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National Survey on the Role of Innovative Market Mechanisms

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Opportunities for farm seed conservation, breeding and production

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National Survey on the Role of Innovative Market Mechanisms

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1. Introduction

This report analysis the linkages between plant genetic resources (PGR) conservation (one of the aim of the new rules on conservation varieties) and marketing tools for the so-called biodiversity produce. Indeed one of the activities pointed out by the Global Plan of Action for the sustainable use of PGR is “Developing new markets for local varieties and diversity rich products”, as underlined in section 14. The development of instruments geared toward a sustainable use of the PGRFA includes appropriate relationships with the market (unpacking what a market is, according to the different relationships between sellers and consumers) and strategies for the valorisation of the produce. Indeed, all the illustrated case studies link conservation, use and valorisation with a particular attention to the linkages between varieties and culture and to the creation of innovative markets more suitable to this specific produce. Particular emphasis will be paid to the linkages between Geographical Indications and plant genetic resources conservation, finding a bridge between different tools and policies developed by the European union.

The aims of this report are:

- a. To show the importance of local varieties in the GIs systems;
- b. To show the existence of informal seed systems in Europe, to date linked to niche markets;
- c. To analyse how and whether these niche markets could conserve agrobiodiversity;
- d. To check the possible linkages between GIs and conservation varieties.

2. Geographical Indications in Europe

According to the general definition provided by the World Trade Organization’s Trade Related Intellectual Property Rights (TRIPS) Agreement adopted in 1994 Geographical Indications (GIs) are “indications which identify a good as originating in the Territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin”. In Europe the legislative framework is set up by the new Regulations on geographical indications, designations of origin (510/2006) and on traditional specialities (509/2006), specifically issued so as to comply with TRIPS rules (Raustalia and Munzer, 2007; Visser, 2007). They cover different labels and products with the following characteristics:

1. Protected Designation of Origin (PDO) - covers agricultural products and foodstuffs which are produced, processed and prepared in a given geographical area using recognised know-how.
2. Protected Geographical Indications (PGI) – covers agricultural products and foodstuffs closely linked to the geographical area. At least one of the stages of production, processing or preparation takes place in the area.
3. Traditional Speciality Guaranteed (STG) - highlights traditional character, either in the composition or means of production.

As showed in figure 1, in Europe there are 1,271 geographical indications registered, of which 663 are PDO, 564 PGI and only 44 TSG. In the class 1.6 – regrouping fruit, vegetable and cereal fresh and processed – one can find 233 GIs, but in this case the majority of the food products are listed as PGI. The divide between North and South Europe agriculture can easily be verified analysing the nationality of these GIs. According to figure 2, Italy, Spain, Portugal, France and Greece have the majority of GIs listed in class 1.6, showing how in these countries there is still a strong connection between food, culture and the so called “terroir”. We consider this class of GIs the more pertinent for our study, because it is on vegetable, fruit and

cereal that agrobiodiversity and landraces in particular have a strong relevance in comparison with processed food as cheese and meat.

As said by Bérard and Marchenay (2008):

“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 and plants; the methods used to preserve plant material and to maintain reference collections; the sanitary status and germination capacity of batches of seeds and plants. All of these requirements must be addressed if the resources in question are to occupy their rightful place within the framework of a policy of conservation and perpetuation that avoids derivatives and approximations.”

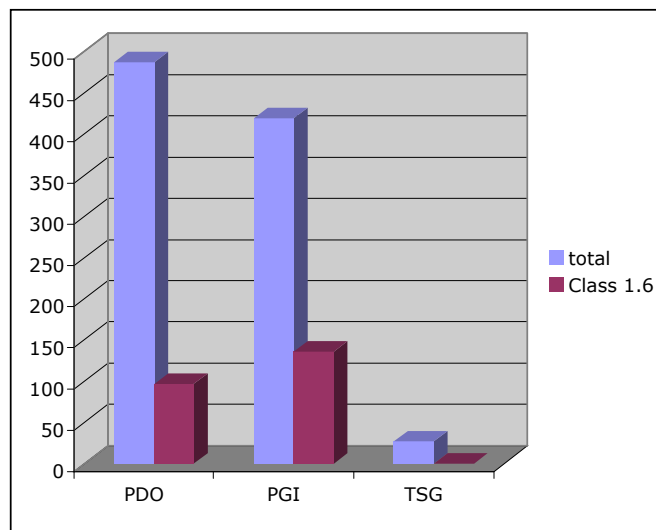


Figure 1: GIs in Europe (source EU DOOR - Database of Origin and Registration - <http://ec.europa.eu/agriculture/quality/door/list.html>)

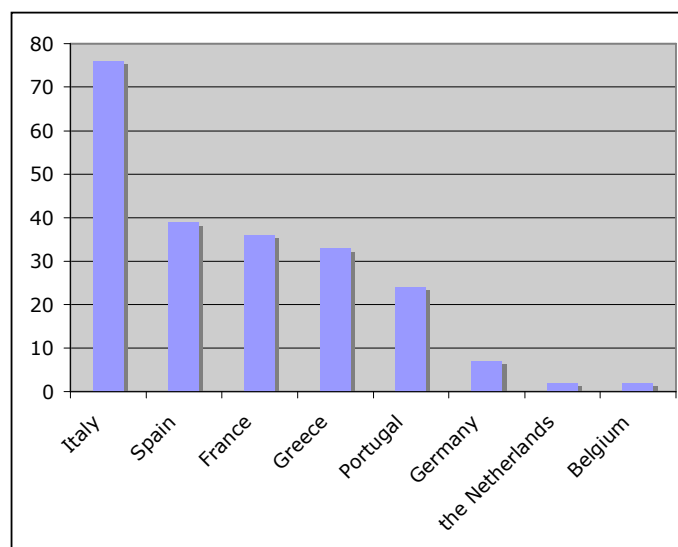


Figure 2: GIs of the class 1.6 registered in the different member states (source EU DOOR - Database of Origin and Registration - <http://ec.europa.eu/agriculture/quality/door/list.html>)

It should be noted also that if within the TRIPS framework GIs are considered as a property right like trademark or copyrights, the EU legislation offer a more broad view of this tool giving it a new dimension as policy instrument. At this regard the promotion of GIs should go hand in hand with endogenous local development and biodiversity and cultural heritage conservation (Thévenod-Mottet, 2010). Unlike intellectual property that protects and promotes innovation, GIs are thoughts to protect tradition and reputation and more important their nature is collective and open (according to the rules describe in the code of practices).

3. Italy

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 residual importance, still conserves its importance for a wide portion of the population. Despite in the last few years the number of farming workers has fallen below one million units, Italy still holds firmly the third place in Europe 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 with 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 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). More than 70,000 farms and 5,800 food processors are working in this sector, which has an overall value of 5,400 millions of euro. Only export accounts for 1,323 millions of euro. Therefore it is difficult to define this quality market as a niche for Italy, on the contrary it could be considered as a trigger of the overall food chain.

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).

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3.2. White Sperlonga Celery - a new local variety¹

“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)

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 agrobiodiversity 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.

3.2.1. 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 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

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¹ 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).

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

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.

3.2.2. 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. 3). 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 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.

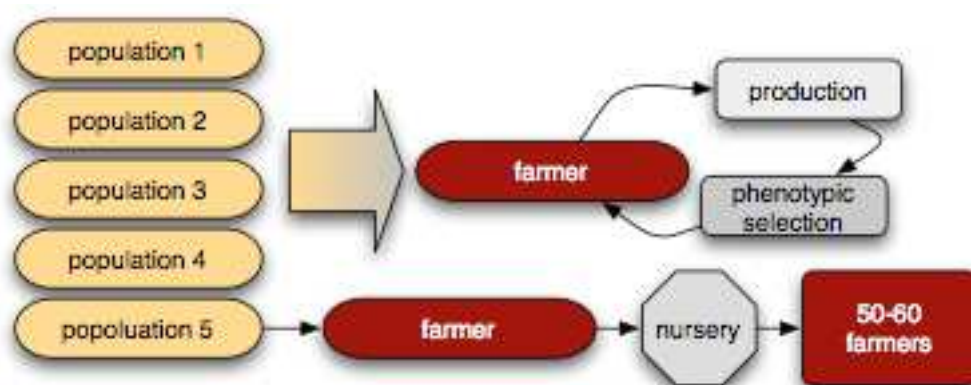


Figure 3: The Seed supply system of the White Celery

3.2.3. 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 N° 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 requires all production phases to be completed within the territory hence it could easily have been considered a PDO to all intents and purposes.

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 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.

QuickTime™ and a decompressor are needed to see this picture.

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. 3. 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).

3.2.4. 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 former. 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.

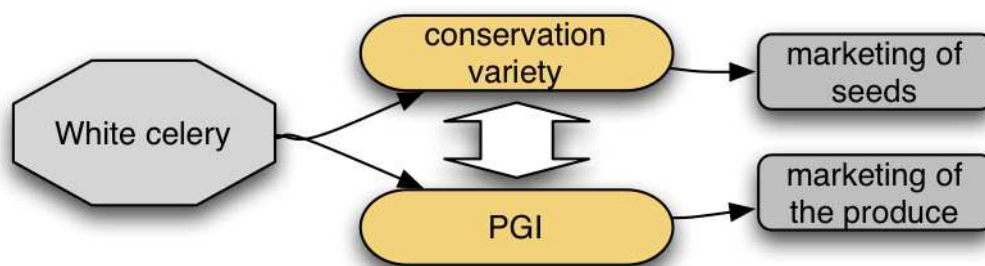


Figure 4: The link between PGI and seed legislation.

In the light of this, sustainable use of the White Sperlunga 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.

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3.3. Marano Vicentino a corn variety in Veneto: the importance of being famous!²

"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)

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; *Bragantini* 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.

² 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.

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 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 varieties are still a small productive niche of 80-90 hectares concentrated in the foothills. Indeed it the “rediscovery” of varieties like Marano or Biancoperla³ 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.

3.3.1. 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 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

³ 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.

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 onset of

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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.

3.3.2. 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.

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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 multi-crop 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 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 unmistakable 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."

3.3.3. The battle for the name

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.

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Figure 5 : The leaflet of the new Marano 0501, marketed by SIS.

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 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 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.

3.3.4. 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.

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

“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)

The process of recovery and revaluation of the Quarantina 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 at 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 land. The disappearance of farmers and with them the knowledge and varieties that they grew until yesterday is typical of Ligurian agriculture.

3.4.1. Rediscovering the Quarantina potato

The Quarantina white potato 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 *bonn-a 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).

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.

Other names for the Quarantina white in common use in the Apennines	
	Quarantina [Quantin-a], Bianca di Torriglia [Gianca di Turrigia], Bianca dagli occhi rossi [Gianca cui oegi rusci], Bianca [Gianca].

3.4.2. 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.

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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:

- The obligation to give notification of planting and harvesting, specifying the total quantity of potatoes divided by variety and typology;
- 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;
- The obligation to market grade A potatoes in 2 kg packs in consortium bags with Consortium labels;

- 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 reseeded 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.

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.

	2000	2004	2008
Producers	20	54	56
Average age of producers	38	38	n.d
Affiliates (restaurants and sales points)	10	52	60
Total Production	15 q.	60 q.	n.d
Sell-out price	€/kg 1	€/kg 2,5	€/kg 2,5

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.

3.4.3. 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.

3.4.4. 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.

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3.5. Synergies between Natural Parks and agrobiodiversity: the example of the Abruzzo

“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)

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.

3.5.1. The evolution followed by ARSSA

ARSSA began approaching this world of culture, crops and traditions in 1996 launching an in-depth study of what was still being grown. This brought the "Collection, conservation and study of germplasm of species of autochthonous agricultural interest in the Abruzzo Region" project into existence in 1996. It was funded by the European Union jointly with the Faculty of Agriculture of the University of Perugia. The scope of the project was to become acquainted the local varietal heritage by an initial investigation, after which to characterise and conserve the varieties identified. The initial conservation strategy was only envisaged *ex situ* with a number of in situ catalogue fields for fruit trees. Twelve species were examined: soft wheat, durum wheat, spelt, lentils, chickpeas, beans, black-eye beans, peppers tomato and apple, pear and almond tree. 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.

3.5.2. 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 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.

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.

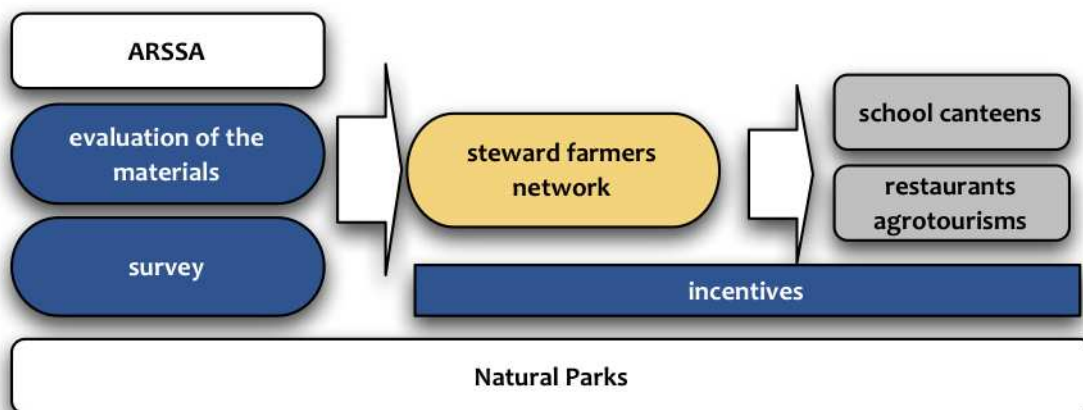


Figure 6: The Abruzzo conservation system

3.5.3. 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.

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4. France

There are 2 main Geographical Indications in France: PDO and PGI. *Appellation d'Origin Contrôlée* (AOC) was the French used before the EU regulation on GIs and it is one of the eldest labels characterising a food product and its origin. They identify a product by its geographical origin and guarantee its genuineness and typicality by the respect of constant local know-how. Those typicality and genuineness confer quality to the product, based on the precedence and fame of its process and name. Those appellations were mostly concerning wines and brandies. In 1990, they were extended to the milk products and then to other foodstuffs like poultry, honey or vegetables and fruits. There are now 3044 AOC in France (especially due to the great French vineyard). There are 7 AOC for vegetables (those we are particularly interested in).

Between those 7 GIs, 5 of them allow farm saved seeds (Coco de Paimpol, Piment d'Espelette, Oignon doux des Cévennes, oignon de Roscoff, Lentille Verte du Puy) but not the two others (pommes de terre primeurs du Roussillon et pommes de terre de l'île de Ré). Indeed, for potatoes, the French law about vegetal varieties and sanitary regulation forbid the on-farm seed production. The farmers are thus constrained to buy certified seeds of registered varieties (those varieties are specified in the code of practices of these AOC and are modern varieties).

In the framework of the FSO European project, this report will describe more in detail 2 French PDO (AOC) and one PGI and their interesting links with seeds and varieties: "Piment d'Espelette", "Oignon de Roscoff" and "Petit épeautre de Haute Porvence". A global list of French GIs and their link with the seed system will be found in Annex I.

4.1. The *Piment d'Espelette*

4.1.1. Origin of the cultivation

Pepper was brought back from the « new world » by the explorers in the 16th century. This plant was naturally adapted to the climatic conditions of the Pays Basque (a mountainous place, in the Pyrenees, in the very South-West of France, at the border with Spain) and especially in the "Labourd" province. This culture rapidly propagated in the farms and was rapidly adopted by the farmers. This adoption generated different local varieties, and among them the "Espelette pepper" (Espellette is a village in the Basque region) or sweet pepper from Basque region. Pepper is used as a spice for dressing, colouring and conservation of food products. The cultivation of "Espelette pepper" is largely adopted by local farmers and is well integrated in the culinary traditions of the region.



4.1.2. History of the AOC

A collective initiative started by the syndicate of « Espelette pepper » was to describe the historical and cultural characteristics of this vegetable, its genuineness strongly linked to its "terroir", with the view to obtain the AOC official recognition. In 1997, the INAO recognized the principle of the AOC "Piment d'Espelette" or "Piment d'Espelette - Espelatako Biperra" (name in Basque language). Starting from this date, the syndicate built a code of practices in order to define the modes of production and transformation of

the product and the organisation of this AOC with a sensorial analysis table. On the first of Decembre 1999, the AOC “Piment d’Espelette” was officially recognized by the INAO. The decree relative to this AOC was published in the official journal on the first of June 2000.

	Number of operators	Number of pepper plants planted	Quantity of powder produced (in kg)
1997	30	195 000	7 190
2000	54	310 000	7 190
2003	85	900 000	33 000
2005	96	1 280 000	52 000
2006	93	1 180 000	60 200
2007	97	1 174 500	32 679
2008	118	1 641 000	68 500

Source: <http://www.pimentdespelette.com/>

In 1997, 30 operators are part of the AOC « Piment d’Espelette », 195 000 plants are planted and 7 190 kg of powder are produced. In 2008, about 118 operators are part of the AOC and they are more diverse than in 1997 (among them 9 small food companies). 1 641 000 plants were planted and 68 500 kg of powder was produced. This activity also corresponds to an activity of diversification in the farms. The AOC was a very efficient tool for the economic consolidation of farms.

4.1.3. Seeds concerns in the AOC « Piment d’Espelette – Espelatako Biperra »

The code of practices of the AOC describes the type of the product in one of its article (n°4). This code allows two different types of varieties for the production: farm varieties and one registered variety. Most of the farmers use farm varieties from their own seed production. In this frame, some informal exchanges exist between farmers so that new farmers can produce pepper, or in order to insure genetic adaptation (necessary for the conservation of the variety). This need can also appear when there is a climatic event and that a farmer loses the total of its seeds, another farmer provides him with new seeds. Because they produce, breed, sort out and conserve their own seeds, the farmers who produce “Piment d’Espelette” are the one who manage the genetic diversity of this product. The practice of this farm seeds production was formalized by the AOC with one limit: “Farmers can use seeds from their *own* farm”. This allows a kind of selection that conserves a genetic intra-varietal diversity which guarantees a “rusticity and an annual adaptation to the climatic conditions”⁴.

4 Catherine Richer, L’AOC Piment d’Espelette, in Biodiversité et savoirs locaux en France



The second type of variety approved by the code of practices is a registered variety called “Gorria” (it’s not a hybrid). It was registered in the official French catalogue by the syndicate of Piment d’Espelette in 1999. The variety is called Gorria in order to protect the name “Piment d’Espelette” which was already given to the AOC (before the registration of the variety). Gorria remains in the public domain (it’s maintained by the syndicate). The farmers are not a lot choosing this ways for producing the Pepper.



4.1.4. Conclusion

The will of the syndicate « Piment d’Espelette » was to protect the denomination of the seeds and the different local varieties against the appropriation by others. The registration of the registered variety homologated for the AOC under another name enables to legalise seeds marketing. The AOC facilitates the diffusion and the free use of the genetic pool but restricts the commercial exploitation of the name “Espelette” to the AOC area.

However, the different varieties used by farmers to produce the “same” product “Piment d’Espelette” are population varieties with thus a certain diversity and intra-varietal variation and different phenotypes. The registration in the catalogues is submitted to the DUS criteria (Distinctiveness, Uniformity and Stability), which don’t recognize population varieties. The registration of the variety Gorria reduces the diversity of the “Piment d’Espelette” to a unique registered phenotype. This variety doesn’t fit with the practices of diversity and variability management instead the spirit of the AOC is to accompany and protect those practices and their evolutions as underlines Catherine Richer: “The AOC lists the different moments of human interventions, without, however, replace the farmers who always adapt their practices to their observations”⁵. This is why the AOC code of practices doesn’t take into account only the commercial variety Gorria but also accepts farm varieties and seeds.

4.2. The Oignon de Roscoff

The “Rosé” Roscoff Onion (*Allium cepa L.*) is a local light pink coloured and sweet tasted onion variety produced in the extreme West of France, around the village of Roscoff, in the Léon region (a well known French basin of vegetables production), in the North-Western part of the region “Bretagne”.



The localisation of the production of the “Rosé” Roscoff Onion

This particular onion is cultivated since the 17th century when onion seeds have been imported from Portugal. It was very useful for the seamen because of its high ascorbic acid and minerals content and its long conservation. This combination of both the elements prevented the appearance of scurvy during the long weeks on boat (DREVILLON, 2009). When the marine activity declines in the 18th century, the onions were exported in Great Britain by the “Johnnies”, nickname of these young Roscoff inhabitants who used to cross, biking or walking the whole Great Britain in order to sell these onions (DREVILLON, 2009).

Today, these young people have not totally disappeared because around 15 persons are still “Johnnies”, even if the selling methods have evolved, thanks to the Internet (SAOR, 2009). The World War II could have definitely stopped the production of the “Rosé”, as called in the region (DREVILLON, 2009). But fortunately, the cultivation never completely stopped and at the beginning of the 90’s, some farmers boosted the production in order to concurrence the industrial produced yellow onion.

4.2.1. The road towards the PDO

In order to obtain a Protected Designation of Origin (the French AOC), some producers decided to create in 1994 the “Rosé” Roscoff Onion Defence Syndicate. This AOC aims at promoting this local variety with a high quality production. The PDO has been preferred to the PGI (Protected Geographical Indication) because some transformation is often made on the product; it is not directly consumed fresh. Indeed, because of its particular fragility and its manual harvest, the production of the “Rosé” Roscoff Onion is difficult to mechanise and thus, adapted to a niche market represented by the AOC.



The logo of the AOC

In order to obtain the PDO, three conditions are required:

- a unique product
- a particular “terroir”
- a local know-how

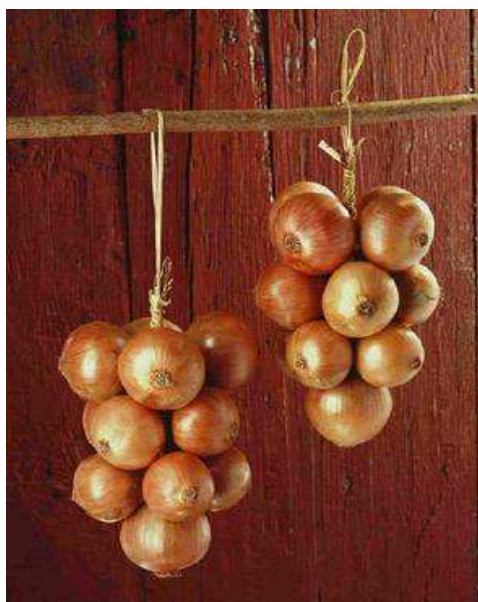
Even if these conditions were already there for a long time, the obtaining of the AOC has been very long and it's only on the 8th of July 2009 that the AOC request was accepted by the INAO (National Institut for the Origin Naming), after a fifteen years process (DREVILLON, 2009) and the final decree was officially published the 19th of October 2009.

4.2.2. Specificities of the AOC “Oignon Rosé de Roscoff”

The first condition to obtain an AOC is to have a particular product. The “Rosé” Roscoff Onion is a typical product because of its fruity taste and its colour: pink to copper-coloured pink. Moreover, the onions are harvested before their complete maturity which brings a flavour juicy and sugared.

The second condition, the specificity of “terroir”, is also present in the “Rosé” Roscoff Onion because of its limited traditional production area. Today, only 24 municipalities of the Léon are allowed to produce this AOC (DREVILLON, 2009). These 24 municipalities have been chosen for their common characteristics of soft oceanic climate and muddy soils, different from the rest of the region which confer to them a unity of “terroir”. Moreover, to be certificated AOC, the onions have to be cultivated within strict specifications: low nitrogen fertilization, particular tide, choice or the fields, interdiction to treat the onions for their conservation. Nevertheless, the most important point is the harvest. It has to be on the right date, between the end of July and the beginning of September, which allows a good conservation and a fruity taste (SAOR, 2009; JEZEQUEL, 2009). Finally, all the seeds and plantlets have to be produced in the AOC zone.

The third and least condition is represented by the local know-how which is very important to distinguish the product from the others. The “Rosé” Roscoff Onion has to be sold in a plait where the biggest onions are at the bottom. The last one and thus the biggest, is called the “penn kapiten”.



The typical presentation of the “Rosé” Roscoff Onion

The selling by plaits is done in order to insure a good conservation of the onions (as they are not treated) thanks to the stems which are not cut (SAOR, 2009). The production is actually realised by 56 producers who grow about 65 ha which produce approximately 1300 tonnes every year (it's about ten times less than during the sixties). Thus, with an average of 20t/ha, the yield is barely the half respect to the industrial yellow onion as a consequence of a low input and low mechanised cultivation (SAOR, 2009). In

order to control the respect of the criteria of the AOC, conformity controls are made. They can be made by farmers, by the syndicate or by an external organism (MASSINI, 2009).

4.2.3. “Rosé” Roscoff Onion seed production

The first thing to remind there is that the seed has to be produced in the AOC zone. Two types of seeds are allowed to produce this AOC: registered varieties and farm seeds. Two varieties are currently registered for the production of this AOC: “Keravel” and “Jack”. They both have been registered in the French official catalogue of the seeds in 1999. Only the variety “Keravel” is produced by an official seed company, the OBS (Brittany Selection Organisation). This seed company is not a private company but a part of the big cooperative of the basin of vegetables production and thus belongs to the farmers. So it’s specifically dedicated to the needs of the Léon region and thus creates and produces seeds of the main productions of the vegetables basin.

The variety “Jack” is only propagated by farmers because it is in the public domain. But despite this possibility, as a consequence of the European regulation, these farmers cannot sell their own seeds production. In order to sell it, they have to be agreed by the OBS which can certificate a farmer as a “Rosé” Roscoff Onion seed producer. Besides this system, farm seeds are allowed in the AOC. This authorization allows the farmers to produce their own seeds to grow “Rosé” Roscoff Onions with their proper genetic sources but does not allow them to exchange or sell these seeds or plantlets, in accordance with the European legislation on seed regulation. Thanks to this possibility, the farmers who want to produce their own seed are free to preserve and breed their own variety, often handed on from generation to generation.

4.2.4. The “Rosé” Roscoff Onion AOC, a place for the traditional diversity of the genetic resources

Both seeds, the OBS certificated ones and farm seeds, come from population varieties. In order to register the varieties to the official catalogue, the diversity within “Keravel” and “Jack” has been reduced to fit with the characters of DUS (Distinctness, Uniformity and Stability) requested for the homologation. But this is never done for the farm varieties that have more diversity and consequently, diverse phenotypes. Some controls can take place for the farm varieties on the final product in order to assess if the type of the onion described in the AOC is respected (this controlled is done by an external organism).

4.2.5. Commercialization and Valorisation

A great lot of the production is sold on the markets or with few intermediaries. However, some are sold in supermarkets under the brand “Prince de Bretagne”, commercial brand of the SICA Saint-Pol de Léon (the SICA is a big organisation of producers of the zone). Thanks to the AOC, the marketing of the products is insured and protected against the rest of the onions. Moreover, the AOC allows a facilitated communication with the consumers (JEZEQUEL, 2009).



The diverse qualities of this onion combined with the recognition in AOC insure a very good valorisation of the product. One kilogram is sold between 3 and 4.9€ when it is often less than 1€ for the yellow onion. Nevertheless, some anxieties came about the price since the AOC has been obtained.

Limitation of the production, financing of the controls or high transport costs⁶¹ create the risk of a raise of the prices (MASSINI, 2009). The product is today very looked for by the cooks and all the persons interested in the typical fruity taste of this onion. The cooks like this onion because it is faster to cook and more easily digested (SAOR, 2009). As a consequence, a great lot of recipes have been created with the “Rosé” onion.

Finally, the Roscoff onion has also some success due to some therapeutics qualities given by its component, especially the “quercetine”. This onion helps the body to struggle against the diabetes, the osteoporosis, and the cardiovascular and respiratory troubles (SAOR, 2009).

4.2.6. Conclusion: a good example of cohabitation between two different seed systems

Even if the two varieties recognized by the AOC, “Keravel” and “Jack”, have been bred to fit with the DUS standards, they are very linked with farm varieties because they are issued from them. They have been bred out “living” genetic resources and not out of seeds from gene banks. This underlines the essential role of the farmers in the *in situ* conservation of the varieties. The registration in the catalogue of both of the varieties was essential to obtain the AOC but the seed self-production is the main method used. The farmers can thus select, multiply and produce their own seeds. This encourages the perpetuation of a specific regional know-how.

This AOC is a good support for the recognition of the farmers’ role through the recognition of farm varieties on an equal footing with the DUS ones without any preference. Of course there is a control but it can’t be otherwise as far as there is a contract to respect (AOC “standards”). It’s interesting to note that this control is on the final product, which is respectful of the farmers’ breeding methods. The importance of the farm seeds is now recognized by the national institutions like INAO which recognizes the role of the farmers to preserve agro-biodiversity. Even if it stays in a contractual frame, this AOC contains a clearly open space for living biodiversity and farm seeds. We can just regret that besides the good recognition of farmers’ role at the local level, the European regulation, which forbids exchanges among farmers, remains a limit for the evolution and adaptation of these varieties.

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Thank you to Claire Gouez, technical engineer at the Agricultural Chamber of St Pol de Léon, in charge of the technical process for the obtention of the AOC “Oignon rosé de Roscoff” for having kindly answered our questions.

4.3. The Petit épeautre de Provence

4.3.1. Origin of the cultivation

Small spelt is part of the gender *Triticum* and of the species *monococcum*. It’s one of the more ancient cereals cultivated in the Mediterranean basin. According to the syndicate of small spelt of Provence, it is named in the Bible and was known by the Egyptians. This cereal was spread in the Mediterranean area (Greece, Spain, France, Italy...) and also in continental Europe (Danube valley for example). It arrived in the

⁶ Before the AOC, the plaits were made only after the transport but now, the AOC obligates to make them in the AOC zone and so, the transports costs rise because the plaits take more space than the loose onions.

French region of High Provence (South-East of France) at the Neolithic period. It's possible to find some indications about it in the regional agricultural bibliography since 1338 (see table above).

Table: dates when we can find some written references about the small spelt cultivation in the region of High Provence and precisely, city where it can be found (and number of the French administrative section which correspond to the place):

Date	Place
1338	Lardiers and Manosque (04) in the commanderies of the religious order of the Hospital of Jerusalem
1707	Trans (83)
1765	Saint Jalle (26)
1774	Oraison (04)
1775	St Christol (84)
1780	Minet (13)
1794	Sault en Apt (84)
1803	Les Mées (04)
1835	Niozelles et Dauphin (04), Le Crestet (84)
1836	Sisteron (04)
1874	Chavailles (04)

Source: IGP application "petit épeautre de Provence", version n°2, April 2008

In France, small spelt production was estimated to 1 000 tonnes marketed by the storing organisms in 1996 by the ONIC (National Interprofessional Crop Office). This production doesn't take into account the direct sell which represents 260 tonnes according to estimations. The producing French regions are: Provence-Alpes-Cote d'Azur (511 Tonnes), Rhône-Alpes (172 Tonnes), Bourgogne (276 Tonnes), Alsace (41 Tonnes), Centre (98 Tonnes) and South-West (162 Tonnes).



This cereal represents an agronomical interest for poor soils thanks to its deep roots. It is particularly well adapted to High Provence pedo-climatic conditions (altitude between 400 and 1 300 m, Mediterranean climate and poor soils or soils with demanding pre-crops). Small spelt today knows a revival especially because of dietetic diets for gluten intolerant people (gluten often from modern varieties).

4.3.2. History of the PGI *Petit épeautre de Provence*

The syndicate was born on 23rd of May 1997 with the view to organise small spelt producers against unfair competition of certain spelt distributors who were selling spelt (*Triticum spelta*) as mall spelt (*Triticum monococcum*) and used to take advantage of the brand equity of small spelt. The aim of the syndicate is "to defend and to promote the small spelt from High Provence". In 2007, small spelt became an IGP managed and defended by the syndicate. This IGP is based on a code of practices which precise the geographical area of production, the mode of production and transformation (hulling) and storage conditions together with the type of seeds.



Since its creation, the number of farmers implied has doubled. Today, several ten or so farmers produce about 150 Tonnes of small spelt grain every year. This PGI is attractive for new farmers, especially those in Organic Farming.



4.3.3. The seed system

The species used by the farmers is *Triticum Monococcum Vulgare*. The registration form of this PGI gives a very precise botanic description of the species. This avoids the very common confusion with “big spelt” or spelt (*Triticum spelta*) which might come from the translation from Provençal language to French language of the word “espéut”, which means any kind of cereal with dressed grain (dressed = spelta in latin).

The document specifies that the seeds used for this production must be produced in the PGI area: “furthermore, the High Provence farmers should plant seeds produced in the PGI area.”. It adds also that as far as there is no genetic selection for this species, the different small spelt varieties used are only population varieties. Small spelt is not registered in the official seed catalogue. It belongs to a non-regulated species and thus the seeds of it don’t exist on the market. They are only on-farm produced. In case of problem of production on a farm, the only way for the farmer to have some seeds back is to exchange with another farmer producing seeds in the IGP area (as mentionned in the code of practices).

We can wonder if the small spelt of high Provence could be registered in the catalogue. It seems difficult because the cereals, to be registered, must be submitted to the DHS and VAT tests and the populations of small spelt, the only seeds used for this production, will not be able to pass those tests. This species has always been bred by the farmers’ mass selection. It could be registered in the catalogue of conservation varieties but two points could be too much restrictive. The first point is the demand for the variety to fit with the DUS tests, enabling only 10% of off-types (and thus the variability and the diversity of the populations could not be well represented); and the second one is the limitation to the PGI area for seed production and marketing which would exclude all the other regions of production.

4.3.4. Conclusion

In this PGI, farm seeds are the only way for the production. More than a way for promoting the product (small spelt) this PGI is thus also a way for promoting farm seeds and varieties. But we meet the same problem than with the other cases studied: if the labels enable farm seeds and varieties for production, the European legislation is a brake because the farmers can’t exchange their seeds.

4.4. General conclusion for France

Very often, PDO use populations bred and multiplied by the farmers and farmers' varieties are well integrated in such labels. However, we rapidly underline that the European seed legislation is not adapted to this kind of seeds. In France, even if the GIs concern niche markets using population and varieties, those seeds are also used in other channels and especially in all kind of products sold directly from farmer to consumer (farm sell and markets, French "associations for the maintenance of small scale farming"...). The potential users of conservation or farm varieties are the farmers who have direct selling channels. This type of marketing is not linked with history, tradition or "terroir" of a specific region (such as in PDO or IGP) but is due to agronomical, gustative, patrimonial or cultural choices. Indeed, the farmers using those varieties most often practice small scale, low input or organic agriculture and in general, they want to adapt their production to consumers. Strongly based on tradition, those farmers who produce, breed and sell are real innovators as far as seeds are concerned. Their practices in term of seed characterisation for example need to be studied and taken as examples in order to suggest new scenarios in term of informal and/or commercial seeds exchanges.



5. The Netherlands

In the Netherlands only two GIs are related to plant-character: the Westlandse Grape and the Opperdoezer potato (which is one of the cases presented). All other GI products are cheeses. However there is a long list of varieties which are hobby-garden varieties but they are not listed in any catalogue or register. There is now an informal initiative with support from the Genebank to make such a list. [to be completed by Conny]

5.1. Sunnan, a story of local baking wheat

The story of Sunnan, a cultivar that has been re-introduced and used by farmers in the south-western part of the Netherlands is a tale of interactions between farmers and non-agricultural people in the region, of various other stakeholders in the food chain that has been helped by a Bhutan conservation initiative. The story shows that storing genes seems simple compared to what was done here in terms of cultivar selection, agronomy and soil nutrient management as well as milling, baking and selling of the wheat cultivar in question. This article covers the background, agronomic and mindset issues involved in the conservation of this particular cultivar.

5.1.1. Sunnan variety

Relations between the Dutch town of Zonnemaire and a rare baking wheat variety called Sunnan are farfetched, but interesting nevertheless. The town Zonnemaire is located on the island of Schouwen Duiveland in the south-western estuaries of the Netherlands. The area is called Zeeland (sea-land) and its people are called 'Zeeuwen', with a strong tradition of being seafarers, merchants, fishermen, crop-producers and 'polder-makers'. The 'Zeeuwse Vlegel' is Dutch for 'Zeeland-flail', a brand name for local wheat products grown only in Zeeland.

In 1991 the bread became available in the bakery shops through the joint initiative of farmers, millers, bakers the Zeeuwse Environment Federation and consumer and agricultural organizations. Now the brand is an recognized 'regional product' is reserved for several wheat products. For some time it also was used for a regional beer from barley, abandoned because of difficulties with the brewer.. In the province Zeeland there are 86 bakery shops and supermarkets sell Zeeuws Vlegel bread and other products, in the province of Brabant nine and Zuid Holland counts with six shops at approximately ten different locations (www.zeeuwsevlegel.nl). The variety Sunnan played an important role in this initiative.

Sunnan is a wheat variety of the Svalöf Weibull breeding company in Sweden, represented in the Netherlands by Cebeco Handelsraad. It was granted plant breeders rights in 1986 although it only(!) scored 93 % of the average grain yield of the varieties available at that time⁷. It was nevertheless approved and listed because of its disease resistance and bread-baking quality, which in particular in those years was receiving special attention of the Committee responsible for composition of the Variety list in the Netherlands (Commissie Samenstelling van de Rassenlijst). It is also a rather tall variety and its grain does not sprout easily on the plant. Its endosperm was yellowish, giving the bread a recognizable dark color. In 1991 the variety was withdrawn from the Variety list (on request of Cebeco and Svalöf Weibull) and Cebeco stopped supplying seed. Farmers of the Zeeuwse Vlegel have continued using it, making use of 'farmers' privilege' in which farmers are allowed to save their own seed for their own use. However, for the seed to be commercially available, farmers had to pursue re-registration. Svalöf Weibull, by withdrawing the variety from the Variety list, had no plant breeders rights on the variety anymore and was also not interested in re-registering it.

⁷ Sunnan yields currently under Zeeuwse Vlegel regime 6-7 tons vs 9-10 tons for other wheat cultivars under conventional regimes (Ecooperation, 2000).

The farmers sent a letter to the Committee of Plant Breeders Rights (Raad voor Kwekersrecht) and requested re-placing Sunnan on the variety list. .. In 1997 and 2000 field evaluations of the material were done on the Rusthoeve farm, part of the Dutch agricultural research system, and bakers related with the Zeeuwse Vlegel did baking trials in 1998-2000. The Sunnan as maintained by the farmers of the Zeeuwse Vlegel resulted the same as the breeder-seed of Weibul and thus, the Committee did not see any obstacle to place Sunnan back on the Variety list in 2000. The testing and registration process were supported through a special project which formed part of a 'reciprocity agreement' between the Min. of International Cooperation and Bhutan, which ran from 1997 to 2000 (Ecooperation, 2000). The Bhutanese Minister of Agriculture indicated the initiative as most valuable in relation to conservation of genetic resources and entailed a fund of USD 100.000 (at that time NLG 180.000), which they mostly used for further search and testing of potentially useful wheat varieties. In addition, it might have given the initiative the visibility that helped easy replacement on the variety list. Sunnan would be- and is still - maintained by the Zeeuwse Vlegel, under control of the AGRO NAK who they have contracted to verify the production regulations which they formulated for their crops (i.e. use of organic manure, no pesticides etc). Currently the cooperative of farmers who form the Zeeuwse Vlegel grow approximately 17 ha of grain, of which 5- 7 ha with Sunnan, the last grown principally by two farmers. These two farmers, of which Joop de Koeijer is one, keep part of the grain harvest to be used as seed in the next planting and for others who may be interested in sowing the Sunnan variety. They are the ones maintaining the variety.

5.1.2. The drive and definition of 'local' brands

The late eighties of last century were a time of crisis in trust between urban and rural people, dropping prices of farm products, changed thinking on use of fertilizers and other agrochemicals as well as greater interest for nature-values in farming. Farmers discussed these issues, also in this south-western part of the country, also in the south-western parts of the country, the region where Zeeuwse Vlegel was eventually produced. Their women discussed the same issues but in separate meetings and they were the ones that wanted to actually 'do something' rather than to 'just discuss'. They started to meet with representatives of consumer groups and environmental activists to discuss the production of a local product with a local brand of baking quality wheat from local land in a way that would give a new profile to farming. With that the women challenged the men to make it work.

One cause of the concern over a 'baking quality' wheat was that over the years the focus of wheat breeding and cultivation in the Netherlands had increasingly been on producing more grain to feed the masses. The result was a more grain in terms of quantity, but with a lower quality in terms of baking. Stress on grain quantity had gone at the expense of especially protein content of the grain, an important indicator of baking quality. The quest for quantity had resulted in choice of wheat cultivars with suboptimal baking quality, rendering the grain to feed-grain unfit for baking. Not only were current wheat varieties were not suited anymore but also the cultivation and especially manuring practices did not anymore favor production of a 'baking-quality' wheat. In addition, the research system was skeptical about the possibility to grow wheat with baking quality, bakers did not believe that they could have a bread that would attract special attention of the consumers, and the farmer community itself was suspicious and not supportive of a 'wheat growers' movement that might undermine existing practices. At that time a young farmer, Joop de Koeijer, who almost finished his studies in 'Wageningen Agricultural University', took up the challenge with 'his' study group of young [male] farmers that he had just joined in 1987.

After some formal and informal searching by the group they found a farm adviser with a special hobby in wheat varieties. That man remembered the potentially useful variety 'Sunnan' . After some discussion with the regional research centre, a range of varieties were tested, of which Sunnan was one (see above) The next problem was that 'Sunnan' was not anymore on the official 'variety', so where to buy it?. A second challenge was to grow the grain practically, in an 'environmentally responsible' and 'economically attractive' way. Environmentalists had been part of the process to establish the 'Zeeland-flail' brand and the challenge was to produce environmentally friendly but not strictly organic. In other words, neither spraying with agrochemicals (herbicides and hormones) was allowed, nor use of chemical fertilizer. Animal excreta were allowed but that required practical aspects

of weed control, fungus pressure and nitrogen use to be mastered, and that a certification or branding method needed to be found to ensure the public confidence and to avoid farmers' cheating. A rather novel way of certification was the use of big boards advertising 'here we grow Zeeuwse Vlegel', a low cost method to ensure that the general public helped ensure that participating farmers would not use chemicals

5.1.3. Changing agricultural and bread baking practices

The hardest issue in terms of agronomy was the nitrogen application in the form of animal manure in spring, in order to achieve a good baking quality. This needed farmer experimentation and the manuring breakthrough was a EUREKA-moment sometime in 1989/90. It was the application of manure by the end of April when tillering had already stopped and when stem-stretching started, providing the nitrogen needed for grain fill and higher protein content. This Eureka moment was a vital injection of enthusiasm for the group of farmers, and more energy was still needed for the next steps.

The initiative of the farmer group was met with apprehension in the community. Not only the research community and millers cum bakers had to change their mindset. Even some young farmers participating in the study group did not grow the grain for the Zeeuwse Vlegel at their own farm because of distrust among their fathers on the new methods. The deeper layers under the distrust included fear that 'conventional' farmers might be forbidden to use agro-chemicals and the like if this experiment would succeed. That reflects another mindset change in the quest to establish and use new or older varieties.



A picture tells more than a thousand words, with Joop de Koeijer (green jacket in the centre) explaining issues of soil and seed to visitors. The picture shows the bare soil from which the wheat still has to emerge while the sign states that this is where 'Zeeuwse Vlegel grows [already]. Some hope is required for the future indeed. One of the guests is from Bhutan, the country that awarded the Zeeuwse Vlegel with a relatively modest fund, but which greatly influenced the initiative in getting the Sunnan back on the variety list. The straight line of the horizon is the top of the dike beyond which the sea stretches.

5.1.4. The baking, selling and branding of the bread

The final major challenge was also to include millers and bakers, in order to 'process the special 'Zeeuwse Vlegel' wheat for bread and cookies. A local baker who was an old school friend and soccer mate of Joop de Koeijer could not refuse to help his old friend even if he too was skeptical about the possibilities to mill, bake and sell the grain-products of the Zeeuwse Vlegel.



View of Zonnemaire, a village built on a dike that was made to protect land which now grows Sunnan wheat (left), a board advertising the 'Zeeuwse Vlegel' as 'honest bread from Zeeland land' (centre), and the results announced on the 2009 baking quality with ... and Joop de Koeijer from left to right in the middle flanked by two bakers of the 'Zeelandia- company' that now supports the work on the Zeeuwse Vlegel.

Production of Zeeuwse Vlegel wheat is now down from an all time high of 155 ha in 1992 (twice the demand at that time) to a much more modest 25 and even 17ha in 2009 of which Sunnan covers 5-7 ha. In spite of the modest success, the main feeling is one of satisfaction while the story goes on. Cracking the tricks of agronomy, milling, grinding, baking and selling is something to be proud of. Even the tricks of 'certification' were solved in a non conventional and creative way. Indeed, the grain is produced in a 'sort of semi-organic way' and the Zeeland's people thriftiness tries to avoid expenses [of certification] when possible. 'Certification' on the agronomic side was done by placing large boards in fields of Zeeuwse Vlegel wheat, announcing that this is where Zeeuwse Vlegel is grown. In that way the general public could alert the organization about farmers spraying and fertilizing against the rules. That worked well and a rare case of misbehavior was identified in time. At the end of the chain, bakers were supplied with a 50 wafer labels per bag of 25 kg flour, allowing them to stick them on the loafs of bread to prove the Zeeuwse Vlegel quality to customers. The Zeelandia company tests the flour annually to also issue a baking-advice to bakers for each harvest.

Importantly, the idea is to bake the Zeeuwse Vlegel bread in the same line as conventional bread, unlike for example the spelt bakers from Maastricht who suit the oven and baking practice to the particular demands of the Spelt. Also, the Zeeuwse Vlegel flour is a mix of grains with Sunnan as a mainstay, accompanied by winter and summer wheat cultivars like Renan, Ilias, Lavette, Apache and Julius. They are also not available commercially anymore in Sweden. Zeeuwse Vlegel farmers maintain their own seed (and the cultivar is still registered and will remain registered unless there is no interest in the variety anymore or a request to remove it from the list (Henk Bonthuis, personal communication).

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Joop de Koeijer, Henk Bonthuis, Jan Koeman

5.2. Opperdoezer Ronde, from whales to a peculiar potato

The 'Opperdoezer-round-potato' is a rare case of a potato cultivar that has the status of Protected Designation of Origin (PDO), in Dutch a BOB (Beschermde Oorsprongs Benaming). It is produced by a community of horticulturists some 50 km north of Amsterdam as the crow flies, in an approximately 1.5 km radius around the church-tower of the Opperdoes town and with a relatively large commercial interest. The combination of cooperative marketing, virus-problems that were overcome by keen selection work, a small-scale type of 'farming' and the special taste of hand-

harvested potatoes makes the potato attractive. Marketing is done on small-scale directly at the farms with farm-shops and in larger quantities via supermarket chains and potato-traders. The genetic material comes from a mutation some 150 years ago and it was salvaged through hard work by the local producers over several generations. The potato is part and parcel now of local village culture but continues to face a struggle for survival as the community faces challenges to find successors on the farms, answers to changing markets and pressures to mechanize that could result in a trend to harvest of larger and more mature potatoes that supposedly have less taste.

5.2.1. Introduction

The Opperdoezer-Round (Opperdoezer Ronde) is a peculiar potato with a peculiar history, grown in a radius of approximately 1.5 kilometer around the church tower of the small town Opperdoes at the edge of land and sea in the north-western parts of The Netherlands. Different from the cultivation of most potatoes in this country it is grown by small producers that are more horticulturist than crop farmer. And in accordance with this almost 'artisan nature and taste of the potato as well as its cultivation', the most avid aficionados of the Opperdoezer-round potato believe that it should still be harvested at a very young stage, very immaturity by hand. Combined with the very early planting (due to proximity of lots of water) and the very early harvest it escapes disease like Phytophthora and nematodes to some extent, allowing a follow up crop and even implying a possibility for 1:1 rotation. The 'aficionados' believe that 'their' potato should not be peeled, that it needs to be cooked in plenty of water and that it should be eaten in a special way (cut in four parts and dipped into melted butter!). These potatoes now are the delicacy of 5-star restaurants, helped among others by one of the growers who is a ardent and colorful ambassador of the potato. This paper describes the origin of this special potato, how the cultivar became almost extinct and how it was 'revived', achieving the status of Protected Designation of Origin (PDO). Together with the Westlandse grape, this is the only Dutch agricultural crop product with a EU protected status, next to 10 different type of cheeses. Still, its future is not secured, in spite of its unique place in the market. The growers of this moment and the modern fashion-consumers do like the potato, but the same growers themselves might at this moment become extinct due to factors like a lack of successors and because supporting rotation crops fetch low prices affecting the profitability of the entire rotation. Moreover, there is pressure to shift into larger scale mechanized harvesting, presumably affecting its taste. Marketing is not a large problem at this stage but the strong supermarkets chains in the country appear more committed to their own profit margins than to the survival of even a very special potato cultivar. This paper discusses these issues with special attention to seed supply in combination with the agronomy, sociology and business aspect needed to keep the cultivar alive.

5.2.2. The Opperdoezer Round

People in the old fishermen's village of Almersdorp, some 50 km North of Amsterdam, moved a few kilometers inland when their village flooded in the 19th century, onto a slight elevation in the landscape, a few meters higher above sea level, now called Opperdoes. In addition, because their mode of [whale]fishing had become difficult and unprofitable, they were forced to supplement their income and livelihood with crops such as potatoes that could feed the population. The fishermen were not farmers by tradition and thus not bound by cropping traditions, their families surviving on small plots by growing potatoes as 'God allowed them to grow'.

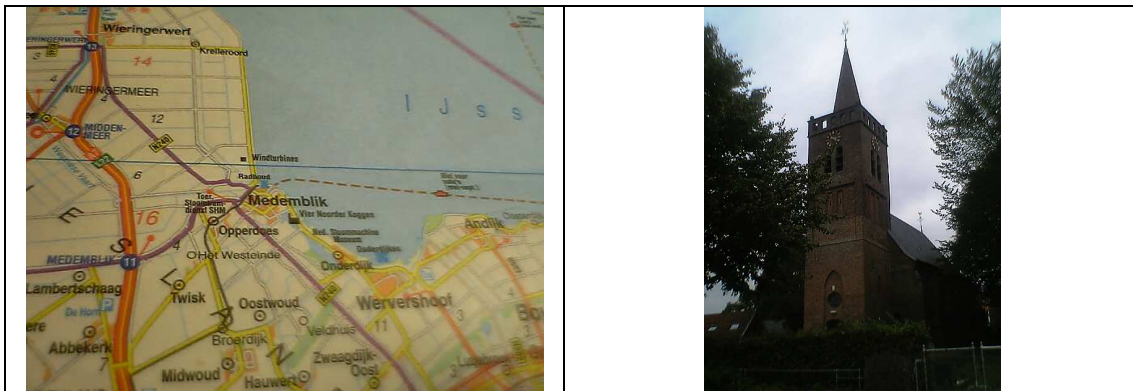
Around 1850 a local schoolteacher in the region, called Sluijs, was one of those people who started to make crosses of the then existing potato varieties. One unexpected result was that he found a type with coarse 'bubbly' (bobbelig) leaves and a distinct kind of tuber, not a cross but a mutant (as the story goes). That potato eventually became later known as the 'Opperdoezer Ronde', a cultivar without known parents. That mutant became known as the 'nine-weeker' (with 9 weeks growing season!). It took mister Sluijs some 5 years to develop and produce enough tubers for seed but eventually the new variety became popular in the region and beyond, well known for its special taste. The potato was sold and consumed mostly locally until a co-operative auction was founded about 50 years after the mutation was found (approx. 1900 AD) with a small selection centre to keep the 'Opperdoezer' in good shape.

Indeed, the Opperdoezer was first eaten in the community as any other potato and as survival kit for the poor, even if it was well known for its special taste. Over time, however, the potato became a well-sought 'primeur' potato in spring time by aficionados within and outside the region. The potatoes were sold rather randomly to whoever would buy in the then rather small and not well developed chains. Some areas in the east of the country and cities like Amsterdam were major markets outside the region until major supermarkets stepped in to sell the potato nationwide. Currently specialty restaurants around the country also serve the Opperdoezer as well, making it almost a fashion in gourmet dining, but the present status did not come without much hard work.

5.2.3. Seed tuber supply

An important next step for achieving the present status was taken around 1960-70 when all seed potatoes in the Netherlands became subject to registration and certification. The Opperdoezer was identified as carrier of the Y^c-virus', just like for example the 'Zeeuwse Blauwe', another potato that now appears to have vanished. As a consequence, the Opperdoezer could have been banned from being traded but in reality the cultivation and transport was limited to the roughly 1 – 1.5 kilometer radius around the church with a few small plots on 'the other side of the old sea dike'. The growers of this variety were keen to maintain this variety for the town of Opperdoes because by now the production was providing an interesting income. The members of the auction managed to find ways to clear their 'Opperdoezer' from virus, using meristeme culture. The virus-free strain was developed and demand continued due to its very good taste.

Currently the local producers have organized the supply of quality seed through a seed-company headed by one of the producers, mr. Visser, who was handed the skills of potato selection from his father and grandfather. Initially the seed tubers were certified by NAK and now by an independent certification agent from Naaldwijk, on behalf of NAK. Over the last years, a total of 5 ha of seed potatoes of the cultivar Opperdoes are certified by the NAK. The co-operative auction for commercializing the ware potatoes ceased to exist in 1979 but the Visser company ensures continuation of supply of the Opperdoes seed tubers the 'seed-potato-growers-association' of Opperdoes with some 83 members is still controlling a total yearly production plantable area of some 170 ha. The selections are well maintained and the top-quality seed, absolutely virus-free material is passed to two seed-producing farmers in the adjacent polders, for further multiplication away from the main cultivation area - all to ensure that a problem with one of those seed producers or one growing region does not annihilate the entire seed-stock. Seed production thus takes place in another, not too distant region, not in the production area that is roughly supposed to be some 1-1.5 km around the tower of the town.





Map of the local area, not far from Medemblik (upper left), the tower of the town church as central orientation point of the very restricted area in which the BOB potato (area restricted variety) can be grown (upper right), and a large and small specimen of the potato, each with different advantages and disadvantages (bottom left) and one of the ways that the Opperdoezer Ronde is eaten locally, cut in four parts and with melted butter (bottom right)

5.2.4. Quality, regulation and recognition.

The restriction of 1-1.5 km around the tower was eventually turned into a blessing by the farmers of the cooperative. “We received a tip from someone of the farmers organization” says Visser “suggesting to request the Protected Designation of Origin (PDO-) status. That could help to provide the farmers and the potato a ‘better profile’ and ‘better protection’ Much help and support was received from people of the national producers association and the Dutch ministry of agriculture. The cultivation of the potato was restricted and formalized to a radius from approx. 1.5 kilometer around the church tower. The PDO status was requested and awarded in 1996. Commercial production outside the special area is well controlled with ‘social networks’ and the control over commercialization of the seed tubers. Whereas production is restricted to the original designated area, sales are not. A large national retailer (Albert Heijn) sells Opperdoezer from its shelves, joined by other [smaller] retailers and farm shops. The members of the growers-cooperative are formally allowed to sell only 5 tons at their own farm shops and the rest is to be marketed via the cooperative.

5.2.5. Cultivation

The Opperdoezer Ronde is produced by small growers, actually ‘gardeners’ that even use green houses and that harvest, occasionally, as early as during the national festivities at the end of April, supposedly at about 10 euro / kg, as a ‘primeur’ product, comparable with the first herring of the season and the first Beaujolais wine. Potentially a contentious issue is that, according to aficionados, the potato for good taste is best harvested at a very tender stage when the skin is still too tender for mechanical harvesting; small tubers are therefore preferred over bigger ones. Associated with the early harvest of the small, tender and tasty potatoes is that they can be harvested before *Phytophthora* strikes and before nematodes become a problem. The Opperdoezer is *Phytophthora*-sensitive and keeping the potato longer implies the use of chemicals, reducing the rather nature friendly image of the potato.

The early harvest is in part due to the temperate climate facilitating very early planting, and caused by proximity of many ditches in the polders where the Opperdoezer is grown. Given the possibility of the early harvest and relative escape from nematodes and *Phytophthora* there is another peculiarity, i.e. the Opperdoezer can be grown in the very unusually dense 1:1 crop rotation ratio, although 1:2 and 1:3 ratios are more common. The high price of the tender potato makes it attractive to use this narrow rotation, but strict regulations make it difficult in practice to use the 1:1 and 1:2 ratios, subject to ‘harvest before the 10th of July, also provided that soil samples are taken annually and analyzed for presence of nematodes (strong restrictions if found infected. If the plot is found infected then the farm is not allowed to grow the potato for 10 years. The manual harvest is very labor intensive and is done with a typical short digging fork.

Some 170 ha are now under cultivation and given the narrow rotations this allows a reasonable production for supply of specialty potatoes at even national level. And like with all other types of farming there are new challenges coming up when earlier ones are overcome. More recent challenges are cost of labor, the pressure on prices of potatoes by large food chains and the persistently low price of especially vegetables like cabbage that used to accompany the Opperdoezer as part of the rotation.

5.2.6. Conclusions

The ‘Opperdoezer’ is a peculiar mutant-potato with a PDO-status, among others because it was banned for trade due to being a virus carrier. A special permit was given to grow the Opperdoezer in a radius of approx 1.5 kilometer from the church tower of the small town Opperdoes. Remarkable differences exist in terms of agronomy with cultivation of ‘standard’ potatoes in the Netherlands. First, most of the crop is grown by small producers that are more horticulturist than crop farmer, being harvested very early and at a very tender stage by hand. This reduces disease pressure, implying a possibility for an unusual 1:1 rotation albeit with conditions. Disease free potato seed is selected and produced, first by the cooperative movement and now by a private company. Almost special rituals accompany the cooking and eating, a special agri-‘culture’ and history indeed, rooted in the town’s traditions. Still, the future of the Opperdoezer is not secure since growers themselves might become extinct with no successors. Part of that lies in the fact that supporting rotation crops fetch low prices, thus negatively affecting the profitability of the entire rotation. Moreover, pressures to shift into larger scale mechanized harvesting affect its taste (later harvest) and strong supermarket chains appear more committed to their own profit margins than to the survival of even a very special potato cultivar.

5.2.7. References

<http://www.opperdoezerronde.nl/>

<http://www.plantbreeding.wur.nl/potatopedigree/lookup.php>

5.3. The ‘Bloemendaalse Gele’, an unforgettable cabbage

5.3.1. Abstract

The Bloemendaalse Gele, a ‘loose’ savoy cabbage has disappeared from the mainstream vegetable shops and markets in the area of Haarlem and Bloemendaal where it originated. However, it is still grown sporadically in different places in The Netherlands, surviving by the grace of hobbyists and aficionados, growers as well as retailers and cooks. For the larger vegetable growers and retail business it is too clumsy a plant that occupies up to 1 m², with lots of loose leaves and little weight. Seed supply comes from a few hobbyists and at least two commercial seed suppliers. Being a notorious cross-breeder and known for its polymorphism, cabbage easily develops into different phenotypes under different selection regimes. Like with other rare cultivars and crops it is probably mainly individual aficionados that keep the Bloemendaalse alive. Unlike with other rare cultivars there is not a lot of talk on special cultivation, processing and/or marketing issues, perhaps because large scale and commercial cultivation and processing is not relevant with a crop that is mainly a hobbyist realm.

5.3.2. De Bloemendaalse Gele

“Dee hackney moak can um bistelle”, said the vegetable seed seller Van Binsbergen in the Dutch town Kesteren. And he continues, “dese voltu los”, ‘phonetic’ Dutch for: “I don’t have that one but I can get it for you. The head is far too loose”. It is also the start of the tale about the so-called Bloemendaalse Gele, a Savoy loose cabbage that is still grown, although sporadically, at different places in The Netherlands, and perhaps more commercially in the in French and the Mediterranean region. It survives by the grace of hobby gardeners and local food aficionados. The larger vegetable retail business considers it too clumsy a plant, with lots of loose leaves and little weight. The seed is available with hobbyists, and commercially from at least two different sources that also produce the seed, ‘Pieter Pith Zonen’ and ‘De Bolster’, both in the Netherlands, among others thanks to demand from within the Netherlands and abroad. It looks like some of the seed exported to foreign companies finds its way back to the Netherlands: the source of seeds from Tabernal Seeds is a company in

England (Tabernal, personal comments). Seed of the Bloemendaalse Gele is also available from Van Der Wal Seeds and Vreeken⁸. They procure seed from different sources, either their own production, that of Hans Kroon or the Bolster. Bejo Zaden, one of the large commercial cabbage seed providers did supply seed of the Bloemendaalse Gele far back in its history, but not anymore since quite some time. But it still has pictures of the Bloemendaalse Gele in its archives. Due to being a notorious cross breeder the genetic variation in the Bloemendaalse Gele is likely to be present in small sub-populations.. More than with the other rare cultivars it is a plant that is kept in the list of ‘forgotten vegetables’.

5.3.3. Traditional cabbage growing

Going back into the early 20th century the older farmers of Northern Holland (well north of Amsterdam) remember how several forms of cabbage growing ruled their world. Cabbage was grown in the polders, some on sand, some on peat and some on clay soils. The proximity of the ditches with a lot of water helped to dampen the climate, reducing frost damage, and facilitating transport by boat, a large advantage in times when trucks and road transport was not yet well developed. Combined with ‘historic accident’ on ‘*who starts what first*’ These specific conditions led to development and production of different cabbages in different areas. Cauliflower was grown more near Enkhuizen, the cabbages that form compact closed heads more around Alkmaar. More local variety exists as some farmers still remember well. Stories go also that in some cases the laborers of the wealthy dairy-farms had some small plots with cabbage in their backyard to the contempt of their bosses, the dairy farmers. However, the cabbage farmers had the last laugh and a large horticulture sector emerged, among others because the main cities and markets were conveniently close by even if, or perhaps thanks to the fact that much of the produce had to be shipped by boat (Rietsema, 1950). Cooperative auctions were established to help get the cabbage sold while much labor for cultivation was available in the large families. Also further down south, around Amsterdam and Haarlem with its adjoining town of Bloemendaal such vegetable growing areas were common of which some can still be spotted. (picture bottom right, photo 1). Succession problems and the need to modernize, e.g. using advantages of scale, forced this semi-urban agriculture out of existence combined with changes in the entire sector. The Bloemendaalse Gele, translated into English as the ‘Yellow one of Bloemendaal’ is ‘native’ from that area around Haarlem where it has been known as far back as at least 1932 (De Kroon, pers. comm.).

5.3.4. The modernization of the last half century

Till roughly the sixties most of the traditional cabbage farmers grew and selected their own seeds, in the process maintaining a vast collection of genes. That situation changes when seed merchants appeared on the scene, often done as a side income for farmers, followed by larger seed companies. Those companies started to sell and produce hybrids. Yields were increased considerably in that way, the shape of the cabbage was better controlled and disease susceptibility was reduced by the modern breeding methods. Mass marketing via auctions and later via supermarkets demanded a more uniform product, whether or not justified by consumer taste, at least in the post-war decades. ‘Taste’ of cabbages has been modified in that process as well, presumably to be more fitting the taste of the modern consumer. New emerging ‘taste awareness’ however sets the stage for this story on the ‘Bloemendaalse Gele’ led by people like Han de Kroon (Van Ruitenburg et al., 2008).

⁸ See <http://www.deoerakker.nl/oranjelijst.htm>



Figure 1. Clockwise from top left: (1) a commercial breeder of Bejo Seeds with an hybrid ‘solid’ cabbage, (2) the Bloemendaalse Gele (a loose cabbage) on a display with ‘unforgettable’ vegetables (see text), (3) the city Haarlem crawling over a formerly vegetable growing area in peri-urban regions of Haarlem and Bloemendaal, at the place where Ruijsdael painted his ‘View of Haarlem’, with left bottom (4) a crop of Bloemendaalse Gele from seed kept but not selected by a hobby farmer (note the variation).

5.3.5. Modern consumers, a variable niche?

Han de Kroon, vegetable wholesaler in Haarlem, protector and promoter of Bloemendaalse Gele smiles when hearing the word ‘forgotten vegetable’ applied to the Bloemendaalse Gele. He says that it is “a very mild cabbage, also sometimes named as the Haarlemse Gele”, and he likes it , in part because his father used to sell it and because he himself sold it after he took over the vegetable shop from his father. Indeed, this cabbage is more voluminous than the modern compact ones, needing approx. 1 m² surface area which complicates transport and storage. The cabbage had been out of commercial production for some 15 years before demand started to emerge again a couple of years back. A hobby-farmer in Broek op Langedijk started to grow the cabbage again and the cabbage is now with more hobby farmers in the region, scattered but persistent, supplying a select number of grocery shops. Even in the very South of The Netherlands this cabbage is now found, far from the original town of Bloemendaal. The uncertain supply is compensated by the special taste. Mr. De Kroon co-authored a book on how to cook and eat the cabbage, alone or together with other such vegetables. The Bloemendaalse Gele may fit well the consumers who feel attracted to slow food idea, the type of consumer that Mr. De Kroon targets with his assortment of vegetables.

Until recently Mr De Kroon used to get his cabbage supply from an old cabbage grower that used to also supply him with seed. De Kroon himself also maintains a small plot for eventualities from where he selects his seed himself from the cabbage plants which he leaves to flower in next summer. Mr De Kroon buys most of his Bloemendaalse Gele cabbages from one farmers north of Amsterdam. He also collects his own seed but since he has several different cabbage types in his garden, it has become a ‘veritable mix of varieties’. Indeed, Bloemendaalse Gele is one of those cultivars that in the Netherlands fall in the category of ‘amateur varieties’ which have had so far a kind of tolerated status: they are not registered anywhere but are still commercialized, albeit for a semi-professional and hobby market only. The Bloemendaalse Gele is one of the 40 cultivars for which the group of people who organized themselves under the network name ‘Eeuwig Moes’ are applying for registration as

conservation variety in the Netherlands⁹. This initiative takes place within the context of a special project funded by the Ministry of Agriculture and coordinated by Centrum Genetic Resources the Netherlands.

5.3.6. References

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⁹ www.deoerakker.nl

6. Spain

The information included in this report is a compilation of the regulation in Europe and Spain applied to Traditional Speciality Guaranteed (TSG), Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI). Also included is research into the role of seeds and vegetal material in TSG, PDO and PGI. Lastly, there is a case study of a DO and a GI. This research has been compiled from the ETG, IG and DO, of which are described in the data base of the Spanish Ministry of Agriculture and Rural and Marine Environment. According to the type of food products, animal and manufactured products have been discarded because they have so many ingredients making data management too difficult. As well the ETG has been discarded because none of them fulfilled these previous requirements and there was no mention of the vegetal material used.

The table of Spain (see Annex I) summarizes the database entrances, which have been checked. These PDO and PGI have been divided into the type of product and Autonomous Community, adding, where applicable, references of terms and the origin of the varieties, which have been used. As we can see from the table (marked in green), there are different terms which are used to name a variety: autochthonous cultivar, autochthonous variety, autochthonous ecotype, cultivar, genetic population, ecotype, traditional variety, local variety and local ecotype. These various ways of calling a terms are used to designate the same concept and on the contrary, the same term designates different concepts.

Additionally, in some cases it is mentioned that farmers select their own seeds (marked in red). The value of farmers' knowledge is sometimes recognized in terms of obtaining quality seeds, and the maintenance of the authenticity of those varieties.

Lenteja de la arnuña "...they do not consider productivity as the main objective, as they focus their attention in the obtention of a high quality product, which is also beneficial to crop rotation as it improves soils".

Products are described by using descriptions of the morphology and organoleptic characteristics, historical or agronomical value, the access to vegetal material and the utilization of the varieties used in PDO and PGI. The information from one to another is very changing, and all of the information described above is not included in all of them.

Some examples are:

Historical description: Melón de la Mancha (melon)

"Melon "piñonet" or "piel de sapo" is one of the most characteristic crops of the natural region; La Mancha. It is a great bonus to family farms whose main incomings come from vineyard and cereals. Probably, melon culture was introduced in La Mancha by Arabs. Most ancient references are those gathered in "Tratado Agrícola" of Ibn Bassal al-Tulaytubí, who reigned in the kingdoms of Toledo (1043-1075) and Valence (1065-1075). One of his disciples carried out adaptation and herborization trials all over Al-Ándalus, describing many melon varieties; amongst them he especially mentioned the variety sukkarí, a melon of unirrigated land, very sweet and small in size. This product is linked with the area; proved by means of the historiography and oral information which still is told by local farmers".

Breeding of the vegetal material: Espárrago de Huetor-Tájar (asparagus)

"Parental selection is the main process by which to obtain good quality plants. It requires selected plant localization (male and female), as well as an isolation of localized individuals to control the pollination. This process is carried out in spring in isolated plots separated by at least 1 km, so

unintended crosses are avoided during pollination. Female plants, that are fecundated are protected with mesh bags to avoid cross pollinations by insects”.

Morphologic description: Pimiento de Gernika (pepper)

- *“Colour: medium to dark green, with a light shine and uniform in its colouration.*
- *Length: from 6 to 9 cm. The maximum length difference allowed amongst peppers in each can is 2 cm.*
- *Number of locules: 2 or 3, not accentuated.*
- *Shape of the fruit: triangular, narrow and elongated.*
- *Section: oval and triangular.*
- *Apex: acute.*
- *Peduncle: entire, thin and long.*
- *Girth: thin.*
- *Skin: no coriaceous, thin.*
- *Texture: smooth.*
- *Appearance: fresh”.*

Organoleptic description: Pimiento de Oimbra (pepper)

“Flavor: sweet, not hot because of the lack of capsicine”.

Agronomical description: Lenteja de la Armuña (lentil)

“The vegetal material used is rustic, resistant to the majority of plaques and diseases, well adapted to drought and its yield is estimated as medium”.

Utilization description: Pimiento Riojano (pepper)

“For human consumption fresh or canned”.

6.1. Asociación Promoción Berenjena Almagro

1. Do you know what local/traditional varieties are?
Yes, those which can be registered by breeders in the national register of commercial conservation varieties.
2. Is it the use of local varieties a requirement of your DOP or IGP product?
Yes, in our case we have a unique variety which is genetically distinctive to others.
3. Do you think that a link exists between the use of local varieties and the quality of the product?
Yes, in our case to modify the variety means to modify final product characteristics.
4. Do you think that a link exists between local varieties, the culture reservation and traditional knowledge?
Yes, in our case we are family farms with a large tradition that brings culture and takes root in its heritage.
5. Do you know the origin of these local varieties?
From farmers production. Farmers have always obtained the seeds that they need for planting each year. In our case a commercial seed does not exist which could be a guarantee of quality.
6. Do farmers select/breed these varieties?
Yes. Traditionally they select the fruit which looks better and is of higher quality.
7. Has the DOP or IGP any restrictions related to seeds legislation?
No
8. Do you know the new directive of conservation varieties?
No.

6.2. Asociación Aderezadores de Aceituna de Mesa “Aloreña de Málaga”¹⁰

- a) Do you know what local/traditional varieties are?
Yes. These varieties which due to the terrain orography, the edaphology, the climate, and the traditional way of farming give rise to a product different to other similar products. In our case, the “Aloreña de Málaga” constitutes one of the main factors of the product differentiation as it is an autochthonous variety of the natural region “Comarca Natural del Guadalhorce”. Its name comes from the name given to the people of the main village of production. The region of production has very peculiar climatic conditions, with moderate winters and hot summers; this has made variety development easier. Olive tree as well as other tree species is highly influenced by environmental conditions. These conditions change the fruits’ composition, the date of harvesting, the shape of the leaves, etc.
- b) Is it the use of local varieties a requirement of your DOP or IGP product?
Yes. The PDO has been assigned to olive trees planted in this region, named all of them “Aloreña de Málaga”.
- c) Do you think a link exists between the use of local varieties and the quality of the product?
Yes, because these varieties are not genetically modified, they are old trees which have been here for a long time.
- d) Do you think that a link exists between local varieties, the culture reservation and traditional knowledge?
Yes. The elaboration of the olive “Aloreña de Málaga” has centuries of tradition, from its harvest until its seasoned. Olives are still harvested manually. In the region, this method of harvesting is called “verdeo”. It demands the selection of olives with the largest caliper and the best appearance. The olive “alorenña” is very sensitive to bruises and goes bad easily which is why they must be harvested very carefully. Once harvested, the olives are smashed and brined, as tradition dictates. This brine was traditionally prepared with “prueba del huevo”, an egg is placed in a container full of water adding salt until the egg floats. The floating egg signifies that the ideal concentration of salt has been reached to sweeten olives. After two days, olives are ready to be seasoned with typical local produce, fennel, thyme, garlic and pepper, all of which give the olives their characteristic flavor and aroma. This hand-crafted process which has been carried out for centuries, as proved by numerous bibliographical references about “Aloreñas” olives which make up part of the culture and heritage of the people from this region.
- e) Do you know the origin of these local varieties?
From farmers production.
- f) Do farmers select/breed these varieties?
No. It is not necessary.
- g) Has the DOP or IGP any restrictions related to seeds legislation?
No.
- Do you know the new directive of conservation varieties?
Yes.

¹⁰ The PDO was registered on April 09 and has not been included yet on the database of the Ministry.

7. Conclusions

The report main outcomes are:

- a) Not a lot of research has been done of this matter. Even if a lot of projects and researches have been undertaken on GIs – analysing their impact on rural development, their economic benefit, the impact on small farmers or as a key for local innovation through collective action¹¹ - very few words have been spent in order to check the compatibility of GIs with agrobiodiversity and in particular their coherence with seed laws.
- b) We found a general incoherence in the decision about what type of GIs are better suitable for a product. PGI are usually used to protect fresh vegetables or fruits, even if all the food chain in these cases belongs to a specific territory.
- c) To date, in the code of practice not so importance has been paid to local varieties and the maintenance of their diversity.
- d) The needed standardization of the code of practice could raise biodiversity erosion (not only biological, but also cultural).
- e) It is important to promote and maintain the informal seed system behind each GIs, creating a legal space for the seeds as conservation varieties.

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¹¹ See for example the EU project Strengthening INternational Research on Geographical Indications (SINER-GI), aimed at building and sharing a coherent scientific basis world-wide, regarding economic, legal, institutional and socio-cultural conditions of success of GIs, in order to support their legitimacy in the framework of WTO negotiations (<http://www.origin-food.org>).

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9. Annex 1- Matches and mismatches between Official Catalogues and local varieties (France, Spain, Italy)

FRANCE							
Category	Type of product	French name of the indication	Type of indication	Region	Varieties enabled by the code of practices and type	Registration of the varieties in the catalogues	
						French catalogue	European catalogue
Spice	Pepper	Piment d'Espelette	AOC	Pays-Basque, Aquitaine	Farm varieties, populations	No	No
					Gorria (classical variety), certified seeds or farm seeds	Yes, public domain	Yes
Bulbs	Onion	Oignon doux des Cévennes	AOC	Cévennes, Languedoc-Roussillon	Farm varieties, populations	No	No
					Céno and Toli (classical varieties), certified seeds or farm seeds	Yes, public domain	Yes
		Oignon de Roscoff	AOC	Brittany	Farm varieties (populations)	No	No
					Jack and Keravel (classical varieties), certified seeds or farm seeds	Yes, public domain	Yes
	Garlic	Ail blanc de Lomagne	IGP	Midi-Pyrénées	Corail, Jolimont, Messidrôme and Thermidrôme (classical varieties), certified seeds only	Yes	Yes
		Ail de la Drôme	IGP	Rhône-Alpes	Messidrôme and Thermidrôme (classical varieties), certified seeds only	Yes	Yes
Ail rose de Lautrec		IGP	Midi-Pyrénées	Rose de Lautrec, Ibérose, Goulurose, Edenrose and Jardirose (classical varieties), certified seeds only	Yes	Yes	
Dry legumes	Dry bean	Coco de Paimpol	AOC	Brittany	Farm varieties	No	No
	Dry bean	Lingot du Nord	IGP	Nord-Pas de Calais	Lingot (classical variety), certified seeds only	Yes, public domain	Yes
	Dry bean	Haricot Tarbais	IGP	Midi-Pyrénées	Alaric and Lapujole - selection of Alaric - (classical varieties), certified seeds only	Yes	Yes

	Green lentils	Lentilles vertes du Berry	IGP	Region Centre	Anicia (classical variety), certified seeds only	Yes	Lentil is not a species part of the European catalogue
	Green lentils	Lentille verte du Puy	AOC	Auvergne	Anicia (classical variety), certified seeds or farm seeds	Yes	Lentil is not a species part of the European catalogue
Tubercles	Potatoes	Pommes de terre de Merville	IGP	Nord-Pas de Calais	Bintje (classical variety), certified seeds only	Yes	Yes
		Pommes de terre de l'île de Ré	AOC	Ré island, Poitou-Charentes	Alcmaria, Carrera, Pénélope, Starlette, Amandine, BF 15, Charlotte and Roseval (classical varieties), certified seeds only	Yes	Yes
					Goulvena (classical variety), certified seeds only	No (but it was registered in 1974)	No
		Pomme de terre primeur du Roussillon	AOC	Languedoc-Roussillon	Béa (classical variety), certified seeds only	Yes	Yes
Cereals	Small spelt	Petit épeautre de Haute Provence	IGP	Provence-Alpes-Côte d'Azur	Farm varieties and seeds	No	No
	Rice	Riz de Camargue	IGP	Provence-Alpes-Côte d'Azur	All the varieties registered in the official catalogues (French and European ones) – revision in progress to limit the number of varieties used.	Yes	Yes
					Some farmers use farm varieties and seeds for specific types or rice 'like coloured rice)	No	No
Fruits	Strawberries	Fraises du Périgord	IGP	Aquitaine	Guariguette, Cirafine, Darselect, Mara des bois and Cigaline (classical varieties)	Yes	Strawberry is not a species part of the European catalogue
					Elsanta (same family than Darselect) and Seascape	No	
	Melon	Melon du Haut	IGP	Poitou-	Only varieties listed by the syndicate	Yes	Yes

		Poitou		Charentes	are allowed, all are registered varieties, certified seeds only. There might be some hybrids.		
		Melon du Quercy	IGP	Midi-Pyrénées			
Vegetables	Asparagus	Asperges des sables des Landes	IGP	Aquitaine			
	Corn salad	Mache nantaise	IGP	Pays de Loire			
	Leek	Poireaux de Créance	IGP	Normandy			
Other	Mustard	Moutarde de Bourgogne	IGP	Bourgogne			

Category	Type of product	Spanish name of the indication	Type of indication	Region	Varieties enabled by the code of practices and type	European catalogue
Spice	Pepper	PIMENTÓN DE MURCIA		MURCIA	Bola	No
		PIMIENTO ASADO DEL BIERZO		CASTILLA LEÓN	ECOTYPE 'DEL BIERZO'	Yes
		PIMIENTO DE ARNOIA		GALICIA	LOCAL ECOTYPE FROM DE REGION OF "O RIBEIRO"	NO
		PIMIENTO DE FRESNO-BENAVENTE		CASTILLA LEÓN	ECOTYPE OR LOCAL VARIETY DE FRESNO, FROM DE SELECTION OF THE TYPE OF PEPER MORRO DE VACA OR MORRON.	YES
		PIMIENTO DE GERNIKA Ó GERNIKAKO PIPERRA		PAIS VASCO	DERIO E IKER	YES

		PIMIENTO DE HERBÓN		GALICIA	COMMERCIAL VARIETY PADRON AND LOCAL ECOTYPE	YES
		PIMIENTO DE O COUTO		GALICIA	O COUTO	NO
		PIMIENTO DE OIMBRA		GALICIA	DE OÍMBRA	NO
		PIMIENTO RIOJANO		LA RIOJA	NAJERANO	YES
Bulbs	Garlic	AJO MORADO DE LAS PEDROÑERAS	PGI	CASTILLA LA MANCHA	MORADO DE CUENCA	Yes
	Onion	CEBOLLA DE LA MANCHA	PGI	CASTILLA LA MANCHA	Recas	No
		MELÓN DE LA MANCHA	PGI	CASTILLA LA MANCHA	PIÑONET OR PIEL DE SAPO	Yes
		BERENJENA DE ALMAGRO	PGI	CASTILLA LA MANCHA	DEALMAGRO	Yes
		ALCACHOFA DE TUDELA	PGI	NAVARRA	BLANCA DE TUDELA	Yes
		GRELOS DE GALICIA		GALICIA	GRELOS DE SANTIAGO AND GLOBO BLANCO DE LUGO.	Yes

		ALUBIA DE LA BAÑEZA-LEÓN	PGI	CASTILLA LEÓN	CANELA, PLANCHETA, RIÑON MENUDO AND PINTA DE ALUBIA OR JUDIA	No
		FABA ASTURIANA	PGI	ASTURIAS	'GRANJA ASTURIANA	No
		FABA DE LOURENZÁ		GALICIA	FABA GALAICA, FABA DO MARISCO (ALSO KNOWN AS FABA VERDIÑA)	No
		GARBANZO DE FUENTESAUÇO	PGI	CASTILLA LEÓN	VARIEDAD MACROCARPUM, ECOTIPO FUENTESAUÇO	No
		JUDÍA DEL GANXET VALLÉS-MARESME' O 'MONGETA DEL GANXET VALLÉS-MARESME' O 'FESOL DEL GANXET VALLÉS-MARESME'		CATALUÑA	GANXET	No
		LENTEJA DE LA ARMUÑA	PGI	CASTILLA LEÓN	RUBIA DE LA ARMUÑA	No

Italy

Category	Type of product	Italian name of the indication	Type of indication	Region	Varieties enabled by the code of practices and type
Basil		Basilico genovese	PDO	Liguria	Ecotypes and local selection. Varieties listed in the catalogue: Genovese comune, Genovese a foglia larga
Caper		Cappero di Pantelleria	PGI	Sicilia	Variety Nocellara, but none listed in the catalogue with this name
Artichoke		Carciofo di Paestum	PGI	Campania	biotype Tondo di Paestum, none listed in the catalogue with this name
Artichoke		Carciofo romanesco del Lazio	PGI	Lazio	Varieties Castellamare, Campagnano and their clones, none listed in the catalogue with this name
Bean		Fagiolo di Lamona della Vallata Bellunese	PGI	Veneto	Varieties Spagnolo, Calonega, Canalino and Spagnolit, none listed in the catalogue, but a variety named Borlotto Lamona has been listed until 2002.

Bean	Fagiolo di Sarconi		PGI	Basilicata	Varieties Borlotto nano and Cannellino, in the national catalogue Borlotto nano 45 and Cannellino.
Bean	Fagiolo di Sorana		PGI	Toscana	Ecotype Sorana, none listed in the catalogue. In the regional list
Emmer wheat	Farro della Garfagnana		PGI	Toscana	Triticum dicoccum Schubler, many varieties listed
Lentil	Lenticchia di Castelluccio di Norcia		PGI	Umbria	Local ecotypes
Pepper	Peperone di Senise		PGI	Basilicata	3 local population: sharp, bill-like, truncated, none listed in the catalogue
Tomato	Pomodoro di Pachino		PGI	Sicilia	Variety listed in the catalogue: Pachino
Tomato	Pomodoro S. Marzano dell'Agro Sarnese-Nocerino		PDO	Campania	In the code is said ecotype S. Marzano, but many varieties are listed as S. Marzano in the catalogue
Red chicory/radicchio	Radicchio rosso di Treviso		PGI	Veneto	Different varieties listed as Radicchio di Treviso and Rossa di Treviso precoce
Chicory/radicchio	Radicchio variegato di Castelfranco		PGI	Veneto	Variety listed: Radicchio variegato di Castelfranco
Rice	Riso di Baraggia Biellese e Vercellese		PDO	Piemonte	Varieties: Arborio, Baldo, Balilla, Carnaroli, S. Andrea, Loto, Gladio
Rice	Riso vialone nano veronese		PGI	Veneto	Japonica, variety Vialone Nano
Green onion	Scalognò di Romagna		PGI	Emilia Romagna	No varieties listed