a variety of early maize, comparable to a FAO 300 hybrid. It is not tall and in general the one plant produces more than one ear. The seed is vitreous, small and rich in carotene and xanthophylls, and yield normally varies between 2 and 4 tons per hectare.

Its history was begun around 1890 in the town of the same name by a local farmer, Antonio Fioretti, who took an initiative that was described thus by Prof Zapparoli in 1939:

Towards 1890 a farmer of Marano Vicentino, Antonio Fioretti crossed the local Nostrano (early maize, low height, mediocre production capacity, the cob short, conical, and not highly coloured, with a low grain yield – in short an early harvest cinquantino) with a Pignoletto d’oro from Rettorgole di Caldogno, the typical area for this variety, a higher plant, later, much more coloured than the former, indeed almost red, vitreous. The pollinator was the Nostrano. The product of the cross appeared the following year and was sowed on the Fioretti farm and so on in successive years with no further crossing [...]. Since the product of the cross was immediately seen to be of

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2 The Associazione Conservatori Mais Biancoperla was established to promote the Biancoperla variety. Its objectives are to enhance and promote Biancoperla maize and organize an efficient chain that guarantees product origin and authenticity.
an undoubtedly superior quality to the Nostrano variety but had only raised the somewhat low productivity of both maizes united in the new variety, Fioretti began a systematic mass selection the first year which he scrupulously continued in successive ones with the main aim of fixing if possible the properties and quality of the product and augment its fertility and productivity. [...] In so doing, Fioretti achieved an almost constant property of at least two complete ears on every plant while on the old local variety, the basis for the cross with the Pignoletto, the plants with two cobs are a very low percentage. In many cases, it is not infrequent for plants to have three, four or even more ears. The early ripening (first 10 days of September) and the thinness of the cob considerably reduce the percentage of waste and improves conservation and maturation of the cobs in storage. Originally, the cobs from Marano in a normal year were small, elongated longish narrow at the base almost cylindrical. When Antonio Fioretti died, the Marano variety was looked after by his sons up to 1934 when the experimental station of maize cultivation of Bergamo stepped in jointly with the provincial inspectorate of agriculture of Vicenza to manage the mass selection and monitor production in a typical area. The oldest inhabitants recall that in the whole north eastern part of Marano near the Fioretti house were only allowed to sow Marano corn and no other to prevent pollination and hybridization by other varieties. The Fioretti house was the centre of the seed selection which also involved eliminating the end parts – top and tail – of the cob. The marketable part was entrusted to the Cooperative Agricultural Consortium of Vicenza. In 1940 Marano corn was given the government State stamp and cultivated in large parts of northern Italy and became one of the most adopted varieties. By 1950 it covered 40,000 hectares, 16.3% of the total area given over to maize in Veneto and Friuli Venezia Giulia. In 1970 Marano corn flour was priced higher on the Vicenza commodity market. Its progressive disappearance from the countryside is not a direct consequence of

The leaflet with the history of Marano.
the onset of hybrids with which quality-wise, there is no comparison but to changes in diet and the gradual fall in polenta consumption. Growing corn for animal consumption alone made Marano no longer competitive – its taste and smell were no longer important (flour with a higher protein and fat content, bright yellow colour with typical flecks of chestnut brown, and the unmistakable, extremely pleasant flavour). Hybrid penetration in Veneto was slow – farmers were reluctant to accept them because of their low quality for making polenta. The first hybrids distributed in Italy were extremely dent and unpopular as food for humans which, in the years after World War I, was what more than 50% of the corn harvest was used for. Indeed hybrid varieties only began to become affirmed when corn usage changed with its industrial specialisation.

It was precisely in order to maintain the positive properties of Marano Vicentino, that there was great effort put into generic improvement to create hybrids starting from vitreous Italian material. In 1949, Insubria 2201 became the first hybrid that took its properties from Nostrano, Isola, Marano and Scagliolo with the properties taken from Nostrano acting as seed-carrier.. Some of the lines used to create these hybrids are still in use in programmes of genetic improvement for the production of early cycle vitreous hybrids.

The protection consortium

The Consortium for the Protection of Marano Maize (http://www.maismarano.it) was set up in 1999 in Schio on an initiative launched by the “Nazareno Strampelli” Institute of Agrarian Genetics and Experimentation of Lonigo (IGSA) also with the involvement of farmers, technicians and restaurant owners. The drive to create a protection consortium emerged when a maize with similar characteristics of Marano was registered in the varietal catalogue a few years earlier under the name Orgiano. In order therefore to protect the name “Marano” and the variety it was decided to establish an ad hoc association to identify the production areas between the Val Leogra and the stretch of foothills of the province of Vicenza. Shortly after a hybrid variety named Maranello was registered.

And so this variety, now called “Marano Vicentino”, was given a new lease of life.

The task of recovering the variety was conducted by IGSA beginning with material conserved in its seed bank and comparing that with the varieties still being grown by farmers. Indeed, Marano had not altogether disappeared from the fields nor from the memory of the people, And these farmers who were mostly elderly had kept the tradition of the Marano going without a break. Growing the old variety of corn had never been abandoned in small multicrop farms where the ritual of polenta was still observed. In many cases, the continuation of these niches of production had been made possible by a network of traditional millers who were willing to mill even small quantities of grain into flour. (Gazzi, 2003).

Today, the Consortium farmers number 25 of whom 5 practise organic farming. Maize

3 Note that in the country “marano”, “maranello” and “maranino” were all used for the same varietal typology.
grain is milled at a large mill in Isola Vicentina which attends to drying, milling and storing taking care to prevent mycotoxins contamination. The flour is marketed directly by some farms who have direct sales facilities and also at the Valleogra Cantina Sociale (Winemakers’ Cooperative) in Malo, where there is a collective outlet point and a farmers’ market every Saturday. The flour is sold in 1-kg boxes or bags with both types of packaging bearing the unmistakeable logo of Marano Vicentino corn.

The Consortium is particularly attentive when it comes to seed production. Selection, which has the objective of conserving the purity of the variety, is done in upland areas and reproduction for multiplication takes place in a farm of the Province, again in an upland area. This approach reduces the risk of genetic contamination which could very simply occur by crossing with other varieties of corn grown in the vicinity. Managing the seed production collectively means maintaining it through time and keeping the know-how associated with it local.

The Consortium’s website states "maize is one of the countless characteristic products of Italy and, as members of the consortium, we are fully aware of the importance of safeguarding this variety both for the taste and smell properties and the flavour of the flour produced as well as for our steadfast conviction that biodiversity is a value of fundamental importance. All this can provide interesting opportunities for local agriculture."

The battle for the name - *nomina nuda tenemus*

The history of Marano corn is characterised by a diversity of criss-cross legislation: seed legislation, trade protection and copyright, EU agricultural policies and their rural development plans and, lastly, the protection afforded by geographical indication. As we shall see there were many interests that came into play with the rediscovery and economic revaluation of Marano maize.

First and foremost, it should be said that the flour of Marano Vicentino is registered as a traditional agricultural food product (pursuant to Art. 8 of Legislative decree N° 173 of 30 April 1998) and so the flour marketed may boast this title.

The seed issues are rather more complex. The variety is registered in the official
catalogue of 2001 with the name of Marano Vicentino, and the party responsible for the conservative selection is the Consortium itself. The seed may only be given to consortium members and is not traded publicly. As mentioned above, the decision to register in the catalogue was because in 1996 the Morando Bolognini Foundation had registered a hybrid variety of maize soon after named Maranello, which it applied for confirmation of in 2007, and in 1998 was registered an open pollinated variety named Orgiano but very close to Marano. In order to protect the name, the Consortium applied for registration in the catalogue instead of opting to be a conservation variety because Marano Vicentino is sufficiently uniform and stable and, above all to enjoy greater protection in trading the seed.

The importance of the name “Marano” and the interest it still arouses today in both farmers and consumers is confirmed by a recent application for registration by a new hybrid variety of maize called Marano 0501, marketed by Società Italiana Sementi (SIS). Neither Maranello nor this new Marano 0501 has anything in common with the original Marano, not even genetically. There are only a few physiological properties shared, but the economic power of the name is still a major factor and some seed companies are drawn towards exploiting it for their new varieties. In 2008, the Consortium wrote to the Ministry of Agriculture, Food and Forestry (MiPAAF) to request that the name Marano 0501 be rejected but in the light of Regulation CE, 930/2000 that disciplines the admissibility of varietal denominations the Ministry turned the Consortium’s request down since the four digits after the name make the name legitimate for registration any remove any confusion. This goes to show how the interest that links the name of local or ancient varieties with the ensuing commercial exploitation has been particularly significant in the instance of Marano corn.

The leaflet of the new Marano 0501, marketed by SIS.

The same issue of appropriation of the name on the seed market is also true for the product, namely corn flour to make polenta. Indeed the mill that mills for the

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4 The Foundation distributes the varieties of the Experimental Institute for Cereal Crops in a relationship with the seed industry both in Italy and abroad and maintains the purity of the varieties of soft wheat, barley, oats and maize and handles the production of basic seeds in its home farm. It also markets the seeds through its dealings with the seed industry for the multiplication of the varieties of the Experimental Institute for Cereal Crops, it sets up exclusivity agreements and receives royalty payments on the seeds multiplied.

5 On paper at least Italy’s catalogue of conservation varieties has been active since 2007 after Law 46/2007 came into force (Bocci, 2009).

6 Note that IGSA has prepared the request for other local varieties of maize like Biancoperla and Sponcio to be registered as varieties for conservation.
Consortium has registered the brand name of “maranello”, and sells flour under that name. Obviously this flour is not milled from Marano Vicentino, but as the label says “a vitreous maize exclusive to the Vicenza area”.

As a measure for protecting the name of “Marano” on the market, the Consortium is considering applying for Protected Origin Denomination (PDO) for the maize flour in order to strengthen the link between the name and a territory and to a specific variety.

Moreover, as away of showing its interest in enhancing Marano maize, the Veneto Region has registered it on the list of varieties at risk of erosion for the Region, for which funding can be obtained for cultivation pursuant to measure 214 of the Rural Development Plan (Melozzi, 2009). Here, though, the Region has indicated the whole of the Region as the production area which is contradictory to the stance taken by the Consortium.

Conclusions

The situation described here is still in flux but some preliminary consideration may be made as regards the following questions: What is meant by sustainable use of Marano Vicentino maize? What strategy can be adopted? And above all, how can commercial exploitation of the name be reconciled with the use of genetic resources to be “conserved”?

The first question, obviously regards historic and varietal continuity and thus by means of a territorial survey to reconstruct the system of uses, social relations and farming methods that made the variety important. Rediscovering the original variety and enhancing its use is the starting point for a process of local development.

There is another particularly determining factor, namely the collective side of the phenomenon, and how new local communities can grow around agricultural biodiversity. For Marano, the Consortium of producers has taken on the job of conserving the variety, but the legacy of Antonio Fioretti to the farmers of today emerges through an intermediary – the IGSA – which conserved the seed and fostered the process to recovery. A new local community has grown up around Marano corn of neither historic nor social determination but other associative bases that respond to the needs of farmers today. (Berson et al., 2008).

All this has allowed autonomy and control to be maintained at local level through the approach to seed management which can also guarantee quality by means of control in production.

Independently from these community/collective contexts, it is plain how enhancing a name and a local reputation is not just a question of the interests of the area of origin or the genetic “raw material”. The series of commercial varieties registered with a name similar to Marano and the copyright on the flour obtained by the mill on the flour are ample testimony.

In conclusion, the sustainability of use of genetic resources can depend directly on the extent to which local actors, public and private are involved and the collective dynamics that occur.

Yet again, the confines of our agriculture are determined by culture and tradition with an importance which economically is substantial in western society. Understanding how to foster and support these processes, blending conservation with development in a single, non-speculative perspective is the challenge that our public policies must face in the near future with the objective of sustainable use of agricultural genetic resources.
Bibliography


Zapparoli T.V., Il granoturco, REDA, 1937.

The “Quarantina white” in Liguria: a potato as a key to rural development

Maria Francesca Nonne

“The land is kept alive by the fruitful work of those who live on it much more than a raft of territorial recovery programmes will ever do.... Produce is not made alive by the land – quite the opposite – because where farmers don’t work the land there is only abandonment and dereliction as well as loss of diversity!” (Angelini, 2008)

Introduction

The process of recovery and revaluation of the Quarantina1 potato, a variety that is local to the Ligurian Apennines near Genoa is significant for a number of reasons. It is a means for understanding the role that a variety can play in keeping local farming methods alive; it is a means for declining the concept of sustainable use of plant genetic resources for food and agriculture (PGRFA) as part of the unstable equilibrium between conservation and enhancement, and a means for analysing the concept of tradition and how it can be renewed within the context of the present day. Furthermore, it has become a classic example in Italy of how, notwithstanding its focus on the Quarantina white, it has pointed the way to the conservation of many other varieties in the territory which were are risk of extinction.

In order to understand the importance of this case, a brief description of the agriculture it became part of is in order. Liguria is a prevalently mountainous Region of Italy that stretches along the seacoast. Its agricultural landscape is typified by the Cinque Terre with terracing reminiscent of rice cultivation in south east Asia. The latest farming census of 2000 indicated a drop in the number of farms between 1990 and 2000 (-39.7%) and an even sharper fall in total farmed land (-46.1%). There was a loss of some 30,000 hectares, corresponding to 32.3% of the total of useful agricultural surface (UAS). Average farm surfaces saw some slight changes, from 1.32 to 1.46 hectares of UAS and from 4.58 to 4.09 hectares of total surface. As regards farm management, it emerged that almost all the farms – 95.7% - are family-run. The biggest drop in the 1990-2000 period was in mixed-labour farms (family and extra-family), minus 61.1%, and those run along strictly economy-oriented lines that make use of wage labour or resort exclusively to outside contractors, less 73.4%. This general trend has been constant over recent years but by contrast the Regional Statistics Yearbook reports almost 50% fewer farms between 2000 and 2005 (from just over 43,000 to approximately 23,000) and farmed surface, still falling from some 62,000 hectares in 2000 to little over 49,000 in 2005). Farmed land is giving way to forestry in a territory characterised by small or very small postage-stamp plots of land worked by an increasingly elderly population of smallholders. Indeed, in 2000, only 5.3% of farmers in Liguria were under 35 years of age while the over-55 age group was 67.2%. Moreover, in terms of added value, Ligurian farmers have suffered all the consequences of modernisation (Van der Ploeg, 2008), with absolute production remaining constant but with a substantial increase in intermediate costs (+20% between 2002-2007).

The story of the Quarantina, therefore, began in a social context where farming was economically marginal compared to other areas of production, and was carried out by elderly people on small plots of

1 The adjective “quarantina” is used for vegetables and cereals that have a short cycle suitable for growing in hilly areas.
The disappearance of farmers and with them the knowledge and varieties that they grew until yesterday is typical of Ligurian agriculture.

**Rediscovering the Quarantina potato**

The Quarantina white potato\(^2\) is a traditional variety local to the Ligurian Apennines and is attested in historical sources of the 19th Century. The area in which it is recorded as being most popular coincides perfectly with that in which Genoese dialect is spoken, inland towards Piedmont. In addition to language, this area also shares culinary and folklore traditions. As early as 1880, the Quarantina white was widespread in the Genoa hinterland and neighbouring valleys (valle Fontanabuona, val d’Aveto, upper valle Scrivia, valle Stura, Marcarolo plateau, upper val Trebbia, upper val Borbera and the areas of Sélvola and Santa Maria del Taro); between 1930 and 1970 it was the best known variety in the area of Genoa (Angelini, 2008). Genetically, the Quarantina white is a mutation of the Quarantina Prugnona (a local plum-coloured variety of potato which is less genetically stable than the Quarantina white), and its properties are similar to those of the Breton Institut de Beauvais, and the Bufet Blanco of Catalonia.

Territorial research was begun in 1985 by the rural historian Massimo Angelini and his investigation into the rural population when he heard of a potato that was *bona da matti* [buona da matti – absolutely wonderful] which was widespread mostly in the Ligurian Apennines prior to the arrival of the *Tonda di Berlino* (Böhms early yellow), the *Bintje* and the *Majestic* and the other Dutch varieties that are now filling the market (Angelini, 2001).

Angelini continued his research over 1985-6 in the Stura, Graveglia and Aveto valleys to ascertain what had become of that variety and discovered that the potato commonly known as “Quarantina”, had been the most widespread up to the 1950s when it was supplanted by more productive French, Canadian and Dutch varieties. By 1985 there were only some 40 producers with a few kilos of Quarantina for personal consumption. Eleven years later, the number of producers still planting this variety had been halved and they were all very elderly.

This situation, in turn, led Angelini to resume his research which in 1998-9 focused exclusively on the local varieties of Cannelina Nera, Prugnona and Quarantina white.

“I walked around for a couple of winters with three potatoes in my pocket: a black Cannelina, a Prugnona and a Quarantina white [...]. I went to see farmers who had been through the last war asking about local varieties of potato [...]. Once the introductions had been got through and the initial mistrust and ritual courtesies were behind us, the names of the varieties slowly began to emerge, what they looked like, how they were planted and harvested [...]. I asked them to show me how they cut the tubers before planting, then I showed them how I would cut them and that physical gesture helped to get the ball rolling. Then, at the end, like a conjuring trick I pulled out my three potatoes [...] and if they recognised them I asked them what they were called” (Angelini, 2001).

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\(^2\) The potato has an irregular tuber round or round-oval, a smooth, light cream coloured skin and has a non-floury, fine granule flesh which is typically soft white in colour; its eyes are of average depth with light pink highlights which are more marked in young tubers. The sprout ranges from pink to light violet at the base with a white flower. Maturation is average and it keeps averagely well in storage. It belongs to the B culinary category (average consistency suitable for all uses) and is unsuitable for growth in heavy soil.
Information about the Quarantina white that came from interviewing groups or individuals, or from historic documents, regional dictionaries or agricultural journals from the early twentieth Century were collected systematically to identify its properties. From there, the local names began to emerge, the traditional growing methods including the choice of soil, the planting time, planting itself, husbandry, the harvesting methods and conservation and selection of the three local varieties of potato.

<table>
<thead>
<tr>
<th>Other names for the Quarantina white in common use in the Apennines</th>
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<tbody>
<tr>
<td>Quarantina [Quintin-a], Bianca di Torriglia</td>
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<tr>
<td>[Gianca di Turrigia], Bianca dagli occhi rossi [Gianca cui oegi rusci], Bianca</td>
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<td>[Gianca].</td>
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Revitalisation of a local system
Recovery of the Quarantina began by harvesting and selecting the few tubers still grown with the involvement of the farmers who wanted to grow it and foster its spread. The tubers underwent valuation by old farmers who were asked to pick out the one that was closest to the pre-war Quarantina white from all the others discovered in the territory. Once the choice of tubers was whittled down to “the one”, and its origin identified, the job of multiplying the potato began.

Interest in the Quarantina white began to grow and 1999 saw the set up of the Committee for the Recovery and Enhancement of the Varietal Heritage of the Potato of the Genoa Uplands (Co.Re.Pa), which by 2000 had grown to 100 members made up of bodies, associations, producers and restaurants. One of the aims of the Co.Re.Pa. was to establish an ad hoc Consortium for the Protection of the Genoa Quarantina white and the black Tigullio Cannellina (Angelini, 2008). The consortium was established in 2000 with the name of “Consorzio di tutela della Quarantina Bianca genovese e delle patate tradizionali della Montagna Genovese [Consortium for the Protection of the Genoa Quarantina white and the traditional potatoes of the Genoa Uplands]” with 20 farmers as active members.

The Consortium set itself some special rules. In addition to the usual classical ones for production, specific rules regulate production from the seeds onwards through the marketing strategies and the price applied every year. Furthermore, in order to foster internal democracy, a special “conciliation regulator” was appointed – a person outwith the organisation but acceptable to all the producers, with responsibility for solving conflicts and disputes among consortium partners. At the same time a scrupulous programme for production quality control was launched by consortium members in order to maintain the high quality standards shared by all. As of 2009, these common rules lay down:

1. The obligation to give notification of planting and harvesting, specifying the total quantity of potatoes divided by variety and typology;
2. Making an extremely rigorous selection of the typology of potato to be classified as grade A which must have no alterations of shape, and have no cuts, holes or disease. Grade B potatoes may have slight shape alterations as well as cut and hole marks;
3. The obligation to market grade A potatoes in 2 kg packs in consortium bags with Consortium labels;
4. The obligation for the label, to be filled in and signed by the producer, to indicate the method of production. This can be either organic or biodynamic when certified by the controlling body, self-certified if under the auspices of
the Consortium itself (with the obligation to notify the consortium of the fertilizers, manure and plant husbandry products used), or uncertified in all other cases.

Another important part of the Consortium’s brief is to reproduce the potatoes for sowing so as to improve their yield and eliminate plant health problems. While, as Angelini noted (2001), farmers in the past took no care in selecting the seed potato tubers or tuber pieces for reseeding the technical and scientific support provided today by the consortium has made production of seed potatoes fundamental and very different from that of potatoes for consumption. The Consortium has always been aided by an agronomist in its production of tubers for improvement aiming towards a progressive revitalisation of the variety. Presently, the seed tubers are grown above 800 metres whereas those for consumption are grown between 400 and 800 metres. Furthermore, technical checks and update meetings with farmers enable the Consortium to continue fostering the adoption of good practices for growing, discouraging the use of toxic or harmful substances (Angelini, 2008). In 2008 the Consortium experimented with producing the seed potatoes in Scotland with the Scottish Agricultural Science Agency in an effort to eliminate the viruses that could be passed on by the tuber, thus improving production. The preliminary results of this initiative, which took place in late 2008, were positive in production terms (+20%) but also brought about a slight change in the look of this potato: “some Quarantina whites turned out so elongated that they looked just like... Cannelline!” (Consortium newsletter N° 16, 2008). In general, from when the Consortium was set up, average yield has risen from 1:4 to 1:8, with peaks of 1:10, and per hectare production is now between 100 and 150 quintals.

The Consortium also promotes the culture and traditions of the Genoa area alongside, and as part of selling produce, by carefully studying marketing channels. Special care is addressed to ensuring participation by local restaurants and to the communication strategies adopted for the product by direct sales from the farmers or small retailers. Consortium produce is in fact distributed at local level where the direct relationship between producer, distributor and consumer serves to enrich the cultural value of the product. As written by Marsden et. al (2004) “exchanging or marketing a variety at local level is not merely an economic transaction but also a moment of awareness and cultural reproduction [...]. Producers and consumers see themselves in that variety which is a vehicle of identification of the territory in which it is produced”.

It should be noted that the Consortium has chosen to maintain an autonomous approach to development by not registering the Quarantina potato as a ‘denomination origin’ product nor adhering to other forms of certification and control that are not strictly of the Consortium itself. In point of fact, the Quarantina only appears in the regional register of traditional agricultural food products pursuant to Article 8 of Legislative Decree N° 173 of 30 April 1998.

The logo of the Consortium.

Over the years, the Consortium has kept its eye on the territory and has identified several more varieties of legumes and vegetables as well as the producers who have kept them going. Already in 2001, in
addition to the potato, some Consortium producers were growing other products local to the Genoa area including beets, onions, beans, shallots, squash and courgettes. Moreover, considering the potato in more general terms despite the famous Quarantina white being emblazoned in the Consortium’s logo, recovery initiatives are now also extended to other local varieties such as the Cabannese, Cannellina nera, Giana rionda, Morella and Prugnona.

The special attentiveness that the Consortium has dedicated to technical agronomical factors, production quality, internal and external communication and to marketing strategies has determined the success of the entire initiative as seen in the rise in the number of producers from 2000 to 2004 (see table 1). The average age of the farmers – 38 – is also striking by being considerably lower than that of most farmers in the Region. Furthermore, 52 restaurants and small retailers became affiliates of the Consortium in 2004 and have its logo on show in their public spaces.

In 2003, the Consortium for protection changed denomination and became “Consortium of the Quarantina”. This change is part of the Consortium’s new orientation to promoting family-run farming and the rural restoration of the Genoa uplands which also encompasses autochthonous breeds and is always in line with the concept of never separating conservation from economic goals. The proper equilibrium between conservation and gain has enabled production to be increased and produce deriving from these varieties and breeds to be disseminated. The Quarantina has thus become the symbol of a collective initiative that involves an entire territory.

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**Table 1:** The Consortium in numbers (Source: data processed by Angelini, 2008)

The Consortium took on association form on 29 October 2006 (“Consortium for the Quarantina. Association for land and rural culture”) opening up to a new associative membership and new sales methods such as solidarity-based purchasing groups (GAS), which are becoming places for the enhancement of local produce, and stimulation towards diversified farming. Allowing consumers and their family members to belong to the association is a way of recognising the active choice- and decision-making role played by consumers within the association and it also highlights the need to allow more discussion, dialogue and alliances between producers and consumers. Today, the association has a total of 316 members of which 56 are producers and 60 affiliates.

The territory is no longer confined to central Liguria but is opening up to the outside with a maturity of approach that increasingly focuses on the problems and points of view of family-run agriculture without excluding other realities and experiences while remaining steadfast to the objective of “protecting traditional breeds and varieties”, as said in the new Articles of Association. A case in point is the International Potato Exhibition organised in Torriglia in the province of Genoa in October 2008 for International Potato Year declared by the FAO. It featured no fewer than 672 varieties from
17 countries and was attended by some 2,000 visitors.

The Quarantina as an example of sustainable use of plant genetic resources
The promotion, development and continuation of diversified farming methods is closely tied in with local varieties and their sustainable use. The Ligurian Apennines are characteristically harsh mountain terrain and bringing farmers back to them and keeping them there is a guaranteed way of land upkeep and of improving the management of natural resources like land and water. In environmental terms, therefore, this exercise has led to the recovery of local genetic resources and farming methods and to improving them, and no less to the sustainable use of natural resources as specified in Article 6.2 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The recovery of several local varieties, their dissemination among farmers, who witnessed an increase in their technical know-how and which they replanted, grew and sold, increased the diversity of the agricultural eco-systems and also diversity in food.

The desire to construct an economy based on traditional varieties stems from the awareness that varieties cannot exist without some kind of economic framework. This is based on complementariness of use and conservation on the one hand and on the other that local traditional varieties are also a cultural product that cannot exist in the absence of a local gastronomic culture that makes use of them (Carrosio, 2005). To exist, these varieties have to evoke some kind of belonging and must contribute to reproducing a collective and individual identity (Douglas, 1996; Degli Esposti, 2004).

In this context, sustainability is not only to be seen in relation to agricultural biodiversity – rediscovered, cultivated and enhanced – but should become a concept that encompasses an entire local farming system which, in continual evolution, comes up against today’s world in its quest for a new modernity built on the foundations of tradition.

Conclusions
Notwithstanding its containment within a limited area, the experience of the Quarantina potato has had an extremely marked socio-cultural, economic and environmental impact. The experience gained with one local variety or a few of them has led to the discovery, recovery and enhancement of a wealth of agricultural and cultural values, and if tradition and innovation are supplemented with attentive marketing strategies, they can lead to the recovery of a cultural identity and, in the final analysis, of agricultural biodiversity.

The work carried out by the Consortium has shown that in rural territories deemed limited and marginal or backward, generally abandoned and depopulated, young farmers can make a living in agriculture, enhance their knowledge and establish new local partnerships in which institutions only provide support and cooperation in the initiatives. In short, it is
possible to reconstruct “tradition” giving the word its full meaning, namely continuity in time and a direct passage of knowledge from generation to generation. Over time, the Quarantina Consortium has been the driving force for development and promotion while also (and still) being a powerful means of communicating the technical, practical and political factors of agricultural biodiversity and local development.

If local development means enhancing local environmental, cultural and human etc., resources and shying away from interventions from on high, the case of the white Quarantina is an example to follow. Crucial to this example of bottom-up development was the union and interaction of a variety of skills – local traditional, technical-scientific and sociological-historic – which enabled the creation of a local network of producers, sellers and public/consumers which, today, is held to be one of the best organisational structures for guaranteeing long-term rural development.

Bibliography


Website of reference www.quarantina.it
Synergies between Natural Parks and agrobiodiversity: the example of the Abruzzo

Riccardo Bocci

“The challenge in this project lies in bringing back old varieties which have been conserved thanks to the tenacity and stubbornness of a few to become the new heritage of all”

Dalla Ragione et al. (2004)

Introduction

That sentence sums up the work presented in this case study very well – the recovery and revaluation of local varieties, transforming them into a tool for the development of a territory considered economically marginal and residual, and so restore them to the rural communities that had selected, produced and conserved them. The Regional Body for Services to Agricultural Development (ARSSA) and the Authorities of the two parks involved both played a major part in this process showing that it is important to get the institutions involved to ease the procedure at local level and mend the break between generations that had emerged in agriculture with modernisation.

The Abruzzo is a region rich in agricultural biodiversity, the result on the one hand of the heterogeneous conformation of its landscape, harsh and mountainous that creates a certain degree of isolation and on the other of the solidity of agricultural uses and traditions that has contributed to diversifying the varieties grown. It’s territory is mostly hills and mountains with 82% of the whole population living in rural areas. A 2003 census listed 78,687 farms with an average size of 5.20 hectares, smaller than the national average of 6.70. At 432,000 hectares, the useable T surface is 40% of the regional total. Farming, therefore, is still central to the regional economy of the Abruzzo and it is worked by people who cannot be called “agricultural entrepreneurs” in the sense of the term used in European norms since their primary source of income is not agriculture but industry or services. As the author Ignazio Silone wrote, “they have a tenacious loyalty to their own economic and social tenets that goes beyond and practical usefulness” (Silone, 1963). The talks held with technical staff who worked on the various projects of agricultural biodiversity conservation showed the importance that the people who are still involved in localised farming still have. Indeed, in their case, modernisation has caused a shift in their family-based approach to agriculture making it more marginal in terms of the income it yields but not in terms of the commitment of time or social investment. This has given rise to the “factory-working-sharecropper” – factory worker during the week and farmer on Saturdays and Sundays thanks to the help and labour contributed by the older members of the family who can look after the country full-time.

This is the situation in which ARSSA and the “Let’s Cultivate Diversity” and “Cerere” projects of the Majella and Gran Sasso Parks was based, in which the links both real and symbolic with agricultural tradition have been kept alive but which risk disappearing as the population gets older, taking with it seeds and associated knowledge. The example given by Marco di Santo – agronomist of the Park of Majella – is a good one. Some years ago, during a territorial survey, a variety of durum wheat was discovered in Montenerodomo in the province of Chieti which grew at high altitudes of some 1,200 metres. The wheat was called “marzuolo”, a short-cycle strain sown in Spring which in the local economy served as a reserve in case the winter, soft grain wheat failed. There’s no one left grow it any more because that particular
small-holder died and the variety can only be found in the ARSSA seed bank.

The Abruzzo has the highest percentage of protected territory in Europe – more than 30% - between the three national parks (National Parks of the Abruzzo, the Majella and Gran Sasso and Monti della Laga), the regional parks and nature reserves and the WWF oases.

The intervention of man in these areas has been important as to how in time he has shaped space to suit agricultural practices and the needs of animal husbandry. This has created a landscape which has reached us as the outcome of specific needs, the combination of social requirements, crop practices local varieties and uses. Open fields or closed ones, arboreal seeding, marcite, (olive groves, apple orchards, almond trees and rows of capitozzati trees are among the many forms that constitute the backbone of the territory of the Abruzzo and which are unequivocally evocative of its history. With the changes that agriculture has undergone since the end of World War II, everything had to change and gave truth to Silone’s prophecy “the well-ordered fields of saffron, legumes and cereals were as pretty as a garden and showed the love for the land that moves just as every love which we fear will die out” (Silone, 1963).

The scope of this article is to understand what role can be played by agricultural biodiversity in the future development of these areas. It also aspires to be the starting point for a reflection on how nature reserves, set up to safeguard and conserve natural resources, can interact with the primary actors with an eye to achieving sustainable use of the territory.¹

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¹ Note that Art 1 of the frame law on nature reserves states that the institutional aims of protected areas includes the protection of the agricultural ecosystems” [...] to implement management methods and environmental restoration in order that man and his natural environment blend together by initiatives that include safeguarding values of an anthropological, archaeological, historical and architectural nature, and by agricultural, sylvan pastoral and traditional activity".
Note especially that this project enabled a methodology of work to be tested with farmers and a kind of varietal fact sheet to be used in the field for describing the varieties discovered.

In addition to the varieties, the territorial study also revealed certain ancient agricultural practices such as the “mesticone”, consisting in the cross planting a cereal (oats or barley) and a leguminous (vetch or cicerchiola) to obtain an excellent animal feed, or sowing maize and beans together to provide support for the latter and to keep the former green as long as possible. Furthermore, the first interviews with farmers induced the researchers to broaden the range of the species involved since others were being discovered in the fields in addition to those programmed in the study which were worth studying and conserving. That added rye, barley and grass pea to the list.

ARSSA’s great surprise was having collected a great many listed items – some 300 including spontaneous species and some fodder plants; which faced it with the need to figure out how to proceed “We immediately realised that although this initiative was for the protection of genetic material, it would have been ineffective for safeguarding all the anthropological, social and cultural aspects which are normally linked to local ecotypes and, more important still it would have done absolutely nothing to stem the loss of old varieties which, at best would have been transformed into a memory” (Silveri, 2002).

The move from ex situ to on farm conservation, therefore, was natural and was applied in the second phase of the project, this time funded by the Ministry of Agriculture, Food and Forestry (MiPAAF) within the National Biodiversity Project. In this new phase, the range of subjects was broadened in order to emphasise increased closeness to the territory to include the Park of Majella, the Province of L’Aquila, the Regional Botanic Garden and the Peligna Upland Community. The idea of using agricultural biodiversity as a key for rural development began to take shape creating a relationship among the various economic actors that go to make it up: farmers, schools, restaurants and tourism facilities.

Agricultural biodiversity and natural reserves
The National Park of Majella has a dedicated surface of little over 7% in which agriculture is carried out traditionally. It is this very nature of marginality and isolation that has enabled the survival of cultivated varieties and typical traditions of country culture which had disappeared from other areas.

The “Let’s Cultivate Diversity” project for the recovery, conservation and revaluation of autochthonous agricultural genetic resources of the Park began in 2003 jointly with the Regional Authority for Services of Agricultural Development (ARSSA) and co-funded by the Nature Conservancy Direction of the Ministry of the Environment and Territorial Protection.

The task of surveying was part of this project too which made use of the methodology that had been fine tuned by ARSSA in the previous project; The novelty here was the presence of specific incentives that were provided for on-farm conservation, of the biodiversity in a coordinated action with initiatives launched all over the territory In fact as encouragement to those who were still cultivating the local varieties and provide incentives to other farmers to use the Park.

2 In detail, 55 fruit were catalogued, 52 grain legumes, 36 cereals, 33 leguminous fodder and 19 vegetable.
there were a series of specific measures in the form of aid both direct and indirect to benefit the various economic actors (farmers, transformers, restaurant owners, school caterers...). The economic incentives range from grants for cultivating certain varieties, to technical support and making available reproduced informative material for training and public awareness-heightening material aimed at fostering a market for the produce made by custodian farmers. Furthermore, to orient agricultural production towards environmentally sustainable models, the Park covers the costs that farms have to bear for organic certification in so doing helping above all the smaller farms to get into the system. Farmers and transformers, however, were not the only recipients of aid. The project was also addressed to schools and restaurants in the area. The schools will take part in education and awareness-heightening initiatives with the aim of getting families acquainted with the issues that the project is promoting. A series of educational itineraries has been devised for pre-school and primary school children ("With Rossella on a quest to find the forgotten plants" and "A Pair of Pears"). The older children interviewed their grandparents and the older folk of the town by way of a questionnaire and a fact sheet to identify the varieties that were once best known. The little ones got involved in the topic by means of a fairy tale. Schools are a way of heightening awareness in the families and public opinion more in general on the importance of safeguarding agricultural biodiversity.

As regards relating the project to restaurants, it was decided to work on two levels, collective and school catering on the one hand and the diversified on the other in which specific menus would be created using agricultural produce from the custodian farmers’ chain. One of the first results of the project was the creation of a catalogue containing the autochthonous agricultural varieties of the National Park of Majella, a first necessary step towards awareness of what the territory holds and establishing suitable policies for its conservation. As regards the arboreal species two showcase fields were created (in the botanical gardens in Lama dei Peligni and S. Eufemia a Majella), where the ancient varieties contained in the catalogue can be seen (Di Santo and Silveri, 2006).

Parallel to the descriptions of the varieties a network was set up to deal with their conservation. As of now it counts thirty farms and five transformers with four new orchards planted and two in preparation.

Fig. 1: The Abruzzo conservation system.
As can be seen, the system is fairly complex with many actors where conservation of agrobiodiversity is only one of the parts or, if you will the base on which the system is built (figure 1).

Note that one of the main tasks of the Park has been to win over the trust of the farmers and thus become a party with whom to dialogue. This was only possible by painstaking work at grassroots level and a great many collective meetings organised to present and discuss the project. “the hard job was setting up a relationship of trust with people. To begin with they would say in dialect “I’ve nothing more here, nothing grows here any more” but then as they began to trust you they would open up their cupboards with all the seeds, each one with its proper name and origin often associated to a family member. [...] There’s a wealth in these small villages” (Di Santo, pers. comm.).

A similar initiative to the one which up to now has been described as objectives and tools used was realised by the Park of the Gran Sasso, under the name of the project “Cerere”. Here, too, taking agricultural diversity as the starting point was the key for re-inventing the development of a territory.

Conclusions
Experience such as that gained in the Abruzzo proves that sustainable use of agricultural biodiversity can develop into the premise on which to base a more general programme that includes the moral development of an entire territory. Indeed, the final result of the activities described show that it was not only keeping certain local varieties in cultivation (as stated in Article 6.2 (c) of the FAO Treaty) or supporting on-farm conservation (Art 6.2 f) of the Treaty) but creating the conditions for continuing to farm and therefore maintain the complex system of values and relations without which agricultural biodiversity would no longer make sense and simply disappear.

The role of the various public bodies was essential for creating the entire process and for easing the passing on of generational knowledge which otherwise would have come to an abrupt halt. Varieties and the relating knowledge were rediscovered in the fields worked by elderly farmers who often had no adequate new generation within the family. On the other hand, young people approaching agriculture are often not from farming families and therefore without an adequate degree of knowledge and above all without the lore of seeds classically passed on from family to family or through matrimony. In this case the body played the role of cultural and social mediator, putting these two subjects in touch with each other and fostering the passing on of seeds and knowledge from one generation to the next.

All this was made possible by establishing the conditions of trust described above which lie at the base of the workings of the informal seed system. Indeed the many studies on how these systems work in the world’s southern countries highlight the importance of concepts like trust, reciprocity and social ties in the dynamics of exchange and circulation of seed (Brush, 2007). Discovering that these dynamics are still important today in industrialised countries (Louwaars, 2008) can play an important part for the future of agriculture in Italy is the important point that emerges from this experience.

Bibliography
A R S S A, 2006. Pane nei Parchi dell’Appennino Centrale - L’itinerario del pane nei Parchi, CARSA.


Tavano G., Silveri D.D., 2006, 4 Prodotti tipici di Abruzzo - ricerche analisi sviluppi, CARSA.

Can consumer choice foster more diversified farming systems? The experience of direct sale in Toscana

Diego Naziri

“I turn to several and completely different distribution channels: direct selling, local markets and cooperatives of organic products. All this leads me to a growing diversification.”

Jean François Berthellot, farmer (France)

Introduction

The itinerary that the agri-food distribution system has taken in last decades has led to the development of long supply chains in which the distance between producer and consumer has increasingly widened, a process aggravated by the multiplication of intermediaries. The establishment of this type of chain is often dominated by large-scale transnational enterprises in which standardisation and flexibility in supply are paramount, and which has led to a flattening of tastes and consumption (Brunori et al., 2007).

The consequences of this have been significant. On the one hand small-scale producers have tended to become excluded from the market because of their lack of competitiveness and incapacity to guarantee the production standards demanded of them and, on the other, consumer awareness has been obscured as to the pathway followed by their purchases, thus preventing any kind of real monitoring on quality and means of production.

By contrast, recent years have witnessed a sharp growth in initiatives countering these processes which aim to establish the worth of produce at its place of origin and heighten the profile of farmers. These are almost always organised along “short” lines, rooted in the territory and therefore linked to its natural, cultivation-related and social resources, and are based on a different set of values, principles, meanings and objectives such as the environment, culture and ethics, different from purely economic objectives (Brunori et al., 2006a).

Direct sale is a form of trading in farm produce that puts producers in direct contact with consumers, short-circuiting all the middle links of the chain, hence its definition of “short supply chain”. Considering the socio-economic conditions of the present day, direct sale is a highly significant option for a number of reasons. It is a viable alternative to the conventional food production system essentially based on intensive methods and highly specialised farming systems tailored to meet the demands of the wholesale market which specifically penalises the first ring of the chain, namely the farms who find themselves squeezed between rising costs of production factors and the low price paid for their produce, the so-called “squeeze on agriculture” (Cicatiello and Franco, 2008). This mechanism imperils the very existence of a multitude of small and mid-sized farms that are vital for the maintenance and development of the social, economic and cultural fabric of rural areas (Van der Ploeg, 2006).

There is quite an extensive bibliography describing subjects who make use of the short supply chain, both producers and consumers, the function and modus operandi for establishing these social networks, the relationship between local

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1 This article is an excerpt from Naziri D., Direct sale as a means for promoting the sustainable use of plant genetic resources: the case of the Tuscany Region, Journal of Agriculture and Environment for International Development, vol. 102. N. 1-2.
foodstuffs and rural development, and lastly on the valorization of local production as a tool for territorial marketing. There is instead a lack of studies that confirm the rather widely held belief that short supply chains, and direct sale in particular, can be effective in limiting the erosion of biological diversity by encouraging more diversified farming systems and contributing to recovering traditional varieties. Indeed these latter have been gradually abandoned by farmers since on the one hand traditional varieties do not possess the characteristics necessary to be included in the conventional distribution chains (especially in terms of uniformity, look, suitability for industrial transformation and resistance to handling and transportation) and, on the other, they have so far found it hard to find adequate alternative trading outlets.

This study does not set out to provide an exhaustive answer to this issue but rather to report cases of positive correlation between direct sale and biodiversity in Tuscan agriculture. It also seeks to establish whether by promoting the sustainable use of genetic resources through supporting short supply chains makes any real contribution to implementing the FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) to which the Italian government is committed by having ratified it and what shape this support has taken so far.

**The collective forms of direct sale in Italy**

The direct sale of food products to consumers is a practice which has never completely died out in Italy. Despite the widespread consensus about the strong and growing interest in direct sale, it is very difficult to arrive at a accurate idea of the size of the phenomenon and in any case such an idea would be outwith the scope of this study.

Direct sale has been boosted in recent years by the so-called “law of orientation” (Legislative Decree 228/2001) that for the first time gave farmers the right to deal not only in their own produce (which, in any case, must still be prevalent by percentage) but also in produce bought from third parties. This is a departure from the ordinary legislation on trading (Legislative Decree 114/1998). The previous law (59 of 1963) limited sale to marketing only one’s own produce.

The launch of certain direct sale initiatives was backed by producers in an attempt to meet the consumer demand for fresh local produce. The service offered by the producers was simple, such as setting up sales points for direct selling within the farm or in outside premises, whether individually or together with other farmers such as in the so-called farmers’ markets and in collective outlets.

Legislation has also contemplated this approach. Article 1 (subparagraph 1,065) of the 2007 Budget Law (Law 296/06) explicitly promotes the development of farmers’ markets and this was further enshrined in the Ministry of Agriculture, Food and Forestry (MiPAAF) decree of 20 November 2007 which delegated the establishment of such initiatives to local government, in particular to municipalities.

The 2007 Budget Law also provided further incentives to launching direct, collective-type direct sale initiatives and these, in the

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2 This decree is “of a non-regulatory nature” since Article 117 of the Italian Constitution confers the exclusive responsibility for legislating on trading and agriculture to the Regions. This means that Regional legislation has the status of legally binding law and so this decree is for guidance only and is not binding.
meantime, have emerged in many different guises, from more spontaneous and sometimes occasional cooperation among producers to more organised ventures of collectively managing direct sales (Rossi et al., 2008). Indeed Article 1 (subparagraph 1,094) strongly encourages farmers to set up companies with objectives that may include collective direct sale.

Other direct sale initiatives came about, not through the efforts of producers but of consumers. Over the years there has been a heightening of consumer awareness of the need to reclaim the power to choose also at the moment of purchase. In choosing from a variety of products the consumer is deciding which company to support and thus, indirectly, the corresponding farming model. This has spawned a number of consumer movements committed to supporting local produce, small-size farms and marginalised rural areas, and enhancing the culture of critical consumption. These movements are emerging all over the world, each with their own modus operandi, level of awareness and objectives stemming from the territorial context and historical period in which they developed. In Italy, the so-called GAS, acronym of “Gruppi d’Acquisto Solidale” (Solidarity Purchasing Groups) represent a significant experience. This is presently the most widespread form of self-organised groups of consumers in Italy (Innocenti, 2007a). The GAS were granted recognition in the 2008 Budget Law (Law 244/07) and defined as “non-profit-making associations established with the objective of purchasing and distributing merchandise to those belonging to it without mark-up, pursuing aims of ethicalness, social solidarity and environmental sustainability”. This measure enables groups who have come together as associations to conduct their business in full conformity of tax laws on an equal footing with non-commercial bodies.

This study will focus exclusively on collective forms of direct sale, namely farmers’ markets, collective outlets and GAS as bodies for which support by institutions could be more easily provided.

The situation in the Tuscany Region

Tuscany is an excellent viewpoint for analysing the development of the short supply chain. By its nature, it has proved fertile for the foundation and rapid spread of a number of initiatives that often involve many local actors. In fact, Tuscany still has a model of agriculture with strong links to local contexts, with a low incidence of “modernity” and with a structure mainly composed of small to medium-sized farms of which over 80% has less than 5 hectares of Utilized Arable Area (UAA) (Rossi et al., 2008).

The 2007 report of the Observatory for Direct Sales sponsored by the Coldiretti farmers’ federation and Agri2000 noted that Tuscany is the primary region in Italy for direct sale with no fewer than 9,670 farms that sell their produce directly (some 7% of the number of farms in the region) representing around 17% of the national total.

The collective approach to direct sale in Tuscany began in the 1970s with a few sporadic initiatives launched directly by small-scale producers. The year 1984 saw the first Fierucola in Florence, the first real farmers’ market organised and run by farmers themselves. In the years that followed, and especially over the last five or six years, there has been a significant increase of initiatives of this kind and

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3 Note, however, that for many farms in Toscana today, direct selling is just a complementary activity to providing board and lodging as agritourisms (of which there are some 3,500 in the Region) selling their produce to customers with no involvement in other more structured collective initiatives.
these, in turn, have been supplemented by other projects involving producers together with local government organisations and other bodies both institutional and from the sphere of associationism (such as the Tuscan Committee for Organic Producers-CTPB and the Association of Solidarity for the Italian Countryside-ASCI). In this highly dynamic setting, the characteristics of the market vary a lot both in how it relates to the territory and in the objectives the organisers set themselves (Brunori et al., 2008).

As of now, Tuscany boasts some fifteen farmers’ markets that are set up regularly (generally once a month) and there are others which, despite their longevity, only appear sporadically.

The growing interest in these initiatives on the part of the institutions led the Tuscany Region to introduce measure 5.3.3.2.1 into the Rural Development Programme 2007-2013 providing funding for stimulating producers’ markets in rural areas in order to encourage vitality and the provision of services in the more backward areas too. So far, however, this measure has not been implemented.

By contrast, the approval of the “Filiera corta – Rete regionale per la valorizzazione dei prodotti agricoli toscani [Short supply chain – Regional network for the valorization of Tuscan agricultural produce]” (DGRT 335/2007) Tuscany Regional project has had an enormous impact on the development of direct sale.

It set a tender earmarking substantial funding to support specific direct sale initiatives in the three-year period between 2007-09 including farmers’ markets. As of today, this project has earmarked contributions, which are 80% non-refundable, to enable the initiatives sponsored by local government to take off. At present, sixteen farmers’ markets have received funding (a number of which were already up and running).

The “Filiera corta” project also provided for the funding of a specific initiative for the set-up of outlets for local produce, namely places where farms can sell their produce directly within a collectively managed structure. Outlets are also perceived as a further means of achieving the valorization of the territory along the lines of the “Strade [routes]” (of wine, oil, flavours established by Regional Law 45/2003). The regional funding will enable 14 collective outlets to be added to the pioneering initiatives launched autonomously by the farmers themselves (of these 14, two – the Tuttigiorni [Every day] covered market with some 50 local producers in Montevarchi in the province of Arezzo and the “Dal podere al palato [From the Farm to the Palate]” with 10 producers in the province of Siena are already up and running).

With regard to GAS groups, they began to spread in Tuscany in the mid 90s but there was a substantial increase in their numbers since 2000-2001. At present there seem to

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4 Ruling of the Tuscany Regional Government.
5 This project came a few months before the publication of the MiPAAF decree of 20 November 2007. However, the few differences between the two legislative acts do not make them incompatible.
6 Initiatives funded under the project must in any case be financially self-sufficient within the following three years.
7 The Strade project is aimed essentially at tourists but in synergy with the outlets it could have a significant impact on the inhabitants of the territory.
be some 80 groups although, as at national level, this number could substantially underestimate the actual entity of the phenomenon\(^8\). They are most numerous in the provinces of Florence and Pisa.

**The exploratory survey of a number of interesting cases**

In order to better understand the relationship between direct sale and the sustainable use of agro-biodiversity, interviews were conducted with the proprietors of three Tuscan farms that are very much involved in collective direct selling. The main purpose was to ascertain if direct selling had led to a progressive adaptation of agricultural production system and hence had contributed to an increase in the on-farm agricultural biodiversity or, at least, to its valorization and thus maintenance.

The farms selected had to satisfy the following criteria: i) a substantial if not preponderant part of production had to be traded through one of the forms of direct collective selling under examination (farmers’ market, collective outlets or GAS); ii) The farm was not only livestock-based since the focus of the study was the sustainable use of plant genetic resources; iii) the farm had been involved in direct selling for at least 5 years so that it would have had time to adjust its production system; perennial plants (e.g. grapes and olives) were excluded from the study because adaptation of production system for them can only take place over the mid-

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\(^8\) In this area too, Tuscany is of great interest with almost 20% of the over 400 GAS groups nationwide registered by websites.

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**Tab. 1 – Main characteristics of the three farms taking part in the study**

<table>
<thead>
<tr>
<th>Farm name</th>
<th>Bio Colombini</th>
<th>Radici</th>
<th>Poggio di Camporbiano</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Crespina (PI)</td>
<td>Loro Ciuffenna (AR)</td>
<td>San Gimignano (SI)</td>
</tr>
<tr>
<td>Size</td>
<td>18 ha (UAA 18 ha)</td>
<td>40 ha (UAA 5 ha)</td>
<td>265 ha (UAA 115 ha)</td>
</tr>
<tr>
<td>Main crops(^1)</td>
<td>Vegetables, legumes olives, fruit trees</td>
<td>Vegetables, fruit trees, cereals</td>
<td>Fodder, cereals, vegetables, legumes, fruit trees</td>
</tr>
<tr>
<td>On-farm processed produce</td>
<td>Tomato juice and sauce, vegetables in oil</td>
<td>Vegetables in oil, sauces, creams, chestnut flour, soups, juices, preserves</td>
<td>Husked cereals, soups, flours, pasta, tomato sauce, creams, juices, preserves. cheeses</td>
</tr>
<tr>
<td>Certification</td>
<td>ICEA (organic)</td>
<td>ICEA (organic)</td>
<td>CODEX s.r.l. (organic) Demeter (biodynamic)</td>
</tr>
<tr>
<td>First year of direct selling</td>
<td>2001</td>
<td>1985</td>
<td>1995</td>
</tr>
<tr>
<td>Forms of direct selling(^2)</td>
<td>GAS (19 groups serving between 600 and 1300 families), farm outlet, local school</td>
<td>Collective outlet (Tuttigiorni in Montevarchi), farmers’ market (La Fierucola in Florence), GAS (2), farm outlet, catering</td>
<td>GAS (80 groups serving between 1500 and 2500 families), farm outlet, local school, on-line (for dry foodstuffs only)</td>
</tr>
<tr>
<td>Forms of non-direct selling(^2)</td>
<td>no</td>
<td>Specialty shops (local and non-local including overseas)</td>
<td>Specialty shops, wholesalers (for packed cereals only)</td>
</tr>
</tbody>
</table>

\(^1\) Main crops underlined
\(^2\) Main forms of selling underlined

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if direct selling had led to a progressive adaptation of agricultural production system and hence had contributed to an increase in the on-farm agricultural biodiversity or, at least, to its valorization and thus maintance.

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\(^8\) In this area too, Tuscany is of great interest with almost 20% of the over 400 GAS groups nationwide registered by websites.
produce is sold through the collective outlet in Montevarchi (estimated yearly turnover between 40 and 50,000 Euros) or through other forms of direct sale. The processed produce, by contrast, is mainly sold non-directly through specialty shops.

Lastly, although Poggio di Camporbiano is much bigger than the other two it still manages to sell over 80% of its produce directly to consumers, principally through the 80 GAS groups it deals with.

In order to verify the impact of direct sale on the agricultural bio-diversity of each single farm, three different levels of analysis were considered: i) diversity in the farming system; ii) diversity in the number of crops and iii) diversity in number of varieties.

It emerged that the effect direct sale has had on the diversification in the farming system of the three farms has not been uniform. The first farm under consideration, Bio Colombini, sold its produce almost exclusively to large-scale distribution through wholesalers or more frequently directly to the supermarkets until the early ’90s. The system used was substantially a highly specialised model of intensive industrialised vegetable production adequate to the needs and logistics of large-scale distribution. Today, the system is still mainly vegetable-oriented but different in that now the produce is high-quality, typical, local and organic for direct sale. Furthermore, direct sale induced the farm to add fruit and olive production to their range but these are still of secondary importance.

The impact of direct sale has been felt more by the Radici farm. Originally, it farmed chestnuts, essentially harvesting the nuts from the trees on its property. Transformation has always been important for the farm for selling the products obtained from chestnuts – dried chestnuts, and chestnut flour and puree – to specialty shops. When he began pioneering forms of direct sale through farmers’ markets in the mid ’80s, the owner understood that a wider assortment of products was necessary if he wanted to satisfy the demand of the market. This induced him to introduce fruit trees and vegetables to be transformed by the farm into his system. This is now the lion’s share of his production.

Lastly, the history of the Poggio di Camporbiano farm is more recent. Since its foundation in 1988 it has always pursued an organic and bio-dynamic model of agriculture\. The farm now boasts a highly diversified production that includes animal husbandry in line with the organic principle that animals are necessary for what they contribute in terms of organic material and for maintaining the farming cycle closed. In its early years, the farm sold its produce through wholesalers specialised in organic products but in so doing it encountered two main problems. The first was the excessively low prices the farm was paid by the middle-man and the second was that the farm owners did not wish to rely on any production factor external to the farm but be autonomous, even as regards the seeds that had to be (and still are) mostly self-produced\. This means they have never wanted to grow hybrids which, in turn,

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9 Bio-dynamic agriculture is an approach to sustainable systems of agricultural production that respects the earth’s ecosystem. It is based on the philosophical teachings of the Austrian exponent of esotericism Rudolf Steiner; it includes the idea of organic agriculture in single harmony with the earth and the life that develops on it.

10 Except for the seeds of certain vegetables in which they are not yet self-sufficient and which are still purchased externally.
created problems in satisfying the demand of wholesalers in particular for uniformity. Thus came the first approach to direct sale which initially took the form of participating in farmers’ markets (a policy later abandoned) and which, as appears, was to become their most important distribution channel.

There is an interesting difference between this case and the previous two in that its diversification in farming system was not a result of the new economic opportunities that emerged from direct sale but rather of a systemic approach to the sphere of agriculture that was pursued from the very beginning. The progressive diversification that took place over the years was in fact directly attributable to the availability of more money which enabled the farm to shoulder the heavy costs of investment required to purchase the necessary equipment and structures. Since, therefore, direct sale was the means of distribution most suited to their wide assortment of quality produce, it undoubtedly contributed to the implementation and successive maintenance of the eco-sustainable, diversified model of agriculture that the farm had pursued from its inception.

With regard to diversity of cultivated species, all three farms registered an increase in number after resorting to direct selling. The reasons for this choice were substantially in order to: i) broaden the assortment of products offered to better satisfy the diversity of consumer demand, and save clients the extra costs and time involved in shopping at a multitude of suppliers; ii) lengthen the time span of having some kind of product to sell since the personal relationship between producer and consumer, a prerogative of direct sale, needs a certain degree of continuity during the course of the year; iii) pursue a more staggered production during the year because direct sale, especially for the GAS groups, requires a modest but regular supply flow, generally weekly or fortnightly. Furthermore the groups are unable to absorb production concentrated in a short period; iv) introduce or rediscover crops that could not be fully appreciated by being distributed through traditional marketing channels but which sell well when distributed through direct sale.

The Bio Colombini farm is an excellent case in point. Since it disengaged from the philosophy of large-scale distribution, the number of its crops have grown from 3-4 to today’s 30. Not only it has introduced varieties to satisfy clients’ needs and requests but as a way of rendering its selling strategy as rational as possible, it has decided to include certain crops in its basket which the owner has called “emergency produce”. These are products with low perishability (e.g. carrots, potatoes, squash) which could be used to make up for the temporary lack of other produce during the year. In this way there is always something for the mixed vegetable boxes that the GAS groups generally purchase11.

While softening the impact of production peaks, staggering production by diversifying the species grown (and the
varieties as described under) only partly solves the issue of the time gap between supply and demand. There is a marked tendency within farms involved in direct sale for this strategy often to be accompanied by processing of the produce within the farm itself. In addition to enabling the farm to market products with a higher added value, this strategy reduces the seasonal limitation of produce, its perishability and periods of excessively concentrated workloads during the year. In some cases, not only does processing complement production diversification as a means of tackling organisational issues but is also, in itself, an ulterior factor towards biodiversity.

The progressive broadening of processed produce by the Radici farm, for example, prepared according to old recipes or even in the form of authentic “domestic experimentation” has resulted in the need for new crops to be introduced into the farming system (e.g. lettuce, arugula, and red lettuce used in certain soup recipes). The owner has estimated that the number of vegetables produced has risen from about 15 to today’s 30.

As stated above, the impact of direct sales on the Poggio di Camporbiano farm has been decidedly less pronounced. From the very outset, the owners sought to introduce a broad range of crops, growing various cereals (bread and durum wheat, spelt, barley, rye and millet) legumes (chickpeas, lentils and beans) fruit and especially a wide variety of vegetables. By contrast, however, when in those days they were mainly selling through wholesalers, the products that actually found their way to the market were only a few varieties (e.g. squash and garlic) and the rest was relatively marginal and used mainly for domestic consumption. Having now to supply many GAS groups required a radical reorganisation in their system. In terms of land earmarked for cultivation the predominance of few crops over the others has been substantially reduced and the areas dedicated to individual crops is now much more homogeneous.

Finally with regard to the diversity in terms of varieties grown, in this case too, direct selling has had the effect of increasing their number, substantially for the same reasons as for the number of crops grown. Bio Colombini has seen an increase in the number of varieties, especially for cabbage and kale (ten or so varieties) tomato and eggplant (8 to 10 varieties each). For “emergency products”, the problem of reducing the concentration of production is obviously less acute and it was therefore unnecessary to increase the number of varieties of these crops.

Despite the effect that transformation has had of lessening also the Radici farm’s need to graduate production, there is again a considerable number of varieties grown (some 100 of which 25 of potatoes alone). In addition to research into varieties characteristics which give a special organoleptic quality to its processed produce, according to the proprietor, this is also a way to reduce the costs of warehousing and of immobilised capital.

The head of Camporbiano, too, points out how direct selling has led to the cultivation of more varieties, stressing on the one hand the need to stagger production (e.g. by growing early, mid-season and late varieties of cabbage and kale, or, for apples, summer varieties for immediate consumption, varieties for early consumption and lastly varieties which benefit from months of ripening in the Can consumer choice foster more diversified farming systems? The experience of direct sale in Tuscany Region

There has therefore been an increase in biodiversity as measured by the Shannon index which takes into account the numerousness of species and also the uniformity of their distribution.
fruit-house) and, on the other, being able to meet specific and diverse demands of consumers from different part of Tuscany, even relatively close to one another. The farm also makes use of mixtures of varieties of cereals that have undergone selection over the years for their special aptitude for transformation and adaptability to the local agro-environmental conditions.

It comes as no surprise, therefore that all three farms examined in this study cultivate local and/or old varieties and in certain cases are also directly involved in attempts to recover varieties which otherwise would no longer be grown as not distributed through the conventional distribution channels (e.g. the owner of the Radici farm, who has been a member of the Associazione Agricoltori Custodi [Association of Guardian Farmers] since 1991).

**Direct selling as a means of promoting the sustainable use of plant genetic resources pursuant to Article 6 of the Treaty**

The study so far shows a clear, pronounced correlation between agrobiodiversity and the various forms of direct sale. Support for direct sale from the institutions whether national or local can therefore be seen as a valid means for contributing towards the sustainable use of agricultural biodiversity and, indirectly, to implementing Article 6 of the FAO Treaty on plant genetic resources which, being a party to, Italy is bound to be committed to.

The main relevance of direct sale to Article 6 is related to subparagraph (a), (e) and (f) of the paragraph (2).

The subparagraph (a) requires that countries party to the agreement shall “pursue fair agricultural policies that promote, as appropriate, the development and maintenance of diverse farming systems [...]”. As we have seen, this diversification is occurred in all three farms studied.

The subparagraph (e) invites countries to “promote, as appropriate, the expanded use of local and locally adapted crops, varieties and underutilized species”. In this instance, too, the short distribution chain has proved more suitable than other marketing means for distributing and valorizing this type of production and therefore for promoting its cultivation.

Lastly, subparagraph (f), supports as appropriate “the wider use of diversity of varieties and species in on-farm management, conservation and sustainable use of crops [...] in order to reduce crop vulnerability and genetic erosion, and promote increased world food production compatible with sustainable development”. The case study results reported here clearly show that direct sale has always promoted diversification of farm production both in species and varieties. However, it is noteworthy that in the case of Bio Colombini and Radici, direct sale was a driving force towards diversification and led to an increase in agricultural biodiversity. In the case of Poggio di Camporbiano, a highly diversified production model was pursued from the very outset independently of direct sale. Direct sale only appeared later as the best marketing approach for valorizing the farm’s production. In this case, therefore, it can be said that direct sale contributed more to maintaining organic diversity than to increasing it.

**Institutional criticality and support to direct sale**

From the interviews conducted it emerged that adopting the policy of direct sale is often fraught with extra costs and difficulties, especially of an organisational nature. This is, in part, also witnessed by the low number of producers who have decided to adopt this type of marketing.
During the interviews, the main points of criticality encountered were: i) technical and organisational difficulties in producing and offering a wide assortment of produce that satisfies consumer demand (especially those in the GAS groups); ii) the lack of manpower in the countryside; ii) a marked increase in staff costs; iii) a lack of continuity in the demand, in particular of the GAS groups, because often the groups themselves have a very short life from birth to demise and also because their demand reaches its lowest ebb in Summer which is the period of maximum production; iv) the time needed to take part in farmers’ markets or to divide produce into the boxes for the GAS groups and v) the need for investments specifically addressed to direct sale.

The farmers interviewed appreciate the efforts being made by the public institutions in favour of the various forms of collective selling but they feel that further support initiatives are needed. In addition to providing a legislative framework that makes direct selling legal, so far, essentially, these efforts have taken the shape of contributions by local government to setting up farmers’ markets and collective outlets (in this case, in Montevarchi). As of now, the GAS groups do not appear to have received any form of support from the institutions. It has emerged that the main request is for support in the availability of meeting places that can be used to stock produce, the lack of which sets severe constraints on the operability of the groups.

Furthermore, despite the Rural Development Programme of the Tuscany Region never having funded collective forms of direct selling it has, in past years especially, spent considerable sums of money to provide partial coverage of the expenses of modernisation and diversification of individual farms. These contributions were functional especially for those who intended embarking on processing their products within the farm in order to then market the produce by direct sale.

**Bibliography**


Can consumer choice foster more diversified farming systems? The experience of direct sale in Tuscany Region


National ad regional normative framework of reference

MiPAAF decree of 20 November 2007: "Implementation of Art (1) (1065) of Law Nr 296 of 27 December on markets set aside for direct sale by farmers", Official Gazette Nr 301 of 29-12-2007


Law Nr 59 of 9 February 1963: “Norms for the stable sale of farm produce to the public by direct farm producers”, Official Gazette Nr 44 of 16-02-1963

Legislative Decree Nr 114 of 31 March 1998: "Reform of the law concerning trade pursuant to Article (4) (4) of Law Nr 59 of 15 March 1997”. Official Gazette Nr 95 of 24-4-1998 - Suppl. Ordinario Nr 80

Legislative Decree Nr 228 of 18 May 2001: "Orientation and modernisation of agriculture pursuant to Article 7 of Law Nr 57 of 5 March 2001.", Official Gazette Nr 137 of 15-6-2001 - Suppl. Ordinario Nr 149
Can consumer choice foster more diversified farming systems? The experience of direct sale in Tuscany Region


Regional Draft Bill Proposal

The objective of this document is to present a draft model that combines and synthesises the regional legislation for protecting and enhancing autochthonous varieties and breeds of interest to agriculture.

Protection and enhancement of the heritage of local breeds and plant varieties of interest to agriculture and husbandry

Art. 1 – Scope and Purpose
1. The Region provides for the conservation and protection of the heritage of local breeds and varieties, and of autochthonous genetic resources.
2. The Region protects and enhance the cultural heritage of knowledge, techniques and customs relating to agricultural biodiversity as implemented by rural communities throughout history.
3. Local breeds and varieties belong to the natural agricultural and husbandry heritage of the regional territory.
4. The Region promotes and guarantee collective use of the heritage of local breeds and varieties by means of a conservation network.
5. The Region implements direct measures and encourage public and private initiatives in order to conserve, safeguard and enhance local varieties and breeds of agricultural interest with particular attention to those at risk of erosion.

Art. 2 – Definitions
1. For the purposes of this law, breeds and local varieties, hereinafter genetic resources, shall be:
   a) species, breeds, varieties, cultivars, populations, ecotypes and clones that have origin in the territory;
   b) species, breeds, varieties, cultivars, populations, ecotypes and clones which, despite being of extra-territorial origin were introduced into the territory sufficiently in the past to now be a fully integrated part of its agricultural system and animal husbandry;
   c) species, breeds, varieties, cultivars, populations and ecotypes which have been bred from selected strains of those specified in Art 2 (1) (a) and (b) hereof;
   d) species, breeds, varieties, cultivars, populations and ecotypes originally from the Region but no longer extant there and conserved in botanic gardens, nurseries or research centres in other regions or countries.
2. The Implementing Regulation shall define the criteria for classifying the autochthonous genetic resources at risk of genetic erosion pursuant to Art 2 (1) hereof.

Art. 3 – The heritage of genetic resources
The Region shall recognise the heritage of knowledge, innovation and practices of local communities which are important for the conservation and enhancement of the biological diversities extant in the territory. Pursuant to Art 8 (j) of the Rio Convention on Biodiversity (1992), and Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture the Region shall encourage the sharing within the local communities of the benefits arising from the application and usage of the aforementioned heritage.

Art. 4 – The responsibility of the Region
1. The Region shall carry out its tasks of protecting and enhancing genetic resources by:
   a) favouring public and private initiatives that tend to conserve and reconstitute genetic resources, disseminate knowledge of and respect for them and interest in their use, and enhance produce deriving from them;
   b) itself launching initiatives with the objective of protecting and enhancing said resources.

2. The Region shall approve ad hoc programmes which specify the activities and initiatives which are deemed necessary to be launched and promoted, and which establish the criteria for gaining access to the benefits, the measure of the incentives and the relative modalities of implementation.

Art. 5 – Voluntary Regional register
1. In order to safeguard local breeds and varieties, a voluntary Regional Register will be set up with a section for animals and one for plants. It will record breeds, varieties, populations, ecotypes and clones of regional interest pursuant to Art 2 hereof.
2. The Regional Register will be organised in accordance with criteria and characteristics that foster uniformity and comparability with any other similar tool which may exist at national or international level.
3. The Regional Register will be public and managed by the directory general for agriculture and be consultable on-line.

Art. 6 – Enrolment on the Regional Register
1. Enrolment of genetic resources on the Register will be performed by the directory general for agricultural based on the approval of an ad hoc technical-scientific committees set up by the Regional government.
2. Application for registration may be made by the Regional government, scientific bodies, local authorities, private and public organisations and members of the public.
3. The ways and means of enrolment on the Regional Register shall be in accordance with the Implementing Regulation.

Art. 7 – Tasks of the technical-scientific committees
1. The task of the committees is to:
   a) express their opinion on applications for enrolment and cancellation of local varieties on the Regional Register;
   b) express their opinion on the tasks performed by the Region;
   c) determine the criteria for appointing Steward Farmers.

Art. 8 – Conservation ex situ of autochthonous breeds and varieties
1. In order that ex-situ conservation effectively protect local varieties and breeds, the Region shall identify public and private subjects with proven experience and who have access to facilities with a suitable technical and organisational structure to whom to entrust the protection and ex situ conservation of the genetic resources enrolled in the Regional Register.
2. The ways and means of authorising and maintaining structures for ex situ conservation shall be disciplined by the Implementing Regulation.
3. Subjects appointed to ex situ conservation shall carry out their duties in such a way that the material entrusted them be protected from all forms of contamination, alteration and destruction.
Art. 9 – Conservation and protection network

1. The Region will set up and coordinate the conservation and protection network for autochthonous varieties.
2. Steward Farmers as specified in Article 10 hereunder and the public and private subjects specified in Article 8, who carry out the ex situ conservation of genetic resources on behalf of the Region, shall be members of the network by right.
3. Other subjects, both public and private, may belong to the network in accordance with the ways and means provided by the Implementing Regulation.
4. The network will keep genetic resources at risk of extinction alive by ex and in situ conservation, and by encouraging their circulation.
5. Members of the network wishing to obtain plant breeders’ right or patent of a variety or of a variety derived essentially from one enrolled in the Register, or from biological material deriving therefrom, must apply first and foremost to the Region for authorisation.

Art. 10 – Steward Farmers

1. Steward Farmers are those who conserve in situ the genetic resources at risk of extinction that are enrolled in the indices.
2. The Steward Farmer:
   a) places single genetic resources in safekeeping, protecting and safeguarding them from all manner of contamination, alteration and destruction;
   b) disseminates knowledge and promotes widespread cultivation of the genetic resources he is custodian to, in accordance with the spirit of this law;
   c) renewes the seeds of the herbaceous species conserved in situ.
3. The post of Steward Farmer is conferred pursuant to enrolment in the register of Custodian Farmers.
4. Farmers who are members of their local community and are traditionally involved in conserving genetic resources, or who have contributed to rediscovering them are favoured candidates for enrolment as Steward Farmers.
5. Genetic resources are reproduced by Steward Farmers in the area where they were originally cultivated, or in areas recognised as traditional places for their cultivation.
6. The Implementing Regulation governs:
   a) the ways and means of getting enrolled on the register;
   b) the objective and subjective requisites for obtaining and holding the post of Custodian Farmer;
   c) the modality for recovering expenses incurred in performing the tasks of Custodian Farmer.

Art. 11 – Circulation of genetic material

1. In order to counter the risk of extinction of genetic resources of local varieties enrolled in the Register and ensure their recovery, maintenance and reproduction and hence long-term use, members of the network may exchange a moderate quantity of the genetic material locally on a non-profit basis.
2. The Implementing Regulation define:
   a) ‘moderate quantity’ referred to individual species;
b) the ways and means of circulation of genetic material.

Art. 12 – Conservation of historic tradition

1. The Region shall protect and enhance the local heritage of knowledge, techniques and customs regarding agricultural biodiversity that rural communities have practised throughout history.

2. To this end, the Region, independently or jointly with local governments, associations and other bodies, is authorised to launch initiatives with the objective of recovering and conserving the historic tradition of agricultural biodiversity.
<table>
<thead>
<tr>
<th>Region</th>
<th>Species</th>
<th>Varieties (local names)</th>
</tr>
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<tbody>
<tr>
<td>Basilicata</td>
<td>Olive tree</td>
<td>Carpinella, Fruscillo, Groia, Racioppa, Romanella lunga, Romanella tonda.</td>
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<td>Fennel</td>
<td>Finocchio semi selvatico</td>
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<td>Artichoke</td>
<td>Carciofo romanesco</td>
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<td></td>
<td>Horseradish</td>
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<td>Parsnip</td>
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<td>Leopoldia comosa</td>
<td>Lampagione</td>
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<td></td>
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<td>Tomato</td>
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<td></td>
<td>Aubergine</td>
<td>Melanzana africana o di rotonda</td>
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<td>Potato</td>
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### List of varieties and races included in the RDPs of Italian Regions

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<tr>
<th>Apricot</th>
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<th>Peach</th>
<th>Plum</th>
<th>Grapewine</th>
<th>Garlic</th>
<th>Broccoli</th>
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<th>Cabbage</th>
<th>Cucumber</th>
<th>Chickpea</th>
<th>Cicercchia</th>
<th>Onion</th>
</tr>
</thead>
</table>
## List of varieties and races included in the RDPs of Italian Regions

### Bean
- A formella, Bianco, Della Regina, Dente di morto, Di Controne, Occhio nero, Occhio nero alto Sele, Occhio nero di Oliveto Citra, Mustacciello d'Ischia, Mustacciello di Pimonte, Screziato impalato, Tondino bianco di Caposele, Tondino di Villaricca, Tondo bianco di Caposele, Zampognaro d'Ischia, Zolfariello, Della Regina di Gorga.

### Fava bean
- A corna

### Buckwheat
- Ecotipo alta valle Sele

### Lettuce
- Lattuga napoletana

### Lentil
- Di Colliano, Di san Gerardo.

### Maize
- Mais bianco Acerra, Spiga bianca, Spiga napoletana bianca, Spiga napoletana rossa, Spiga rossa, Spogna bianca.

### Aubergine
- A grappolo, Cima di viola, Napoletana, Violetta tonda.

### Melon
- Melone di Montecalvo, Melone nocerino sannese.

### Pepper
- Cazzone giallo, Cazzone rosso, Corretto di Acerra rosso, Corno di capra giallo, Corno di capra rosso, Friariello napoletano, Friariello nucerese, Friariello a sigaretta, Marconi rosso e giallo, Papaccella napoletana liscia, Papaccella liscia rossa, Papaccella napoletana gialla, Papaccella napoletana rossa, Peperone rosso rosso, Sassanelli rosso e giallo.

### Tomato
- Cannellino fioreggi, Centro scocche, Corbarino, Di Sorrento, Guardiolo, Piennolo (Pollena), Piennolo (vesuviano), Piennolo giallo, Piennolo Rosso, Pomodorino di collina, Pomodorino giallo di Montecalvo, Pomodorino giallo di San Bartolomeo, Pomodorino Reginella, Pomodorino rosso selvatico, Pomodorino San Marzano, Principe Borghese, Quarantino, Quarantino piccolo, Seccagno, Vesuviano.

### Pumpkin
- Zucca napoletana lunga, Zucca napoletana tonda.

### Zucchini
- Cimentano, San Pasquale.

## Emilia Romagna

### Grapevine
- Alionza, Angela, Bervedino, Canina Nera, Centesimino, Lambrusco Oliva, Melara, Negretto, Santa Maria, Sgavetta, Spergola, Uva Tosca, Verdea, Albana Nera, Bertinora o Rossola di Bertinoro, Belzamino, Biondello, Bsolla, Rambella, Fogarina, Termarina, Famoso, Cornacchia, Lanzesa, P350, Lambrusco Benetti, Lambrusco di Fiorano, Malvasia aromatic of Parma, Pelagòs di Bagnacavallo, Ruggine o Ruznintena, Santa Maria (nera), Scarsa Foglia, Trebbiano di Spagna, Uva di Tundé, Vernaccina Riminese, Verucchiese.

### Apricot
- Reale

### Chestnut
- Raggiolana, Pistolere, Marrone di Campora, Bianchiera, Carrarese.

### Cherry tree
- Duella, Corniola, Fiore, Moretta di Cesena, Mora di Vignola.

### Apple tree
- Abbondanza, Della Carraia, Campanino, Cavicchie (gruppo), Durello (gruppo), Lavina, Musone (gruppo), Rosa locale (gruppo), Ruggine (gruppo), Poppina, Zambona.

### Olive tree
- Grappuda, Colombina, Orfana.

### Pear tree
- Pero dalla coda torta, Gnocco di Parma (gruppo), Mora (gruppo), Principessa, Sanguignola (gruppo), Scipiona, Spadona estiva, Volpina (gruppo), Angelica, San Giovanni (gruppo).

### Peach tree
- Bella di Cesena, Buco incavato, Pesca Carota, Sant'Anna Calducci, Bella di Lugo, Sanguigna.

### Plum tree
- Agostana di Cesena, Zucchelle (gruppo).

### Thistle
- Cardo di Bologna

### Tomato
- Parmigiano (gruppo)

### Cabbage
- Piacentino

### Fennel
- Di Bologna

### Melon
- Popone Rospo di Bologna

## Friuli Venezia Giulia*

### Garlic
- Di Resia

### Turnip
- Da brovada a colletto viola

### Celeriac
- Gigante, Di Praga.
List of varieties and races included in the RDPs of Italian Regions

Peach tree  Triestina, Isontina, Iris rosso.
* To these have to be added the varieties already listed in the regional volunteer register.

Lazio
A p r i c o t  tree  Di Monteporzio, S. Maria in Gradi - AL1.
A z e r o l i  Rosso
C h e s t n u t  Marrone Premutico (Primitivo, Primiticcio)
C h e r r y  tree  Bella di Pistola, Biancona, Buonora, Core (Durona), Crogno, Graffione, Maggiolina, Morona, Ravenna a gambo corto, Ravenna a gambo lungo, Ravenna precoce, Ravenna tardiva.
P o m e g r a n a t e  tree  Di Gaeta MG1, Di Gaeta MG2, Di Formia MG3, Di Formia MG4.
H a z e l  tree  Barrettona, Casamale o nostrale (Comune di Sicilia), Rosa (Nocchia R.).
O l i v e  tree  Salvia cl. Montelibretti 6, Marina, Sirole cl. Soratte 1, Minutella Casarè, Villanella.
P e a r  tree  Bottiglia, Campana, Cannella, Cocozza (Cucuzzara, Zucchina), Del Principe, Di Posta, Di S. Cristina (Peruzza), Monteleone, Spina (Spinacarpi, Coccia d’Asino, Casentina), Trenton, Baccelli, Barocca, Angina o Ancina, Biancona, Castrese, Fegatella, Pero-Melo, Spina di Valle Imperiale, Tunnella.
P e a c h  tree  Reginella Pesca Uovo (Early Crawford), Reginella II.
P l u m  tree  Coscia di monaca di Ponzano Romano, Gallinaro, S. Giovanni, Coscia di monaca.
G r a p e v i n e  Abbuo n., Aleatico n., Bombino bianco b., Bombino nero n., Canniola di Marta n., Capolongo b., Greco b., Greco bianco b., Greco nero n., Lecinaro n., Maturano b. (Motulano), Moscato di Terracina, Nero Buono n., Olivella nera n., Pampanaro b., Passerina b., Pecorino b., Pellegrino, Pizzutello di Tivoli (Dito di Donna), Rosciola r., Verdello b..
G a r l i c  Aglio Rosso di Castelliri, Aglio Rosso di Procedo.
A r t i c h o k e  Campagnano, Castellamare.
C h i c k p e a  Di Canepina
S p e l t  Dell’Alta Valle del Tronto
F e n n e l  Finocchio di Tarquinia
S t r a w b e r r y  Fragolina di Nemi
L e n t i l  Di Onano
M a i z e  Agostinella
P e p p e r  Cornetto di Pontecorvo
T o m a t o  Scatolone di Bolsena, Spagnoletta del Golfo di Gaeta e Formia (A Patata), da secca di Minturno.
C e l e r y  Bianco di Sperlonga
Z u c c h i n i  Zucchinio di Cerveteri tipo Romanesco

Marche
B e a n  Monachello, Americano, Occhio di Capra.
F a v a  bean  di Fratte Rosa
M a i z e  Ottofile
B a r l e y  Nudo
<table>
<thead>
<tr>
<th>Variety</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Pear tree</td>
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<tr>
<td>P.A. Trento</td>
<td>Maize</td>
</tr>
<tr>
<td></td>
<td>Storo, Spin di Caldonazzo.</td>
</tr>
<tr>
<td>Puglia</td>
<td>Olive tree</td>
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<td>Oliviaria Garganica, Nzimbimbolo, Carmelitana, Cima di Bitonto, Cima di Mola, Cerasela, Butirra di Melpignano, Uggiana, Villette, Donna Francesca, Paesana, Donna Giulietta, Racioppa, Carmelitana, Oliastro, Cima di Fasano, Crogliola o oliva a cornetto, Cornale, Cima di Calabria, Ciddina, Oliva rossa, Gnostra o inchiostra, Leucocarpa, Limona, Lezze.</td>
</tr>
<tr>
<td></td>
<td>Olive tree (table olive)</td>
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<tr>
<td></td>
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<td>Grapevine</td>
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<td>Moscatello selvatico b., Ottavianello n., Aleatico n., Impigno b., Francavidda b., Notardomenico n., Fiano della Valle d’Itria o minatolo, Marchione, Mareggio, Palombo, Santa Teresa, Uva attina, Uva carrieri, Uva della scala, Cuccimaniello, San Nicola, Somarello nero, Somarello rosso, Baresana rossa, Prunesta, Baresana bianca.</td>
</tr>
<tr>
<td></td>
<td>Grapevine (table grapes)</td>
</tr>
<tr>
<td></td>
<td>Baresana rossa, Prunesta, Baresana bianca.</td>
</tr>
<tr>
<td></td>
<td>A p r i c o t tree</td>
</tr>
<tr>
<td></td>
<td>Cibo del Paradiso, Mandorla dolce, Palummina, Picocca, Risomma.</td>
</tr>
<tr>
<td></td>
<td>Cherry tree</td>
</tr>
<tr>
<td></td>
<td>Capo di serpe (testa di serpe), Colafemmina (duroncina), Durona di Biscaglie (duroncina, di Biscaglie, testa), Fuciletta primizia (fuciletta precoce, fuciletta prima, precoce di Molfetta), Zucherina di Bitonto (zuccaio, zucher), Graffione (laffion), Limone, Montagnola, Molfetta, Montagnole.</td>
</tr>
<tr>
<td></td>
<td>Pear tree</td>
</tr>
<tr>
<td></td>
<td>Agostina, A campanello, Favarsa, Ambrosina, Cilardi, Verde, Rosso, Cicc’ e Antonio, Pera a sole, Pera a vetro, Del buon cammino, Tanza, Pera di scorvo, Carminosa, Taca n’zuso.</td>
</tr>
<tr>
<td></td>
<td>Apple tree</td>
</tr>
<tr>
<td></td>
<td>Mela ghiacciata, Mela di Maggio.</td>
</tr>
<tr>
<td></td>
<td>Almond tree</td>
</tr>
<tr>
<td></td>
<td>Don Carlo, Fatalina, Tondina, Mollese (fina, grossa, lunga, bianca), Cartuccia, Ciccheria, Padula di Ruvo, Padula di Terlizzi, Pasola, Genia, Rachele, Occhioscuro.</td>
</tr>
<tr>
<td></td>
<td>Plum tree</td>
</tr>
<tr>
<td></td>
<td>Jannelli, Del monte, Prunieda bianca, Passo di Spagna, San Francesco, Prugna a cuore.</td>
</tr>
<tr>
<td></td>
<td>Fig tree</td>
</tr>
<tr>
<td></td>
<td>Verdeasca, Ricotta, Ritonna, Mattepinto, Kolm, Vito Carlo, Natalegna, Trimone, Zingarello (nero, bianco), Regina, Verde di natale, Fiorone di Orta, Fiorone nero di Sava.</td>
</tr>
<tr>
<td></td>
<td>Olive tree</td>
</tr>
<tr>
<td></td>
<td>Portoghese, Biondo del Gargano, Duretta, Duretta pigmentata, Vaniglia, Maltese.</td>
</tr>
<tr>
<td></td>
<td>Percoco</td>
</tr>
<tr>
<td></td>
<td>Bianco di Putignano, Di Ottobre, Di Natale.</td>
</tr>
<tr>
<td></td>
<td>Cabbage</td>
</tr>
<tr>
<td></td>
<td>Da foglia, a foglia riccia e liscia</td>
</tr>
<tr>
<td></td>
<td>Cauliflower</td>
</tr>
<tr>
<td></td>
<td>Barese ‘cima di cola’</td>
</tr>
<tr>
<td></td>
<td>Broccoli</td>
</tr>
<tr>
<td></td>
<td>Cima nera, Mugnoli.</td>
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<tr>
<td></td>
<td>Carrot</td>
</tr>
<tr>
<td></td>
<td>Violett, gialla</td>
</tr>
<tr>
<td></td>
<td>Artichoke</td>
</tr>
<tr>
<td></td>
<td>Verde e violetto, Bianco, Centofoglie.</td>
</tr>
<tr>
<td></td>
<td>Tomato</td>
</tr>
<tr>
<td></td>
<td>Mandurese</td>
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<tr>
<td></td>
<td>Batuta</td>
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<tr>
<td></td>
<td>Batata leccese</td>
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<tr>
<td></td>
<td>Curly endive</td>
</tr>
<tr>
<td></td>
<td>Cicoria all’acqua</td>
</tr>
<tr>
<td></td>
<td>Melon</td>
</tr>
<tr>
<td></td>
<td>Di Gallipoli e di Marciano di Leuca</td>
</tr>
<tr>
<td></td>
<td>Lentil</td>
</tr>
<tr>
<td></td>
<td>Lentichia di Altamura</td>
</tr>
<tr>
<td></td>
<td>Grass pea</td>
</tr>
<tr>
<td></td>
<td>Ecotipi diversi</td>
</tr>
<tr>
<td>Fava bean</td>
<td>Fava di Zollino, Fava di Carpinolo.</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Bean</td>
<td>Fagiolo dei Monti Dauni</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sardegna</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orange</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Melon</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Apricot</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Cherry</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Fig</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Almond</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Apple</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Olive</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Pear</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Plum</strong>&lt;br&gt;Tree</td>
</tr>
<tr>
<td><strong>Grapevine</strong></td>
</tr>
<tr>
<td><strong>Garlic</strong></td>
</tr>
<tr>
<td><strong>Watermelon</strong></td>
</tr>
<tr>
<td><strong>Basil</strong></td>
</tr>
<tr>
<td><strong>Curly endive</strong></td>
</tr>
<tr>
<td><strong>Onion</strong></td>
</tr>
<tr>
<td><strong>Facussa</strong></td>
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<tr>
<td><strong>Aubergine</strong></td>
</tr>
<tr>
<td><strong>Melon</strong></td>
</tr>
<tr>
<td><strong>Potato</strong></td>
</tr>
<tr>
<td><strong>Tomato</strong></td>
</tr>
<tr>
<td><strong>Radish</strong></td>
</tr>
<tr>
<td><strong>Pumpkin</strong></td>
</tr>
<tr>
<td><strong>Zucchini</strong></td>
</tr>
<tr>
<td><strong>Fava bean</strong></td>
</tr>
</tbody>
</table>
List of varieties and races included in the RDPs of Italian Regions

<table>
<thead>
<tr>
<th>Region/Species</th>
<th>Grass pea</th>
<th>Vigna</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pisue, Piseddu dente di vecchia.</td>
<td>Corru'e beccu, Fasolu a brenti niedda.</td>
</tr>
</tbody>
</table>

**Sicilia**

The list of local germplasm for his inclusion in the RDP will be established by the Agriculture and Forest Department of the Region.

**Toscana**

<table>
<thead>
<tr>
<th>Fruit trees</th>
<th>Local varieties listed in regional register: n° 463</th>
<th>At risk of erosion: n° 401</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erbaceous</td>
<td>n° 60</td>
<td>n° 60</td>
</tr>
</tbody>
</table>

For a complete description of the varieties see http://germoplasma.arsia.toscana.it/

**Umbria**

<table>
<thead>
<tr>
<th>Apple tree</th>
<th>Mela del castagno, Mela Muso di Bue, Mela Oleosa, Mela Coccianese, Mela a Sonagli, Mela Rossa, Mela Rosa in Pietra, Mela San Giovanni, Mela Ranettona, Mela Panaia, Mela Spoletina, Mela Lappione, Mela Ciucca, Mela Rosona, Mela Limoncella, Mela Ruzza, Mela Stratalina, Mela Conventina, Mela Rosa gentile, Mela Rosa romana, Mela Pagliaccia, Mela Casciola, Mela Polsola, Mela Roggia, Mela Coppola, Mela Lardella, Mela Pera.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pear tree</td>
<td>Pera di monteleone, Pera Marzaiola, Pera San Pietro, Pera Sementina, Pera Mezza, Pera Ruzza, Pera Cannella, Pera Volpina, Pera Moscatella, Pera Burro, Pera della Trebbiatura, Pera Tonda Roggia, Pera Vernia, Pera Prestareccia, Pera Spadona d’Inverno, Pera Limoncina, Pera Estiva Tonda, Pera Limona, Pera Verde d’Inverno.</td>
</tr>
<tr>
<td>Olive tree</td>
<td>Raggio, fecciaro</td>
</tr>
<tr>
<td>Peach tree</td>
<td>Pesca marscianese, Pesca Invernale, Pesca Sanguinella, Pesca della vigna, Pesca Cotogna Gialla.</td>
</tr>
<tr>
<td>Cherry tree</td>
<td>Ciliegia limona, Ciliegia di Cantiano, Ciliegia Morella, Ciliegia Corniola, Ciliegia Maggiaiola, Ciliegia Palombina, Ciliegia Lappiona.</td>
</tr>
<tr>
<td>Almond tree</td>
<td>Mandorlone, mandorla dolce.</td>
</tr>
</tbody>
</table>

**Veneto**

<table>
<thead>
<tr>
<th>Modified varieties</th>
<th>Maiar Marano, Maiar Biancoperla o Bianco Perla di Piave o Perla Piave, Maiar Rostrato o Sponcio.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft wheat</td>
<td>Plave, Canove.</td>
</tr>
<tr>
<td>Spelt</td>
<td>Einkorn</td>
</tr>
<tr>
<td>Barley</td>
<td>Agordino</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Fiolaro di Creazzo (VI)</td>
</tr>
<tr>
<td>Tomato</td>
<td>Nasone</td>
</tr>
<tr>
<td>Asparagus</td>
<td>Montine</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Di Bassano di Grappa</td>
</tr>
<tr>
<td>Bean</td>
<td>Di Posina (VI) o &quot;Scalda&quot;, &quot;Giàlet&quot;</td>
</tr>
</tbody>
</table>

**Grapevine**

Bianchetta trevigiana, Boschera, Cabrusina, Cavrara, Corbine, Dall’occhio, Dindarella, Forcellina, Grapariol, Groppello di breganze, Gruaja, Marzemina, Marzemina nera bastardar, Negrore, Oseleta, Pattaresca, Pedevenda, Perera, Pinella, Prosecco Lungo, Recantina, Trevisana nera, Turchetta.

List of local races included in the RDPs of Italian Regions

<table>
<thead>
<tr>
<th>Region/Species</th>
<th>Races (local names)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td>Category</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td>Calabria</td>
<td>Pigs</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
</tr>
<tr>
<td></td>
<td>Cattle</td>
</tr>
<tr>
<td>Campania</td>
<td>Sheep</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
</tr>
<tr>
<td></td>
<td>Cattle</td>
</tr>
<tr>
<td></td>
<td>Horses</td>
</tr>
<tr>
<td></td>
<td>Pigs</td>
</tr>
<tr>
<td>Emilia Romagna</td>
<td>Cattle</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
</tr>
<tr>
<td></td>
<td>Horses</td>
</tr>
<tr>
<td></td>
<td>Pigs</td>
</tr>
<tr>
<td></td>
<td>Donkey</td>
</tr>
<tr>
<td>Friuli Venezia Giulia</td>
<td>Cattle</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
</tr>
<tr>
<td></td>
<td>Horses</td>
</tr>
<tr>
<td>Lazio</td>
<td>Donkey</td>
</tr>
<tr>
<td></td>
<td>Cattle</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
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<tr>
<td></td>
<td>Horses</td>
</tr>
<tr>
<td></td>
<td>Chicken</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
</tr>
<tr>
<td></td>
<td>Pigs</td>
</tr>
<tr>
<td>Liguria</td>
<td>Cattle</td>
</tr>
<tr>
<td></td>
<td>Horses</td>
</tr>
<tr>
<td></td>
<td>Donkey</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
</tr>
<tr>
<td>Lombardia</td>
<td>Cattle</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
</tr>
<tr>
<td>Marche</td>
<td>Sheep</td>
</tr>
</tbody>
</table>
### List of varieties and races included in the RDPs of Italian Regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Horses</th>
<th>Cattle</th>
<th>Sheep</th>
<th>Goats</th>
<th>Pigs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Piemonte</strong></td>
<td>Cavallo del Catria</td>
<td>Pezzata Rossa d’Oropo, Varzese o Tortonese, Valdostana Pezzata nera, Barà-Pustertaler.</td>
<td>Sambucana, Garessina, Frabosana, Saltasassi, Tacola, Delle Langhe, Savoiarda.</td>
<td>Sempione, Vallesana, Roccaverano</td>
<td></td>
</tr>
<tr>
<td><strong>P.A. Bolzano</strong></td>
<td>Cavalo Norico</td>
<td>Pinzgauer, Pusterer Sprinzen (Pustertaler), Grigio Alpina, Bruno-alpina originale.</td>
<td>Pecora tipo Lamon (Villnösser Schaf), Pecora Tirolese nero-bruna (Schwarzbraunes Bergschaf), Tiroler Steinschaf (pecora della roccia), Schnalser Schaf (Pecora della Val Senales).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P.A. Trento</strong></td>
<td>Norico, Cavallo da tiro pesante rapido</td>
<td>Rendeva, Grigio alpina</td>
<td>Bionda dell’adamello, Pezzata Mochena</td>
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<td></td>
<td></td>
<td></td>
<td>Tingola Fiemese</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sardegna</strong></td>
<td>Sarda, Sardo-bruna, Sardo – modicana.</td>
<td>Sarda, Sarda primitiva.</td>
<td>Sella giara, Del sarcidano.</td>
<td></td>
<td>Suino nero siciliano</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sarda, Dell’asinara.</td>
<td></td>
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</tr>
<tr>
<td><strong>Sicilia</strong></td>
<td>Modicana, Cinisara, Siciliana.</td>
<td>Barbaresca Siciliana, Noticiana.</td>
<td>Girgentana, Argentata dell’Etna.</td>
<td></td>
<td>Suino nero siciliano</td>
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</tr>
<tr>
<td><strong>Toscana</strong></td>
<td>Garfagnina, Pontremolese, Mucca Pisanana, Calvana.</td>
<td>Garfagnina Blanca, Pomerancina.</td>
<td>Cavallo Monterufolino, Asino dell’amiata.</td>
<td></td>
<td>Cinta senese</td>
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<td></td>
</tr>
<tr>
<td><strong>Umbria</strong></td>
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</tr>
<tr>
<td><strong>Valle d’Aosta</strong></td>
<td>Valdostana pezzata nera, Valdostana Castana.</td>
<td></td>
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</tr>
</tbody>
</table>
### List of varieties and races included in the RDPs of Italian Regions

**Sheep**
- Rosset
- Valdostana

**Goats**
- Valdostana

### Veneto

<table>
<thead>
<tr>
<th>Cattle</th>
<th>Rendeva, Bruna linea carne (Original Braunvieh), Grigioalpina, Burlina.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses</td>
<td>Norica, CAITPR, Maremmana.</td>
</tr>
<tr>
<td>Sheep</td>
<td>Alpagota, Lamon, Brogna, Vicentina o Foza.</td>
</tr>
<tr>
<td>Pultry</td>
<td>Pollo, Robusta Limonata, Robusta Maculata, Ermellinata di Rovigo, Padovana, Polverara. Faraona, Faraona Camosciata, Anatra, Germanata Veneta, Tacchino, Comune Bronzato, Ermellinato di Rovigo</td>
</tr>
</tbody>
</table>