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NON-CONVENTIONAL VITICULTURE
AS A VIABLE SYSTEM:
A CASE STUDY IN ITALY

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**Non-conventional viticulture as a viable system:
A case study in Italy**

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Introduction

The food crisis of 2008 and the current financial crisis, coupled with concerns of climate change, have fueled a renewed interest in alternative food production systems, namely, local, organic and sustainable food systems. In many countries, firms are revising not only their short run objectives, but also their medium and long term goals. Most developed economies have identified the adoption of environmentally sustainable technologies as a major building block of the strategy to exit the crisis (Agrisole, 2009). Therefore, the adoption of sustainable technologies and the production of environmentally friendly goods and services is poised to be a crucial competitive tool in the global marketplace in the medium-long run (Agrisole, 2009). Non-conventional production and processing methods – e.g. organic and biodynamic techniques – provide important positive social and environmental externalities, and may offer viable alternative to traditional production systems, particularly in terms of coping strategies in times of crisis.

The purpose of the paper is to analyze organic and biodynamic wine production (hereafter non-conventional³ production) in terms of its viability, both in terms of economic, social and environmental aspects, particularly in Italy. Non-conventional methods in wine production, are sustainable agricultural methods based on the best use of available natural and social resources and they are also socially responsible, economically efficient and profitable for the operators. In agriculture, there is no unique model of sustainable economic activity, that would be applicable to all geographic, economic and social environments. As stated by OECD (2002, pg.7): *“There is no unique system that can be identified as sustainable, and no single path to sustainability. There can be a co-existence of more-intensive farming system with more-extensive systems that overall provide environmental benefits, while meeting demands for food”*. Sustainability is a global problem, but *“...all farming systems, from intensive conventional farming to organic farming, have the potential to be locally sustainable”* (OECD 2002, p.6); therefore, the specificities of local culture, society and economy can generate a variety of methods to cope with sustainability, as emphasized by Zanoli (2007, pg.374) *“... sustainable development is a concept that has to be declined on a territorial basis [...] rural communities and rural territorial systems can be thought as ecosystems where ... global conservation strategies can be implemented and articulated at a local level”*.

This work illustrates some preliminary results from an on-going research on the experience of Italian wine firms who use non conventional production methods. The analysis is based on qualitative data, gathered through *ad hoc* interviews with experts (producers, traders, dealers) in the Italian wine sector, to understand weaknesses and strengths of that portion of Italian wine-making industry which produces wines from grapes obtained by non-conventional

³ In this paper the word “non-conventional” will be used as a shorthand to identify, when necessary, both farming methods. This choice originates from the decision to contrast *non-conventional* farming methods with the methods (“*conventional*”) that identify the kind of agriculture most widely practised in the world (in terms of: Utilised Agricultural Area, production, impact on technologies, market system etc.).

methods – e.g. organic and biodynamic methods. The information is structured according to the major stages of the agrofood chain - production, distribution, consumption – and is complemented by a critical survey of the regulations specific to wine-making based on grapes obtained through non-conventional methods.

In the next section, trends in organic production in Italy are reviewed, with an emphasis on non-conventional wine production. In sections 2, 3 and 4, we present preliminary results from the survey related to production, consumption, distribution and certification of non-conventional wines. The paper concludes with some policy recommendations.

1. Organic farming and recent trends

Organic farming is related to the minimization of the human impact on the environment, while ensuring the agricultural system operates as naturally as possible. Typical organic farming practices include: wide crop rotation as a prerequisite for an efficient use of on-site resources; very strict limits on chemical synthetic pesticide and synthetic fertiliser use, livestock antibiotics, food additives and processing aids and other inputs and absolute prohibition of the use of genetically modified organisms.

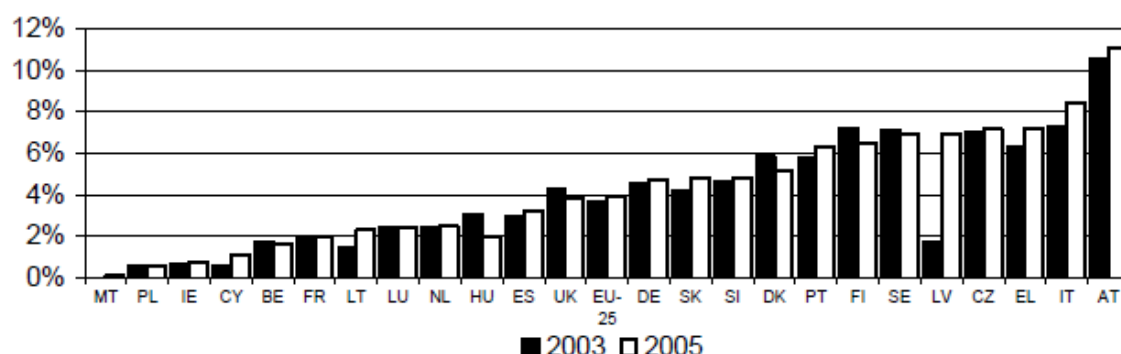
In terms of world certified organic farming, Europe leads the way. EU is the largest market for organic products and many European countries are also engaged in organic production practices around the world. The organic market is growing rapidly, many sectors to suffer from undersupply with imports meeting the shortfall in regional supply” (Organic Monitor, 2006)⁴.

In the EU-25 the organic area out of the total Utilised Agricultural Area is around 4%, with a slight upward trend (Fig.1). In the European Union organic farming is regulated by Reg 834/07 and the previous Reg.. 2092/91 is simultaneously repealed. The new regulation underlines the importance environmental protection, biodiversity and high standards of animal protection⁵.

⁴Organic Monitor, “The European Market For Organic Food & Drink” November 2006: UK

⁵ In July 2007, the European Commission approved a new organic regulation to clarify the standards for organic production and labelling, including the mandatory use of the EU organic logo for European producers to be applied starting 1 July 2010. This logo can be accompanied by national or private logos. From 1 July 2010 the products’ place of origin must also be indicated in order to inform consumers.

Figure 1: Organic area against total Utilised Agricultural Area in %, 2003/2005



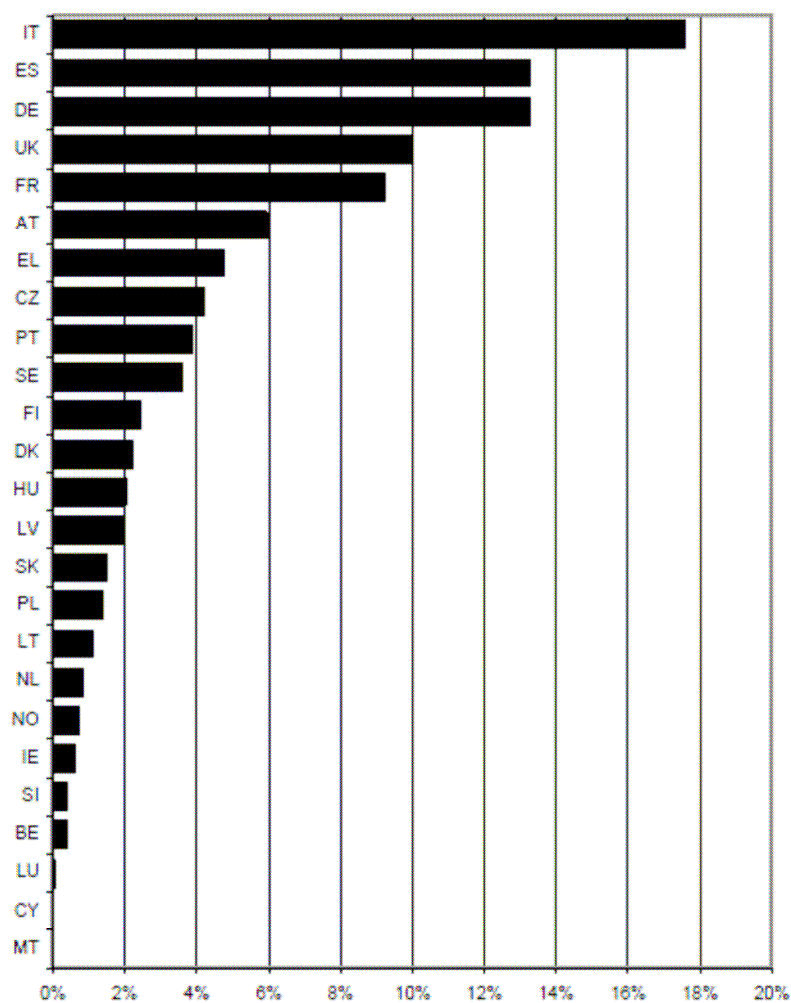
Sources: Eurostat Organic Farming Statistics;
Farm Structure Surveys

NB: Organic area data 2003: CY, LV, LT, MT, SI 2004
Organic area data 2005: LU, PL 2004

Source: http://ec.europa.eu/agriculture/organic/home_en

Italy is the fifth country in the world in terms of land invested in organic crops, amounting to more than 1 million hectares (Fig. 2). About 45.000 farms are involved in production, while a total of slightly more than 50.000 agents work in the various stages of the chain (SINAB 2007). Organic crops are mainly composed by forages and cereals (about 70% of the total), followed by olive production (9.3%), fruit and vegetables (9.1%); the vine represents only 3.3% of the total invested land. More than 62% of producers is in Southern Italy, while processing and importing are localized mainly in Northern Italy.

Figure 2: Share of total organic area by country (%) out of total EU-25 organic area, 2005



NB: LU, PL 2004

Source: http://ec.europa.eu/agriculture/organic/home_en

1.1 *A note on Biodynamic Viticulture*

In 1924, Rudolf Steiner founded the biodynamic movement. The main principle is based on the activation of the biological processes in the soil so as to make available to the plants the nutritive elements needed for production⁶. This production method creates an equilibrium between cultivation, soil fertility and surrounding ecosystem. The reconstruction of the equilibrium habitat/soil makes possible, spontaneously, the correct relation between

⁶ Steiner speaks about the farm like a “business organism” meant like a self-sufficient entity.

prey/predator⁷. Biodynamics pays a great attention to lunar and “cosmic”⁸ cycles for the determination of sowing time and of other agronomic operations. Only natural origin compounds are allowed and they have the function of catalysts⁹ in order to stimulate the vital phenomena.

The main difference between organic and biodynamic agriculture is the way in which they consider the farm: a biodynamic farm is managed as a living organism and the production process is based on biodiversity and no industrial chemical element is used. Employing organic farming practices is a minimum requirement to produce biodynamic grapes; therefore, for most organic farmers biodynamic farming has been the normal evolution of their farming beliefs.

In a vineyard, the production process is based on biodiversity and no industrial chemical element is used. During the vinification, the fermentation starts spontaneously with the help of indigenous yeasts that are already present on the grapes; these yeasts change from one vineyard to the other. Therefore, in biodynamic viticulture, the use of selected yeasts that are industrially produced are not allowed. Concentration methods like inverse osmosis or freezing are also forbidden. The use of sulphur dioxide is a crucial issue: some producers use it in minimal amounts, in order to manage the vinification process under adverse conditions; others, on the contrary, consider the absence of sulphites a principle issue, a sign that distinguish the biodynamic wine from conventional one.

According to Nicolas Joly¹⁰, one of the most important biodynamic wine producer, the farmer should be “nature’s assistant” more than a “wine maker”.

1.2 *Biodynamic Viticulture trend in Europe and Italy*

Biodynamic production is represented by 375 farms certified as Biodynamic[®] by Demeter (see section 4.); other 80 are converting themselves to organic agriculture. According to Demeter (Demeter 2007), the number of farms is steadily increasing at a yearly rate between 2% and 3%. The invested land is about 25.000 hectares, yielding a revenue of about 30 millions of euros, 70% of which comes from exports (chiefly Germany, UK and USA). In Italy, biodynamic vineyards account for about 750 hectares for 84 firms (Demeter, 2009) localized mostly in the Nord-Center of the country.

Biodynamic techniques are spreading at an increasing rate in most countries, as revealed in the BioFach Fair 2008¹¹.

⁷ This contrasts with the organic method, which is characterized by the introduction, from the outside, of bugs predators of those harmful ones for the cultivations.

⁸ Biodynamics postulates that all planets can affect natural fluids, the same way the moon causes sea tides.

⁹ They are eight products: two (prepared 500 “horn-letame” and 501 “horn-silica”) are directly sprayed on the fields, after to be dynamized, and six are introduced in the cumulus in order to improve the formation of humus (the 502 “yarrow”, 503 “camomile”, 504 “nettle”, 505 “oak”, 506 “taraxacum”, 507 “valerian”). www.agricolturabiodinamica.it

¹⁰ The wine produced in his farm, the Clos de the Coulée de Serrant, is one of white french wines more rewarded at international level. www.coulee-de-serrant.com

¹¹ <http://www.biofach.de/en/default.ashx>

Italian wine firms involved in “bio¹²” wine production are mostly medium- and small-sized firms, their dimensions not exceeding 25 hectares on average (SINAB 2007). In Central and Southern Italy, and mainly in Tuscany and Apulia, vine cultivation is coupled with olive cultivation and firms process both of them. The pioneers in the use of “bio” techniques emerged on the market in the early ‘90s, around the same time that the EU enacted regulation concerning organic production.

After a few years of start-up time, during which the necessary *know how* was acquired and consolidated, the sector has been experiencing continuing growth since the late ‘90s. Whenever available resources allowed, farms followed a strategy of: area growth, wine quality improvement and its stability over time – in fact, too often organoleptic aspects were penalized by products meant to be “genuine/traditional” but actually obtained by bad wine-making techniques. These strategies required significant investments in processing structures (cellars) and in hiring specialized technicians – agronomists and enologists – to get a product able to compete on a market more sophisticated than that of early ‘90s. To match market evolution, the more dynamic firms have widened and improved their product portfolio, in order to segment their offer and position themselves in those channels showing more promising profitability trends, such as exports and modern retail distribution (both at home and abroad).

2. Characteristics of the organic/biodynamic wine consumer

Non conventional wines have fared better than their conventional competitors in the last few years. Organic/biodynamic wine consumption has increased everywhere, both in production countries (Italy, Spain, France) and in large importers (North Europe, Japan, USA), the higher consumption rates being registered in the latter countries (ORWINE 2007).

In Italy, total wine purchases of organic/biodynamic wines have diminished due to a contraction in overall table wine consumption, not completely offset by the increase in quality wine (DOC, DOCG, bio wines) consumption. The current trend is toward a lower per capita consumption, but the average quality of wine drunk is increasing, as showed by ISMEA data: percent change of DOC-DOCG wine purchases between 2007 and 2008 have increased by 5.3% in value and by only 1.5% in volume (ISMEA 2009)¹³. In other words, consumer are seeking higher value wines.

As paradoxical as it may seem, in Italy the purchasers of organic/biodynamic foodstuffs usually are not consumers of organic/biodynamic wine (ORWINE 2007): often, the organic/biodynamic food consumer sees wine as a superfluous food item, unhealthy because of its alcoholic component¹⁴. Most of distributors interviewed for the ORWINE survey claimed that “*given the prejudice of bio-food consumers against alcohol and wine, the most interesting targets are “ordinary” wine consumers*”.

¹² Abbreviation for biodynamic and organic wine

¹³ Unfortunately, main Italian statistical sources put organic and biodynamic wine together with quality wine, due to the lack of specific data.

¹⁴ Nielsen-Federvini 2008 yearly survey reported an increase of probiotic food purchases (+14.1% in volume, with respect to 2007) due to a greater attention to a healthier lifestyle.

This implies that organic wines compete against conventional wines in the segment of quality wines, targeting consumers for which production techniques are only one among many features differentiating the two wines, and not necessarily the most important one.

In the interviews we conducted, it was stated that “bio”wines and conventional wines compete for shelf space in supermarkets and for points of purchase in Ho.Re.Ca channel through both price and quality, and for a given level of quality, consumers who are not as loyal discriminate on the basis of price. In recent years, and in particular during current economic crisis, many producers realized that competing only on price would have been like a negative-sum game. This is because organic/biodynamic certification costs are to be added to production costs and weigh significantly on the final price of the bottle; moreover, in the first phase of conversion from conventional to organic/biodynamic methods, production levels can exhibit a variance larger than usual.

According to all producers interviewed, the key strategic element in price competition between conventional and “bio” wine is the identification of a “right” or “equitable” or “intelligent” price/quality ratio. Such a ratio identifies the price which is acceptable with respect to what the product represents on the whole: a wine without qualitative defects; a healthy wine (except for its alcoholic content), as produced without using synthetic chemicals and therefore free from toxic residuals; a wine produced by sustainable agronomic techniques.

According to one producer, the strategic value of this element *“has clearly emerged in last months: the producers who quoted “too high” prices were hurried to revise them quickly, signaling therefore a quality level different from the one consumers have perceived until that”* (interview with Cefalicchio winery, 2009).

Until recently, organic/biodynamic wine has not enjoyed a good reputation in terms of quality, as many consumers consider it a “crude” product, with distasteful olfactory/gustatory characteristics; even when its taste is not defective, it is considered as a product “difficult to understand”.

Characteristics of the organic/biodynamic wines that affect consumption can be summarized as follows:

- (i) Organoleptic characteristics: must be comparable with those of a conventional wine. Products with unpleasant smells will be disregarded, as the consumer is not willing to justify them with the use of “traditional” practices in the cellar.
- (ii) Education of consumer: consumers should be willing to accept residuals in the bottle, as organic wine-making prescribes less filtering. It is therefore important to have consumers easily “understand” the quality of the wine they drink, possibly through increased education of the consumer with regards to “bio” wines. This is very important in particular when consumers have to compare wines on supermarkets’ shelves or on the wine charts of restaurants and wine bars.
- (iii) A demonstrated link between the wine and the territory the grapes come from: this element is stronger and richer when it links with the winery history or the personal commitment of the owner or the reputation of the firm, or when the products is an outcome of a more complex social or civil engagement, as it happen.
- (iv) Participation of consumers in the wine experience: the links mentioned above in (iii) can be more successfully exploited when the customers can “participate” to the wine producers

experience. All producers interviewed acknowledged the strategic importance of the direct contact with the customer, who is also the user of the services a wine firm can offer. Direct participation of consumer is most often associated with agritourism (B&B and restaurant services), but also of outlets or of events like wine tasting sessions, gastronomical courses or even didactic farms. Direct contact allows the customer/consumer to better understand the activity of the firm, the commitment and sometimes the “philosophy” of the owner. Moreover, they allow more time to taste the wine and be explained its organoleptic characteristics and their possible “peculiarities” with respect to those of conventional wines.

3. The Italian Distribution System for organic/biodynamic wines

The role played by modern retailers in the distribution of “bio” agricultural products differs across European countries. In Northern Europe, Switzerland and UK modern retailers distribute most of these products, with shares varying from 90% in Sweden to about 75% in UK and Switzerland in 2007. In Mediterranean Europe, traditional distribution channels have maintained an important role, and modern retailers account for only 25% of distributed products in Italy and for 39% in France. Germany lies in between these two models: 49% of “bio” agricultural products are sold through modern retailers, while 28% through specialized shops.

Traditionally, a significant share of conventional and non-conventional wine is commercialized through direct sale. According to some source, wine would be the agricultural product more frequently sold directly at firms’ premises, followed far behind by fruits and vegetables, olive oil and cheeses. Some recent data¹⁵ show an increase by 20% of purchases at producer’s cellars in 2008, which amount to 1,2 millions of euros.

In the Italian experience, many firms made direct sales their preferred distribution channel, particularly during the start-up phase, in order to keep selling costs low. This choice was justified also by the low volumes produced. This channel limits the range of customers to people living in the surroundings of the firm and to “eno-tourists”. This approach was also favored by several initiatives promoted both by public and private bodies, like “Wine routes”, “Open Cellars”, “Wine cities” etc., aimed at bringing consumers to production areas to gain a closer understanding of different production methods and environments. Currently, many small firms producing a low number of bottles rely mainly on direct sales, also because it is the least costly alternative.

In Italy, currently modern retailing is not playing a primary role, but the competitive landscape is likely to change soon, due to recent mergers and partnerships among important players. Ecor, the Italian leader in the distribution of organic and biodynamic products, merged with NaturaSì, owner of a well-known chain of stores specializing in the same products; the new entity – Ecor NaturaSì SpA – covers the entire distribution chain and serves about 1.000 specialized stores all over Italy: 250 “B’io” brand stores, 66 “Naturasi” brand supermarkets (partly owned, partly in franchised) and about 700 independent stores using Ecor NaturaSì services; Ecor NaturaSì’s product portfolio includes about 20 wineries for a total of 67 labels, both red and white wines. Another big player, the AlceNero & Mielizia

¹⁵ www.coldiretti.it

group¹⁶, has created a Wine Division in 2008 to commercialize wine obtained from organic Italian grapes both in modern retail distribution and in the Ho.Re.Ca channel. In this channel the group will take advantage of a partnership with the Vintesa¹⁷ consortium, specialized in distributing “bio” wines for consumption in the “away from home” channel; the group is attempting to become the main reference for wineries who want to be distributed in supermarkets and/or in the Ho.Re.Ca channel.

“Bio” producers distributing through retail supermarket chains targets a consumer different from those purchasing wines at the producer’s cellar. This type of consumer is not only informed about the characteristics of the wines (production method, origin, and so on) and sensitive to environmental, social and ethical instances, but also seeks a high level of service such as constant availability and stable quality incorporated in what he/she buys.

This implies that high level of service when it comes to quality and availability is a prerequisite of any distribution agreement in this channel. Constant availability is required because when a reference is absent from the shelves the missed sale – a loss in itself – generates also a break in the trust relationship between consumer and product, that might induce the consumer to switch store; an unexpected drop in the quality of wine (defective corks, unpleasant taste or smell) can have similar effects.

The requirements imposed by modern retailers can actually foster an improvement of techniques used by wineries in producing, processing and conditioning, to the extent agricultural firms are willing to revise their approaches and make the necessary investments. The unwillingness or the lack of funds (often due to difficulties in getting bank loans) to adopt these changes are the main reasons explaining the fact that many wine firms remain below some critical size.

On the other side, distribution through large supermarkets expose “bio” producers to a threat of “standardization”, due to the market and buyer power of larger retailers like Wal-Mart, who entered the organic market in 2006. The risk is that, to meet the increasing demand of the larger retailers, adopted commercial and productive standards of inputs and processed products would deteriorate and the environmental, social and ethical standards may be compromised in favor of conventional short-sighted commercial reasoning (Brunori 2009).

However, large sale outlets offer interesting opportunities to “bio” producers. For example, recently the IKEA store in Rome – who offer also meals and Swedish food specialties – put on sale in its food department 20cl bottles of Prosecco wine obtained from Italian organic grapes.

Many considerations made above apply also to distribution in the Ho.Re.Ca channel and to exporting wines. However, it was claimed that when: *“the trading relation between producer and importer/Ho.Re.Ca seller evolves into a deeper relationship the possibility that the wine*

¹⁶ Alce Nero & Mielizia group ranks third in the value sales of packaged organic products in non specialized supermarket chains, with a market share of 7.5% (corresponding to about 26 million euros sales in 2008).

¹⁷ Vintesa Italian Wines is a producers’ consortium supplying Ho.Re.Ca sale points both in Italy and abroad; it offers an assortment of wines obtained mostly by organic and biodynamic grapes, produced by small- and medium-sized firms. Vintesa operates to match directly customer demand and producers supply, eliminating intermediation costs.

may not be available can be turned into a product quality guarantee. Therefore, the most important investments in trading relationships are those devoted to build up a stable and strong relation, based on reciprocal acquaintance” (interview with Cefalicchio firm, 2009). The producers interviewed stressed the creation of a stable commercial relationship based on mutual trust, which requires a commitment from the producer to pursue and stabilize quality and an ability to exploit wine trade fairs (Biofach, Millèsime Bio, Vinitaly....) to establish new contacts. Italian “bio” wine is actually exported not only in countries with a tradition of consumption of organic food (Germany, Switzerland, United Kingdom, USA, for example), but also in Asian countries – Japan in particular – and in Eastern Europe, where the main market is the Russian Federation¹⁸.

4. Organic and biodynamic certification

Making a product recognizable and inducing a consumer to pay a premium price requires a certification system able to: (i) guarantee product qualitative attributes, protecting consumers; (ii) make international trade exchanges more competitive; (iii) ensure a correct distribution of information. Certification systems, national or private, provide the respect of standards and rules laid down by the regulation, in terms of product characteristics as well as of production method.

The production and labelling of organic products within the EU market follows a strict certification process. Farmers must first register with an acknowledged inspection body or authority in their country and according to an agreed conversion plan, undergo a conversion period of a minimum of two years before they can begin producing agricultural field crops that can be marketed as organic. During this time, the farm is said to be ‘in-conversion’¹⁹. They must be subject to inspections by acknowledged inspection bodies or authorities to ensure their compliance with organic legislation. Successful operators are then granted organic certification and are allowed to have their goods labelled as organic.

The European regulation on organic agriculture (Reg. 2092/91) defines the rules of organic wine growing while neglecting the process of organic vinification, for which no indication is given. On Jan. 1st, 2009 Regulation 834/07 came into force in the EU, dictating new provisions for organic productions. As in the old Regulation 2092/91, only organic vine is regulated, while organic wine-making process is completely neglected. Organic wine-making is expected to be regulated by a Regulation dedicated to the wine-making process, to be published in the second half of 2009, which should become effective in 2010. Based on existing provisions, at the moment in Europe the only lawful denomination is “wine obtained from grapes from organic agriculture”, while the denomination “organic wine” has no judicial basis, although commonly used in trades and in economic and marketing literature.

¹⁸ Asian consumers – in particular Japanese ones – are very competent and pay much attention to quality characteristics; they have a taste for white wines. In Japan, some restaurants offer to its patrons organic, biodynamic and conventional wines using wine lists where production methods are highlighted through different ink colors. Russian consumers, on the contrary, pay more attention to trendy wines, prefer red wines and have higher incomes.

¹⁹ If farmers want produce both conventional and organic products, they must clearly separate these two operations throughout every stage of production.

Demeter[®] International²⁰ is the only certification body for Biodynamic[®] farms, processors and products in the world. Demeter is a non-profit organization consisting of a network of individual certification bodies in 45 countries around the world. Only those companies that consistently meet these standards are permitted to display the Demeter certification logo.

Since 1927, Demeter²¹ is the international body that certifies products coming from biodynamic agriculture and their processing and packaging methods with its own logo; certified products include liquids like milk and juices, as well cosmetics and fabrics. In the case of wine and beer, provided that they have an alcoholic grade the allowed labels should indicate that the inputs respect the Demeter quality. This happens only if following requirements are satisfied: (a) conformity to Demeter processing standards; (b) at least 95% of the ingredients must possess the organic certification, according to EU Reg. 2092/91 or equivalent regulations; (c) between 50% and 90% of the total ingredients must respect the Demeter quality norms.

As with the general organic wine production, no norms defining and regulating the process of biodynamic vinification existed before June 2008, when Demeter approved, during the world meeting of all national Demeter associations, its standards for biodynamic wine-making (“Standards for Demeter/Biodynamic[®] Wine” – see Appendix I). These standards will impact fully biodynamic wine-making only after 2012, as the document allows for several exceptions covering current practices.

Italy²² and France voted against the new standard, reserving themselves the right to enact more restrictive standards, and reflective of their local production systems. Therefore, there will be a new meeting of Demeter International in June 2009 to reach an agreement; most Italian producers are waiting for the 2009 vintage to decide whether or not to abide to the new Demeter standard.

New Demeter labeling provisions state that if the wine was produced from Demeter/Biodynamic[®] grapes and satisfies wine-making standards, it can use the Demeter/Biodynamic[®] trademark. The logotype Biodynamic[®] can be used either on the front or on the rear label, but it can not be used without the Demeter logotype.

Both organic and biodynamic certification systems are costly, but the latter more than the former. Yearly cost of biodynamic certification (see Appendix II) includes a royalty for the

²⁰ The main tasks of Demeter-International are: development and approval of International Demeter Standards for production and processing as minimum requirements for the world-wide trade of Demeter products, international registration and protection of the Demeter trademark; certification of single farms/operations in countries without their own Demeter organisation; harmonisation of Demeter certification program world-wide; commitment to advancing the public understanding and acceptance of the Biodynamic[®] method in relevant international institutions; support for the establishment of autonomous Biodynamic[®] associations and Demeter organisations where none exist.

²¹ At the beginning, Demeter’s aim was to create a cooperative to commercialize the products of the agriculture based on the holistic ideas of Rudolf Steiner.

²² The application of the international standard to Italy has required exceptions and modifications. Italian regulations do not allow sugar adding, while the international standard does. According to the international standard, vinasses should be buried, while in Italy must be turned into grappa (exception). The use of fiberglass is prohibited by the international standard, but Italy was granted an exemption until 2012 to avoid to damage wine-makers who invested in fiberglass tanks.

use of Demeter trademark equal to 2% of revenues by selling products with the Demeter trademark, a membership fee and the cost of an inspection. These costs are too high for small firms, who often prefer to certify grapes as organic²³. Therefore, to the extent that Demeter trademark is an important requisite to work with large supermarket chains, certification costs might be a barrier to entry in that channel and to the growth of smaller firms.

According to the interviews conducted, the biodynamic movement has done a poor job in communicating the value of biodynamic products. The market often mistakes “biodynamic” and “organic”, and frequently attaches no value to attributes like “true, natural, genuine, traditional...” as quality guarantees. Moreover, the consumer price of a product certified by Demeter is too high compared to the the poor perception of the differences between “organic” and “biodynamic”.

5. Conclusions

Survey results show that organic and biodynamic agricultural systems are viable for firms and consumers. Both systems have their main focus on the respect of the environment with a low impact on natural resources, also in terms of carbon footprint, a better soil fertility and less soil erosion due to farming practices. From the economic point of view they represent a small but fastly growing share of the market, with profitable opportunities in domestic/foreign markets. There is also an increasing share of consumers that trust in these farming methods and it is willing to pay a premium price. From the social point of view: young generation of farmers are interested in this kind of production and this helps preserving and improving a vital rural, social and natural environment. Even more, non conventional viticulture is a key tool to let terroir express himself (ie. native grape varieties) at its best and to preserve local/traditional agricultural systems.

One of the “bio” farming system weaknesses that emerges from this analysis is the absence/inefficiency of the actual regulation about the organic/biodynamic vinification system. Moreover, the substantial monopoly in biodynamic certification enjoyed by Demeter Int. may hamper future development of biodynamic wine-making and steps should be taken to offer a credible, competitive alternative to farmers. As a consequence, there still are many terms in the Italian wine market which define biodynamic including “natural”, “true”, “genuine”, “traditional”, which allude to quality characteristics not traceable by any certifying organization. An unclear and inefficient regulatory/certification system leads the field open to unfair competition in which the main losers are the consumers.

The “bio” wine producers have adopted strategies to compete in a market that started as a niche market but is steadily growing both at domestic as well international level. Survey results show that the keys to success for Italian “bio” wine firms are: quality improvement, efficient communication and pricing strategy.

The challenge to improve quality has been almost won. After some pioneering attempts, in the early ‘90s, the investments in vineyards and cellars, as well as the experience accumulated by consultants (agronomists and oenologists) have led to an even better product.

²³ EU Regulations about rural development allow for reimbursement of quality certification costs, but national applications restricted reimbursement to young entrepreneurs and to firms participating in vertical chain projects.

In terms of communication and consumer “education” of “bio” wines, these wines are being featured increasingly in official wine tastings. In the most important fairs of the country (e.g. Vinitaly) the space devoted to “bio” wines is increasing. That enables more consumers to approach these wines and to understand their characteristics and their peculiar linkage with the *terroir*. However, weaknesses of distribution system and of certification system and regulation may forbid producers from reaping all the fruits of this positive process. In fact, the competition on the shelves of the modern retail is still based on few quantities and on basic quality, while the best products are often found on the shelves of specialty shops. Many consumers are confused by unclear regulation and fear to be fooled by producers exploiting asymmetric information to their disadvantage. In this situation, it is not surprising that the most important distribution channel of “bio” wines is direct sale: consumers are lured by cute tasting rooms and impressive cellars - reconstructed, in some cases, by famous architects – or by an “agricultural experience”, and personal commitment and the reputation built on it can be fully exploited, overcoming through arm’s length relationships the weaknesses of regulation and the necessity to pay a monopolistic price to be certified. This strategy, however, limits the size of the winery.

Pricing strategy must take into account that lower yields, higher labor intensity and certification make non conventional agriculture total unit costs at least 30% higher than in conventional agriculture. However, “bio” products can still be competitive thanks to the choice of many producers to self-restrain margins to a level they feel “right” or “equitable”. Wine, in particular, is priced at a level chosen to give consumers the opportunity to buy a good quality wine at a reasonable price. This choice turns out to be a valuable long run strategy, that builds a reputation of “fairness” for “bio” wine producers that follow it.

To sum up the first results of this on-going research, it seems to emerge a growing commitment by producers – both in terms of investments and of marketing strategies – which is rewarded by the increasing interest and confidence with which consumers look at “bio” wines. This process might be jeopardized by an inconsistent and incomplete regulation and hampered by an unfit and unprepared distribution system.

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Appendix I - Standards for Demeter/Biodynamic® Wine (June 2008, to be implemented by each member country by the 30th June 2009). The complete document is available at: www.demeter.it

Validity and basis

These guidelines are divided into three sections:

1. Background and objectives.
2. Scope and guiding principles
3. Wine processing standards

These Guidelines are intended to give transparency to interested readers about the ingredient and the processes used for making Demeter or Biodynamic labelled wines. The objectives and principles govern the standards. Ideally Demeter/Biodynamic wine helps the development of nature and man, speaking to the senses and speaking to the mind. Demeter/Biodynamic wine growing is not a means to an end. Its purpose is to enrich the world and to celebrate the beauty of landscape and life.

1. Background and objectives

[...]

2. Scope and guiding principles

[...]

The standards are defined in terms of a positive list of processes, ingredients, additives and aids. All other methods and materials not mentioned in this standard are excluded from the production of Demeter wine. Nevertheless, in order to emphasize the strict prohibition of some common processes and materials, the following are not permitted:

- The use of genetically modified micro – organisms
- Potassium hexacyanoferrate
- Ascorbic acid, sorbic acid
- PVPP (Polyvinylpolypyrrolidone)
- Diammonium phosphate
- Isinglass (Sturgeon swim bladder), blood and gelatine

All materials that are used for processing equipment, including tanks for fermentation and storage must in no way compromise the quality of, or pose contamination risks to the juice or wine.

3. Wine processing standards

3.1 Origin of fruit

Aim: 100% Demeter certified fruit

Standard: 100% Demeter certified fruit

3.2 Harvest

Aim: Hand harvesting

Standard: Machine harvesting permitted. Pomace to be returned to the vineyard

3.3 Cellar machinery

Aim: Maximum use of gravity

Standard: Pumps that develop high shear or centrifugal forces e.g. centrifugal pumps are not permitted in new installations or when replacing machinery

3.4 Tanks

Aim: Natural materials

Standard: Concrete, Wooden barrels, Porcelain, Steel tanks, Stoneware, Clay amphora, all permitted.

3.4.1 Plastic:

Aim: Forbidden

Standard: Plastic vessels restricted to transfer. For storage, only until 2012 (in Italy)

3.5 Physical measures with the product

Aim: Forbidden

Standard: Heating of the red wine mash to a maximum of 35°C allowed. Use of heating and cooling to steer fermentation is permitted. No pasteurisation

3.6 Enrichment with sugar (chaptalisation)

3.6.1 Addition of sugar/Addition of concentrated mash:

Aim: No addition of sugar

Standard: Addition of sugar to increase the alcohol content by a maximum of 1.5% by volume is permitted. Demeter sugar or grape juice concentrate, if unavailable certified organic sugar, if derogation permitted by Demeter Association of Italy.

3.6.2 Alteration of the juice, liquid in the mash (concentration)

Aim: Forbidden

Standard: Concentration of the entire must is not allowed. Alcohol reduction by technical methods is prohibited. Addition of water to the mash/must is forbidden, while by the Demeter Int. standards is permitted.

3.7 Alcoholic fermentation

3.7.1 Fermentation technique

Aim: -

Standard: Heating to speed up fermentation permitted, no pasteurisation

3.7.2 Yeast

Aim: Indigenous yeast only

Standard: Indigenous yeast, pied de cuve (Demeter or organic), Demeter or organic yeast, GMO free commercial yeast.

3.7.3 Yeast nutrients

Aim: : Demeter yeast hulls

Standard: Demeter/organic yeast hulls: other yeast nutrients need approval by the Italian organisation.

3.8 Biological acid reduction

Aim: Indigenous Malolactic Bacteria only.

Standard: Lactic acid bacteria, free of GMO

3.9 Preservation with sulphur

3.9.1 SO₂ total [mg/l] at bottling

Aim: SO₂ to be restricted to the absolute minimum

Standard: <5g/l residual sugar:

white mg/l SO₂ 140

red mg/l SO₂ 110

>5g/l residual sugar:

white mg/l SO₂ 180

red mg/l SO₂ 140

Sweet wines:

grapes with Botrytis mg/l SO₂ 360,

grapes without Botrytis mg/l SO₂ 250.

Sparkling wines:

the same as white.

3.10 Tartar stabilisation

Aim: Only cold stabilisation, natural tartrate from Biodynamic®/Demeter wine production

Standard: Cold treatment, natural tartrate from Biodynamic®/Demeter or organic wine production

3.11 Fining agents

3.11.1 Organic

Aim: No organic fining agents derived from animals.

Standard: Egg white from Demeter/organic eggs, Demeter milk and milk products, if unavailable organic. Casein.

3.11.2 Non organic

Aim: Not admitted

Standard: Bentonite (non-detectible levels of dioxin and arsenic), activated charcoal, Copper sulphate, aeration,

3.12 Filtration

3.12.1 Organic

Aim: Allowable materials not defined.

Standard: Cellulose, textile (unbleached/chlorine free).

3.12.2 Non organic

Aim: Bentonite (non-detectible levels of dioxin and arsenic), Diatomaceous earth

Standard: Diatomaceous earth, bentonite (non detectable levels of dioxin and arsenic), perlite.

3.13 Acidity Regulation

Aim: Not admitted

Standard: Potassium bicarbonate KHCO_3 , CaCO_3 , Tartaric acid (E334) permitted

3.14 Bottling aids

Aim: Not admitted

Standard: CO_2 , N_2

3.15 Bottling

Aim: -

Standard: Glass

3.15.1. Closures

Aim: -

Standard: Glass, cork, screw top, crown corks

3.15.2 Tamperproof seal

Aim: -

Standard: Nirosta, plastic or tin capsules, poly cap, sealing lacquer or wax.

3.15.3 Declaration

Aim: -

Standard: Country of origin labelling required

3.16 Cleaning and disinfection

3.16.1 Premise and equipment

Aim: -

Standard: Water, steam, sulphur, soft soap, caustic soda, ozone, peracetic acid, citric acid followed by flushing with potable water.

4. Labelling of Demeter/Biodynamic® wine

4.1 Use of the Demeter brand

If wine is made from Demeter/Biodynamic® grapes, **and** conforms to the Demeter International wine standards, it may be labelled with the Demeter/Biodynamic® brand. The general requirements are detailed in LABELLING STANDARDS OF DEMETER PRODUCTS WITH THE NEW DEMETER TRADEMARK LOGO as of June 2000 revised June 2004. The logo may be used on the front label conforming to the standardized placement requirements in section 3. It may be used on the back label, following the same placement rules.

4.2 Use of the word Biodynamic®

If wine is made from Demeter/Biodynamic® grapes, **and** conforms to the Demeter International wine standards, the word Biodynamic® maybe used. Usage shall conform to the labelling standards for Biodynamic®. It may be used in the text on the front or back label. It shall not be used as a prominent logo.

4.3 Use of the flower logo

If wine is made from Demeter/Biodynamic® grapes, **and** conforms to the Demeter International wine standards, the flower countries have the option to use the flower logo on the back label, complying with the national standards for labelling.

4.4 Labelling restriction

If the Demeter International wine standards are not met, there shall be no reference to Biodynamic® or Demeter anywhere on any label.

4.5 Wines obtained from vintages before 2008, can be labelled only as “wine obtained from grapes certified Demeter”. The same rule applies to wines obtained as a blend of different vintages before 2008.

Appendix II – Biodynamic annual certification costs for farms, in Italy

1. Annual Renewal Fee:

€ 25,82

2. Annual Inspection Costs (are included costs for: inspection, certification, labelling, administrative steps):

€50,00 (for sales of certified product under €5000,00) till

€1000,00 (for sales of certified product in excess of €750.000,00)

3. Royalty on gross sale of certified product:

2% of revenues by selling products with the Demeter trademark,
in the case of wine labelled with Demeter trademark, the royalty is applied to the value of the grapes used.