

## Exploring the path of wine sustainability in isolated and limited production systems. A comparative analysis between two islands, Elba (Italy) and Santorini (Greece)

Daniele Vergamini<sup>a</sup>, George Vlahos<sup>b</sup>, Paolo Prosperi<sup>a</sup>, Fabio Bartolini<sup>a</sup>, Gianluca Brunori<sup>a</sup>

<sup>a</sup>University of Pisa, Dep. of Agriculture, Food and Environment , [daniele.vergamini@agr.unipi.it](mailto:daniele.vergamini@agr.unipi.it)

<sup>b</sup>Agricultural University of Athens, Dep. of Agricultural Economics and Rural Development, [gvlahos@aua.gr](mailto:gvlahos@aua.gr)

**Abstract:** *The purpose of this research is to understand how the evolution linked to the spread of wine certification schemes can influence the sustainability of isolated and limited wine producing regions. Specifically, the path of wine sustainability is analysed by comparing two production systems belonging to two islands of the Mediterranean region, such as Elba in Italy and Santorini in Greece. Through the "Sustainable Territories" framework proposed by Vandergeest et al. (2015) we aim to describe how the spread of certification schemes can drive producers into sustainable resource and space management. The "Sustainable Territories" framework helps us to understand the boundaries of the new territories shaped as the effect of networked relations among the elements that constitute the certification. Building on the information gathered through semi-structured interviews, we deepen the producers' strategic behaviour in order to understand if individual strategic choices are consistent with key relations that enhance the beneficial effects of certification schemes. In some cases, the spread of organic certification can be read as a transition of the wine production systems in continuity with the choices operated in the most recent past of the two islands. The relationships developed in the territory are then explained by the economic and market value generated by the new brands. This may mean that the system is not oriented towards sustainability, but it is only directed towards the respect of limits and practices imposed by the introduction of the new standard. In other cases, attention is directed towards processes of innovation in agricultural practices, which have spread through a system of territorial relations that promotes cohesion and co-ordination of producers towards more sustainable production systems.*

**Keywords:** *quality wine production, sustainable territories, decision-making, wine supply chain, innovation.*

### Introduction

In many Mediterranean contexts, quality-driven innovation has led the transition of traditional food production and organizational systems towards the emergence of new and specific food systems, sometimes gradually, while in other cases through conflictual processes (Vlahos et al., 2017). In such food systems, the territorial goals converge to obtain a certain level of quality through the use of hybrid strategies of diversification, vertical integration, horizontal coordination, territorial consolidation as well as financialization oriented to the development of commercial networks. Current competitive pressures and changes in consumer behaviour are further fuelling these dynamics, driving producers to develop higher quality products, such as healthy, sustainable and origin certified foods. If on the one hand the growing diffusion of organic products in the wine sector and the rapid increase of interest on high quality "exclusive" wines, attests to a different consumer's attention (Thorsoe and Egon, 2016), on the other hand they also represent a further transformation of the system that goes beyond the denomination of origin, previously considered as a point of arrival.

This article seeks to understand the role that a specific driver of change represented by the shift of consumption towards quality wine (i.e. changing consumption patterns towards quality), played in local transition processes of isolated and limited systems, such as islands of the Mediterranean regions. This worldwide phenomenon resulted in the establishment of an international market for quality wines which cannot be classified as a niche anymore since it is an important and constantly increasing segment of the global wine market (Fleming et al. 2014, Mariani et al., 2012, Ponte, 2009, Bisson et al., 2002, Baily, 2000). The asymmetry of information existing in the wine market as well as the complexity of the value attribution process for wine (Marchini, et al., 2014) mainly due to the multiplicity of factors involved e.g. brand, continent, country, region, denomination of origin, variety, awards, farming practices, publicity among others (Lockshin and Corsi, 2012) made indispensable the diffusion of quality standards and certification schemes, currently very widespread in the sector.

Building on the "Sustainable Territories" framework proposed by Vandergeest et al. (2015), we begin our study by describing how the spread of certification schemes can introduce entrepreneurs into sustainable resource and space management. The question raised is, in the first place, what is the impact of all these developments on the sustainability of closed and strictly bounded system like those of the islands? The second issue is to elicit the strategies those territorial systems adopt and adapt to their specific circumstances in order to cope with changes. We analyse these issues by comparing two production systems belonging to two islands of the Mediterranean region, namely Elba in Italy and Santorini in Greece. The islands' *winescapes* provide interesting cases to study the relationship between the diffusion of certification schemes and changes in sustainability of production as reflected and depicted on the territory. Wine has a prominent role in the economy of both Islands. The study is based on material mainly collected through 6 semi-structured interviews with wine producers in Elba and 18 semi-structured interviews with stakeholders in Santorini conducted respectively in the autumn of 2017 and 2012. The time lapse between the two sampling years has had no significant impact on the results because we focused on long-term processes and the analyses are based on the same timeframe.

### Case studies overview

In the last twenty years, the quality of the wines produced in Italy has highly improved. The production is increasingly characterized by Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) wines, as established by Regulation (EC) No.479/2008 and Regulation (EU) No.203/2012, with an increase of the surface converted to organic grapes. According to the National Information System on Organic Agriculture (SINAB), the surface converted and being converted to organic grapes has almost doubled since 2009. According to data published by ISTAT, the Italian wine production reached 50.1 million hectolitres in 2016 (i.e. 13% above the historical average from 2008 to 2016). In 2016, PDO wine production grew accordingly, reaching 19.3 million hectolitres, 20% above the historical average. While PGI production fell slightly to 14.8 million hectolitres, which was still above the historical average (i.e. about 1% more). The growing of quality and organic brands has prompted huge diversification and differentiation in produce across Italian regions.

In this framework Tuscany, which is the second region for the area planted with organic grapes in Italy, plays a significant role in the production of quality wines, owing to the morphological and climatic conditions which give Tuscan wines a globally-renowned reputation also as a tourist destination. The well-known landscapes of Tuscany furnish one of the most suitable locations in the world to create quality wines. The production of wine in 2016 in Tuscany was about 2.73 million hectolitres representing the 5.4% of the national wine production, of which almost the 90% are quality wines. The 57 designations of origin represent the union between history, territory and quality, making Tuscany one of the most important regions of Europe for its wines.

In 2017, the denomination of origin "Elba" turned 50, recognized by decree of the President of the Republic in 1967. It is the oldest after Vernaccia di San Gimignano (1966) to represent this step towards a higher quality production. Nowadays the production of high quality wine is exclusively aimed at the internal market of the island, the sole interlocutor of the local

production system unlike the rest of the Tuscan denominations, which focus on international exports. Compared to the past, the export outside the island is nowadays an isolated phenomenon partly linked to the efforts of some producers and partly due to tourism in the summer season. The transformation of this system, marked by significant historical events, changes in tourism demand, innovations at the local level, as well as changes in specific farming practices, was not linear and produced very different and often conflicting results. It is difficult to answer whether the efforts made to increase the quality of production have led the system to greater sustainability (economic, social and environmental). Despite the fact that both the tourism and the internal market are able to ensure a certain economic stability, there are many uncertainties regarding the investments necessary to cope with the further socio-environmental challenges.

The quality of the wines produced in Greece has also grown considerably. The Greek labelling scheme, introduced in 1970's, has been replaced by the European regulatory framework, after accession to the EC (1981). The main feature of the Greek wine sector recently, is a polarisation between table and quality wines. The total wine production has decreased by 23%, between the 2004-2009 and 2010-2015 periods. However, while the production volume of wines without quality certification has been reduced by 36.4%, on the contrary, the volume of Greek quality wines produced was increased by 83.2% (MRDF, 2016). As a result, quality wine production in Greece, account for 26.8 % of the total volume.

Vines and wine produced have existed and traded in Santorini for millennia. According to Kourakou-Dragona (1995), the vineyards in 1920 covered 3,500 ha. Since then, the Santorini vineyard presents a gradual decline with 2,250 ha in 1970 to 1,492 ha in 1997 (Drosou, 2005). More recent data of the Greek Single Farm Payment authority (2015) suggest that around 1,200 ha are still covered by vines since they receive EU Basic Payments, 98% of this dedicated to the production of the Santorini quality wines (PDO, PGI). More than twenty-five grape varieties, a lot of them indigenous, are grown on Santorini. It is worth mentioning that Santorini remains one of the few places in Europe with original un-grafted vines, as the vines proved to be resistant to phylloxera. Apart from its productive function, the vineyard of Santorini, created by farming practices and the relief, in combination with the volcanic landscape, constitute an asset for the island (Hadjimihalis, 2011). The practices adopted in order to make the most out of the environmental conditions of the island were scattered, non-linear self-propagation of the vines and pruning in the form of baskets, laid on terraces supported by dry stone walls using the volcanic stones. Those, although beneficial for the environment and the landscape, make mechanization almost impossible and their maintenance expensive and time consuming since they require skilled pruners and dry-stone builders.

The paper consists of six parts. The second part comprises the theoretical perspective. In the third part, we introduce the changing wine territory in Elba and in the fourth part we present the contested vineyard of Santorini. The different pathways to sustainability are examined in the fifth part, whereas the paper end in the sixth part with a comparative discussion.

## Conceptual framework

### **“Sustainable territories”:** Communities of practice and conceptual and operational utility

We developed the analysis on the basis of a recent and innovative conceptual approach, the “Sustainable territories” framework - proposed by Vandergeest et al. (2015) – that builds on previous works (eg. Eden, 2009; Foley and Hébert, 2013; Ha et al., 2012; Hatanaka, 2010; Klooster, 2005; Mutersbaugh and Lyon, 2005; Ponte, 2008; Vandergeest and Unno, 2012) focused on how sustainability certification brings nongovernment actors (industries and non-profit organisations) into resource management. Originally this framework was developed to describe how ‘sustainable territories’ are assembled through the certification of sustainable seafood: it can thus help us better understand the making of sustainable territories through markets more broadly, including the conservation territories. The application of this framework questions the creation of market value by showing that there are multiple logics

shaping food products' certifications. It aims to demonstrate that sustainable territories are created and framed through a variety of mechanisms and a complex layering of state and private authority. Vandergeest et al. (2015) argue that this complex and hybrid territorialisation outline the interactions between public and private authorities working through multiple logics. This understanding of 'territorialisation' draws on political ecology scholarship, which defines territorialisation as a process of creating a territory through the delineation of boundaries, and claiming the authority to control what people do inside these boundaries through enforceable rules (Vandergeest and Peluso, 1995). Therefore, a sustainable territory is deemed as an 'effect' of networked relations among the elements which constitute a certification (Vandergeest et al., 2015).

According to Vandergeest et al. (2015) territorialisation is thus accomplished not just through (re)defining bounded space, but more broadly through the assembling of four elements: space, subjects, objects, and expertise. First, sustainable territories redefine bounded spaces for the purpose of controlling activities (Bear and Eden, 2008); spaces may be connected to each other through processes of certification. Second, sustainable territories are created through the identification of subjects to whom the rights to use and the authority to manage objects of concern within the rules set out by state or non-state authorities are assigned. Third, we introduce what Vandergeest et al. (2015) call 'objects of concern' as participants in the assembling of sustainable territories. Fourth, sustainable territories are defined by expertise, which we understand in terms of a bundle of codified and concentrated knowledge (Mitchell, 2002), and the 'experts' who have the exclusive capacity and qualifications to create or apply this knowledge and produce the rules that define the central objects of concern, and thus the ecologies that need to be protected (Vandergeest et al., 2015). Vandergeest et al. (2015) originally propose this framework to examine how - and why - sustainability certification can reframe territories. This "territorialisation turn", they argue, is achieved through sustainability certification assembling different entities such as space, subjects, objects and expertise. Thus, this framework is meant to help assessing how sustainable territories are assembled, by whom, by which conditions and with what consequences, in order to better understand how this assemblage works and inform policy and practices.

According to this previous application, space, subjects, objects and expertise entities will help categorise the key features emerging from our empirical analysis on the impacts of the Denomination of origin scheme and the different strategies adopted in the two case study areas. The application of the framework in a closed and limited space like that of the islands allows a better identification of such key elements and of their role in the process of territorialisation towards improving the territorial sustainability.

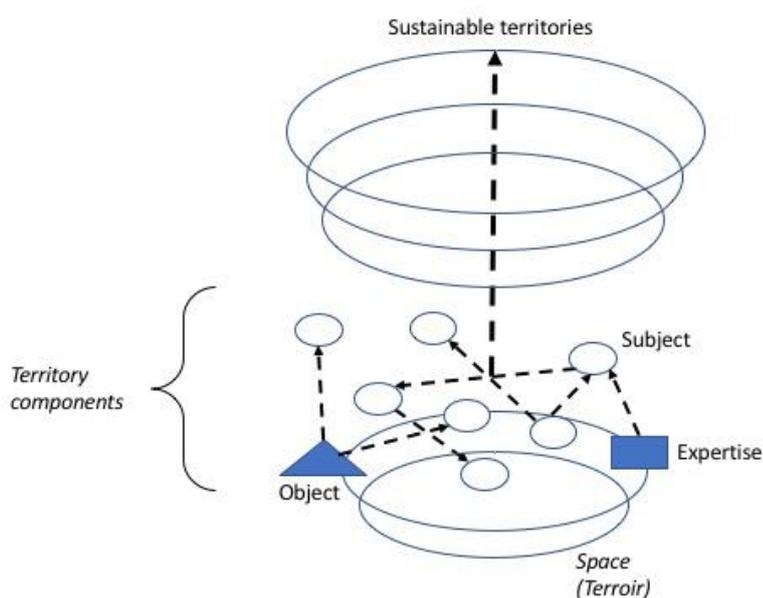
### **Characterization of the system**

In relation to the origin certification strategy adopted by wine producers on islands, it was possible to identify the key features that belong to the different entities of a sustainable territory such as space, subject, object, and expertise.

- Space is represented by the geographical and territorial context of the island where wine production is carried out. We argue that since PDO can be considered as regional product scheme, the link with the territorial space is strongly tied; thus, the rising demand of regional wines on the market is directly correlated with the space entity that characterized the territory of production. Thus, local and national competition on the market is faced through the same space-related dimension. Space here represents the hearth of the territorial capital owned by producers who benefit from the right of using the PDO.
- Key subjects are farmers who are owners of the vineyards in PDO areas and/or wine producers using PDO grapes from the same area. Other subjects can be represented by institutions, authorities or entities that supported or regulated the PDO scheme, but also wine cooperative and consortia that are likely to guarantee the PDO certification.

- Objects of concern are the PDO labelled products and the traditional certified production practices/methods. These objects entities are produced following the traditional capital of practices certified by the PDO scheme.
- Expertise includes, first of all, the controls and inspections that institutions and public or private authorities (i.e. the Consortium for the protection of the designation of origin) perform on PDO products. Then it also includes the skills in winemaking and farming practices.

In the next sections the territory is represented by the geographical context in which the wine production is carried out and can be seen as a dynamic system resulting from a stratification process assembled throughout history by several components (subject, object, expertise) and with different intensities. Thus, the characterization of the territory as sustainable cannot be separated from an identification of its main components (Figure 1), and especially the identification of which of these components could contribute to assemble sustainable territories Vandergeest et al. (2015).



**Figure 1.** The sustainable territory as a result of the interaction between the space components

## The changing wine territory in Elba

To describe the transformation process undergoing in the Elba island using the Sustainable territory framework, we first introduce the first dimension, the territory through the vocation and *terroir* (Charters, 2010) of the island.

The territory of the Elba island can be defined primarily for its *terroir* developed by the cultivation of the ancient white grape "Ansonica", which has a very strong affinity with the Greek vines. The Elba wine vocation has very distant origins and is linked to favourable morphological and climatic conditions. Looking at the production environment, we can introduce the elements that contribute to the determination of the subjects of this territory: the viticulture and tourism.

Although in the past it has played a primary role, viticulture is still today one of the main economic activities of the island. The first downsizing of the sector can be traced in the nineteenth century, when the 4,500 hectares of vineyards (Pullè, 1879), a third of the total area of the Island, were severely damaged by the oidium fungus and phylloxera insect. Then, the tourism boom of the island, from the 60s onwards, together with the abandonment of the countryside have changed the economy and the landscape of the island and caused a drastic decline of wine production and of its quality. Most of the traditional terraces that

before characterized the island's landscape were abandoned under wild bushes and trees, or from the increase in urbanization, while viticulture retreated to lowlands and adapted to more intensive agriculture techniques (Consorzio di Tutela dell'Elba, 2013).

Then something changed and towards the end of the '80s and the '90s, several producers arrived from outside investing again in the vineyards of the island.

*“In that period, the wine produced was not enough to cover the demand, thus our producers used to purchase wine from the outside” (Winemaker\_E3)*

During the last three decades, the second main subject of this territory, the tourism created the new conditions for the return to the vineyards. This transformation, linked to the new globalized lifestyles and consumer tastes under the emergence of the economic crisis, took place after 2010 at the end of mass tourism for the island. Thus, if in the first instance the tourism contributed to the abandonment of the viticulture on the island, with which it entered in competition for two fundamental productive factors: land and labour, in its second instance, defined by the process of expansion and growth of the tourism industry worldwide, the tourism becomes a promoter of the island's products towards more sustainable forms, such as ecotourism and wine tourism. Although nowadays the season is limited to two months of the year (i.e. July and August) tourism is still a fundamental subject of the territory of Elba. Many producers have tried to develop new touristic experiences related to the natural environment of their estates and to their productions (i.e. wine trekking, wine & bike, wine tasting), proving that tourism can reach a balance with the territory.

Before 2010, the production that had considerably reduced, was mainly focused on the internal market, which, through the different Ho.Re.Ca. channels and some large local distributors, was able to consume the whole wine produced. After 2010, there was a shift in producers' strategies, aiming to improve again the quality of their wines, which has led the territory to a new transformation of the object towards an improved quality. Under the guidance of the local consortium for PDO, the producers have focused on innovation trying to recover the lost traditions and the ancient lustres of the Elba vocation for quality wines, increasingly appreciated by wine tourists. While in many cases practices and techniques have been a forced choice e.g. varieties, pruning practices have been "imposed", but nevertheless had, as a result, a specific quality for the product (see for example the Madeira wines), the modernization and technological advancement rendered these practices obsolete and the specific quality was lost. Thus, it becomes an innovation to use traditional techniques in a new (technological, social, institutional) context, in order to give back to the product (in this case the wine) the lost quality that would differentiate it from others.

It was at this stage that each individual producer contributed to the redefinition of the quality component of the territory.

The Association of Producers established in 1987, now represented by the consortium for the PDO wines, was the promoter of the revival of the viticulture of Elba. The consortium therefore had a great role in the introduction and promotion of the different grape varieties (i.e. mainly traditional varieties of the island with the introduction of some new varieties from outside in order to differentiate the products) of the island, in revitalizing the quality of the wines produced as well as in creating a productive environment aimed at the collaboration between the different producers.

Since the first interviews, the key role of the Consortium for PDO has appeared in uniting the various producers and guiding them towards relaunching the new concept of quality of Elba wines

*“We know each other very well and often we help each other for the development of new practices, to give advice and to organize transfers to other regions or outside of Italy (i.e. international wine fairs). We have a “WhatsApp” group that helps us to be always in touch (i.e. even to prevent, even to warn each other of problems and emergencies). The atmosphere is of general collaboration, although the difficulties are not lacking. Not all producers speak the same language and often individuality does not allow team strategies” (Winemaker\_E4).*

In addition, the interviews have identified collaborative relationships between companies that often help in the exchange of wine consultants and services related to wineries.

However, the transformation of the object, the quality of Elba wine, has not been linear. Some producers have highlighted the lack of a leading firm that can drive the rest of the sector as it was in the past until the island's most important wine producer retired changing the company's management and ownership.

Moreover, looking to reinforce the identity of their wines and trying to differentiate the production with respect to the naturalistic values of the territory some producers have turned towards the production of organic wine. In some cases, they started from the integrated production and then they passed to organic; in other cases, they started directly with the organic method like a personal choice from the beginning, while for others nowadays the process is still ongoing and they will see the first results in the next years.

In this difficult transition one point that is worth mentioning is related to the positive and proactive role of the local market organization. The market organization has developed in a symbiotic way with the production and the rest of the territory. The domestic market is able to absorb completely the production and despite the rising competition of foreign wines, the local Ho.Re.Ca. channels and large distributors guarantee a secure outlet to local wine producers since sales relationships are often mediated by local relationships and trust. While through the tourism the market opens to the outside importing new global trends, the recognition of quality remains strongly focused on the local products that take advantage of a position of natural privilege or 'localness' (Vlahos et al., 2017) compared to products imported from outside. This element echoes the globally widespread perception of provenance as an element of quality.

The transformation of the strategic choice of quality has contributed in the development of new relations in the territory that have driven the change in local expertise, the third dimension of the "sustainable territories" approach. At first glance, the change in this field seems to be driven by the role of the consortium for PDO wines within the paths established by the regulations. The institutional setting, which represents the set of formal and informal rules that describe the context in which production and transactions are carried out, including the role of local institution and policies, contributed to layer the new winemaking expertise. The product specifications for the Elba PDO is part of the local knowledge. As established by Decree of the President of the Republic in 1967 this text defines the production rules and quality characteristics of the types of wine admitted under the mention of Elba PDO. Then another important set of rules for the sector is represented by the European legislation on Organic wine production. The Commission Implementing Regulation (EU) No.203/2012 applied in Italy through the Ministerial Decree (DM) No.15992 of 12/07/2012 represents the reference standard for organic wine legislation. These rules define the normative layer on which today the new concept of quality of Elba wines develops through the local expertise.

An additional key element of the local expertise lies in the ability to differentiate products (also on the touristic side) through process innovation while maintaining the focus on tradition and local environment. Some producers focused on making their wine more attractive by the experience and skills of new winemakers, while others are taking care of the environment and the territory within the biological method or with the replacement of the old terrace system

*"I start in 2010 the development of my company with several innovations: recovery of terracing with drywall, product innovation with wine in the Amphorae and introduction of new grape varieties. I planned for next year a conversion of a part of terraced surface to organic" (Winemaker\_E6).*

In the search for differentiating products and sale channels, a more recent aspect concerns the search for direct contact with the consumer through quality tourism. On this last aspect, new consumer experiences have been developed as well as wine outlet for tasting and direct sales.

*“The wine trekking and wine & biking experiences try to innovate the concept of wine tourism. The aim is to take the consumer out from the cellars and tables in order to experience the territory” (Winemaker\_E4).*

Against this background, there are also other social and cultural experiences that try to bring tourists closer to the territory and its traditions. The interviews also identified several relationships with other producers' associations concerned with the promotion of local products of the Elba Island as well as other islands. This is the case of Elba Taste, with which several producers collaborate bringing their wine directly during tasting events and the association of small islands that tries to group the products of the islands and communicate them to the external markets.

Other interesting relationships involve tour operators on site and even outside the island. In some cases, tourist trips or accommodation packages are organized including a part of wine tourism with wine tasting in the cellars. Moreover, there are the cases of the educational farm and of the recovery of a traditional festival at the end of the vintage that aim to show the stages of the production process such as pressing the grapes as it was done in other times before the arrival of the machinery by local farmers.

However, the local expertise seems to be affected by the lack of coordination on the part of the other institutions and related policies. The lack of coordination and support is also expressed by the strong divisions between individual municipalities of the island that becomes a critical point for the sustainability of ongoing transition. The respondents reported a lack of common investments and territorial coordination of the various economic and social activities that the island can offer.

## **The contested vineyard of Santorini**

During the last three decades, the wine industry of Santorini has undergone a major transformation. Up to the mid 1980s, it was a bulk producing industry of table wine which was either consumed locally or traded through traditional personal networks to the urban centres in Greece. Since then, a shift towards high quality wines, aiming at the global quality wine market has been performed with considerable success (Vlahos and Louloudis, 2011).

One could describe this transformation process using the Sustainable territory framework and the changes that occurred could be identified within these dimensions.

Thus, the first impression concerning space, in that case, the vineyard, would be that it is very well defined and limited since the space examined is an island. However, one of the most contested issues in Santorini is land use and consequently the landscape. Since the beginning of the tourist boom of Santorini, late 1980's, agricultural land has been under intense pressure owed to the constantly increasing demand for space by tourist activities (hotels, restaurants, bars etc) and tourism related land uses (commerce, logistics etc.) Tourism has been later replaced by holiday residence as the driving force for urbanisation pressure, with similar effects (Vlahos and Louloudis, 2011). However, the shift towards quality wine and the registration of Santorini wines as PDOs and PGIs has created a counterbalancing force against urbanisation. Before that shift, vineyards were considered almost worthless, bearing in mind the opportunity cost of maintaining agricultural use. Furthermore, global changes in tourism, avoiding mass uniform travel experiences and turning towards speciality tourism (rural, wine tourism) introduced a new element in the determination of the space. An increased number of visitors, particularly those descending from large cruise ships, during their permanence on the island, spend their time for wine tourism. Hence, this created an informal alliance

*“there are a lot of people that advocate for the protection of the vineyard now, us [winemakers], hoteliers, holiday residents etc.”, against the short term thinking of owners of small land plots, “the no longer possible petty dream” of building a small “rooms to let” and rely less on or even give up farming” (Winemaker\_S1).*

The above statement makes apparent the polarisation of the subjects namely farmers and wine makers. On the one side, one can distinguish land owners and farmers managing very small area with multiple plots, mainly gathered around the local co-op which acted as last resort buyer. It is indicative that the average size of vineyards per farm, according to the 2015 single farm payment data, was 0.88 ha divided in more than 2 plots, resulting in a rich mosaic but impractical landscape. And on the other side, there are around 15 winemakers controlling 40% of the 2012 wine production. The relationship between the two poles is varying. In the beginning of the shift towards quality (the 1980s-90s) an informal decision of the coop to relax the obligation of its members to supply at least 25% of their produce to the coop, helped individual winemakers to assure grape supply (Iliopoulos and Theodorakopoulou 2014). However, the different strategies followed by the two groups created frictions, an indication of which is the statement cited above.

The shift of wine makers towards quality wines, have placed Santorini in the front line of the Greek quality wine industry effort to enter the global markets. However, this transformation of the object, the wine, has not been uncontroversial. Wine makers, most of them new entrants in agriculture set as their primary objective high-quality wines, adapting to “international standards” (Nossiter, 2009). In this pursuit, winemakers have been demanding certain quality characteristics in order to buy the grapes, without, according to farmers, offering adequate compensation (Member of the co-op\_1). These quality features required changes in the practices and different sets of skills and expertise (see relevant part).

Most land owners and farmers, however, stuck to the local co-operative, which in 2012, controlled 60% of the production. The co-op places far more emphasis on the provenance of the grapes and promotes local consumption and direct marketing to tourists.

On the other hand, the new practices adopted by “international” wine makers in order to achieve the homogenised quality are, according to the co-op officials, detrimental for the reputation of the wine.

*“[...] the way ..... [winemakers] are cultivating their vineyards is far from the local tradition, since they use pesticides and, more than that, they destroy the Santorini landscape by planting them in linear supporting systems” (Co-op rep\_S1).*

For the farmers joining the co-operative and its executives, the object, the wine, seems to incorporate the vineyard as a landscape. They argue that the reputation of Santorini wine is closely linked to the particular landscape,

*“It is like destroying the main asset, not only of the wine but of the entire island” (Coop rep\_S2).*

Hence, PDO certification is seen as a collective project in order to pave the way for sustainability of the island.

Innovative wine makers on the other hand, set their aims high. In that sense PDO certification, is seen as a mere marketing tool, reinforcing the individual brand, useful in order to establish a brand name.

*“Santorini, I insist that we don't use the variety as the brand name, we should use the island, has its place among the great wines. In order to stay there, we need to expand to other varieties, preferably red, and promote them” (Winemaker\_S1).*

The resistance of the co-op to aim high, is attributed, by winemakers, to fear of innovation, reluctance to change and/or bureaucratic inertia.

As for as the expertise, the last dimension of the “sustainable territories” approach, the changes seems to be the drastic. Winemakers seem to rely heavily on the new methods and practices in order to achieve “international recognition”.

*“I have studied at Bordeaux and I have had practice in California, Australia and northern Greece in order to get to know Xinomavro [ a red variety] and their other varieties. I ended up in Santorini in order to apply this experience” (Oenologist at one of the innovative wineries\_S).*

This new expertise that is necessary to achieve the objectives of the innovative winemakers, that is the production of “international” wines, actually expels traditional techniques as obsolete and creates conflicts. One example of these conflicts concerns the production of “Nychteri”. This type of wine was the result of a quick co-vinification of three varieties asyrtiko, athiri and aidani. The grapes were harvested late September, starting very early in the morning and pressed during the same night. The whole process, adapted to local circumstances, gave a specific character to this wine. All varieties in a single plot could be harvested simultaneously, since the plots included a mixture of varieties. Contemporary winemaking calls for one plot – one variety arrangements, harvested separately according to the wine they are expected to produce. Hence, the novel versions of “Nychteri” are single variety.

Another contested practice is timely harvest, an imperative in order to produce the quality wines desired, which however creates problems to pluriactive farmers since it coincides with the peak touristic period. They and the younger members of the family have to give up the additional income from tourism in order to harvest the grapes.

A particular pruning technique was used in order to protect grapes from the strong winds and overexposure to the sun and also to gather and utilise night dew. The linear form of supporting the grapes, considered as essential by innovative winemakers, apart from the changes in the landscape, turns the pruning skills redundant and creates the necessity for new ways to deal with dry weather and pests.

These innovations, hence, seem to weaken the linkages of the PDO and PGI wines with the territory in both its spatial/physical as well as human aspects.

An interesting note is that some of the pioneers in the quality shift deny the possibility to create a high-quality wine using organic methods

*“Organic is for hobby farmers. You cannot produce a wine of “international quality” with organic. I got into the organic certification and received organic payments but it is not worth it” (Winemaker\_S1).*

## **Different pathways to sustainability**

Through the elements that we have observed and analysed we can support the hypothesis that the Elba system is oriented towards increasing the sustainability, but it is at the beginning of the transition. Many factors indicate this transition, such as the current practices of recovery the terraces, the greater attention to the environment through a more rational management of viticultural practices and in some cases the development of organic farming, as well as the shift to more sustainable form of tourism. Together with these positive factors we found a productive atmosphere aimed at collaboration and overcoming local problems. The terroir of the island and its geographical proximity play a fundamental role in this direction (producers are often located a few kilometres away from each other), for which they share the same problems as well as they share specific skills and knowledge.

However, there are several issues that could hinder these progresses. The main obstacle to the achievement of a more sustainable territory is represented by the lack of coordination at the institutional level that results in lack of a common policy and related investment for the further development of the island. The producers' actions need more support from the institutional level. Without a territorial coordination, they risk remaining just isolated cases. To enhance the historical and naturalistic capital of the island, new infrastructures are needed:

*“We need to work as team in order to improve the management of our territory, in order to enhance the experiences that we have created, but we need a plan and a coordinated action” (Winemaker\_6).*

Then several more specific challenges also emerged, such as the growing problem of drought, as well as other local problems related to soil erosion. Overcoming these obstacles goes beyond the various conflicts at the local level, leaving space for a collective vision that will overcome the current crystallization and lack of power and decision-making.

Finally, if we consider the further specification of quality towards the organic wine made by some producers, for an area comprised between 10 and 20% of the total vineyard of the island, this has certainly helped to stimulate the discussion at the local level and redefine some possibilities of production and consumption that for some producers and operators in the supply chain had not yet been considered. However, it has been a choice more driven by personal motivations rather than by reason of organizational proximity offered by the territory. Thus, the relational value of these products is not yet such as to contribute significantly to a change of the network of relations on the territory. In addition, the implementation process has encountered various technical and cultural difficulties. The low lands, where most of the vines have been planted in the past, are subject to greater humidity during the year and thus are difficult to manage with organic method because they are very easily attacked by pests. Also, the interviewed producers have reported the lack of organic fertilizers on site. This constraint increases production costs since these fertilizers must be imported on the island. From the marketing side, they also reported the scarce knowledge of consumers and Ho.Re.Ca. members of these products that does not allow the attribution of a premium price. Consumers and distribution intermediaries recognize first and foremost the goodness of the product as it is linked to the name and image of the company, and not to the organic brand that goes into the background. Given that organic growth and its diffusion on the market has not yet produced a significant reduction in production costs, for many producers the slightly higher price compared to the increase in price due to the PDO brand has not been a key element in order to adopt the method. Thus, what has clearly emerged is that the diffusion of organic wine on the island was not a market choice. However, for all of these reasons, it seems premature to say whether or not the phenomenon is contributing to increasing the sustainability of the island. Certainly, the greatest concern among the producers who have already developed the method or are now adopting it, is related to its potential spread on the market that can compromise the original message and values of the organic practices. According to these producers, the method could help redefine greater sustainability on the territory, but more training and awareness among producers and consumers is needed. The risk to develop organic wine just with marketing is to create an economic bubble which is far away from the sustainability values in which these producers believe with the risk of undermining the consumer trust.

The policy choices made in the case of Santorini, affect the dimensions of territorial sustainability, as analysed in the conceptual framework above. The vineyard in both its physical/spatial and cultural aspects has been highly influenced by ineffectiveness or absence of regulatory land use and spatial planning measures. The only measures actually implemented have been incentives provided for the continuation of farming activity. But they seem not to have been effective enough to sustain pressures coming from urbanisation and tourism. The effect on the agricultural, volcanic as well as the urban landscape of the island has been detrimental, affecting thus an important natural capital asset of the territory.

In the other component of the territory, the wine, it seems that PDO and PGI denomination and the related certification scheme, have, in principle, recruited all active actors. However, it seems that one part of the winemakers is using the certification of origin as a mere marketing tool in their individual strategy to place their product to the international quality wine market. At the same time, the local co-operative of farmers, with some individual winemakers and the majority of farmers, incorporate all aspects of the territory in their strategy linking further the wine with the vineyard and farming.

Finally, traditional practices and the associated expertise, made the Santorini vineyard a High Nature Value farming system, contributing to both landscape conservation and biodiversity improvements. Expertise seems to play an essential role in the provision of these two public goods. Maintenance of the expertise means that the sustainability of the vineyard is going to be based on both the landscape and the wine. Detaching the wine from the local

expertise connects the sustainability of the territory to access in the international quality wine market<sup>1</sup>, reducing thus the autonomy of the system hence its resilience.

## Comparative conclusion

In both areas the establishment of EU origin certification scheme PDO, PGI was a milestone. Farmers and winemakers in both territories adopted the scheme as an essential part of their strategy. Incorporation of tourism as part of their path to sustainability is another commonality. However, while for both islands the initial choices, the starting points have been similar, the paths followed seem to be quite different.

The main strategy in the Elba island concerns the development of high-quality wines through the PDO certification scheme, which increasingly include certified organic production, using wine and naturalistic tourism as a mean to relaunch the territory. In the broader view of the object, the concept of quality that has been revised in the last 10 years is contributing to re-assemble the local space. The PDO and organic certifications, which are the focus of the local network, are driving the space towards the development of a system that is careful with the territory and its social and environmental values, which cares about the health of consumers (i.e. reducing sulphites, chemical inputs), capable of developing innovation and wine producers' coordination through the existing local network or through the collaboration with other local associations. However, the analysis of the transition highlights the need for a greater support by institutions on collective actions that aim to promote more sustainable water management systems, new trade infrastructures (i.e. with a special focus on export) and the access to farming to young winemakers. The transformation of the subjects and expertise towards a trajectory capable of interpreting these needs appears as a key factor for the sustainability of the territory.

In the case of Santorini, one can distinguish two polarised strategies, with a different view of the object in relation to the space of the territory and the expertise. The first was the one striving towards a place in the international quality market. The PDO certification scheme is a very useful tool for their individual marketing strategies, while organic certification is not an option since it does not offer added value to their product. Their strategy called for a detachment from local people and expertise and the creation of a niche tourist market of oenophiles. Land is seen and valued as a factor of production with a similar, productivist, view to the landscape. The second alternative is attaching the object to the territory, in a broader sense, including local expertise and culture. PDO is a collective project in the service of the development of their territory as a whole. The vineyard is considered, apart from its production function, as an asset for the island providing other services e.g. amenity.

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<sup>1</sup> The latter is confirmed by the fact that one of the pioneers of the shift towards “exclusive” wines, produced a relatively cheaper wine called “Crisis”.

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