

Farming System Transformation as Transition to Sustainability: a Greek quality wines case study

George Vlahos, Pavlos Karanikolas and Alex Koutsouris

Agricultural University of Athens, Department of Agricultural Economics and Rural Development

Key-Words: Transition to sustainability, space for innovation, quality wines, Greece

Abstract

This study aims at analyzing the gradual transformation of a low input and bulk wine producing system into a quality system. This transformation is examined in Santorini Island in Greece during the last three decades, in a highly contested natural landscape. The conceptual framework draws from the 'transition to sustainability' approach, in particular the theoretical apparatus of the multi-level perspective (MLP). Spaces for innovations as well as threats for this transformation have been created by a series of 'socio-technical landscape' pressures, along with processes internal to the 'niche', the links between the niche and the 'regime', as well as multi-regime interactions. Public intervention in the form of both regulatory and incentive provision policy measures had a considerable impact on creating space for these reconfigurations and innovative forms of organization. A series of conflicts have been identified, as well as a polarization in the power game. Despite significant efforts for co-ordination among local stakeholders, there's a need for more permanent forms of co-operation such as an innovation platform. The interests vested are important hence the necessity of an institution acting as a mediator seems to be apparent.

1. Introduction

Various challenges and change in agri-food systems are increasingly analyzed through the 'transition to sustainability' perspective over the last 10-15 years (Hinrichs, 2014). In a similar vein, following a systems approach, innovation is considered as a successful combination of new technical devices and practices, new knowledge and new social institutions and forms of organization (Smits and Kuhlmann, 2004).

Deliberate efforts for the development of a quality wine sector in Greece date back to early 1960's. An early system of labeling had been introduced in 1970's, while after Greece's accession into the EEC/EU in 1981, quality in the wine sector is promoted within the overall European regulatory framework.

More recently, the Greek wine sector is characterized by both declining production volume and quality upgrading. While the total wine production has decreased by 23%, between the 2004-2009 and 2010-2015 periods (i.e. before and during the current crisis), wines without any quality certification have been reduced by 36.4% while quality wines increased by 83.2% (MRDF, 2016). Thus, between these periods the share of all quality wines has more than doubled, from 11.3% to 26.8%, whereas in early 1990's quality wines contributed 6% to the total wine produce of the country.

Wines of Santorini island have always been the spearhead in these efforts. Santorini's wines entered a new era after they received their own Appellation of Origin, especially after 1981 (see below). Nowadays, high quality wine production aiming at the global market is an integral part of the local production system. In the course of transformation of this system, a series of innovations have been introduced and established, including the use of new technological and biological means, as well as changes in specific farming practices.

It has to be noted that following a complex adaptive system approach, development in tourist areas can be understood as a multilevel, co-evolutionary process, involving diversification in tourist products, which requires, inter alia, networking activities among actors and various niche-innovations (Hartman, 2016).

This study aims at analyzing the gradual transformation of a low input and bulk wine producing system into a quality system. This transformation is examined in Santorini island in Greece during the last three decades, in a highly contested natural landscape. The conceptual framework draws from the 'transition to sustainability' approach, in particular the theoretical apparatus of the multi-level perspective (MLP). Spaces for innovations as well as threats for the transformation examined here are explored in the context of a series of 'socio-technical landscape' pressures along with processes at the 'niche' level. The study is based on material mainly collected in the context of the EU-7th Framework Programme FARMPATH ("Farming Transitions: Pathways Towards Regional Sustainability of Agriculture in Europe"), as well as in previous research on the same area.

Data within the FARMPATH project were collected through open-ended interviews with 20 stakeholders, including the local Dept. of Agriculture, the local coop representatives, winemakers and representatives of national collective bodies of winemakers. Previous research addressed the topic of the island's landscape and was carried out through discussions with local key-informants (winemakers, agronomists, coop representatives, etc.).

The paper consists of six parts. The second part comprises the conceptual framework, followed, in the third part, by an account of the construction of space for innovation in the framework of the emerging transformation. The key role of policies is examined in the fourth part, whereas a series of conflicts, synergies, open issues and the need for mediation are discussed in the fifth part. In the last section the paper concludes.

2. Conceptual Framework

The substantial transformation of socio-technical systems to more sustainable modes of production and consumption, i.e. their 'transition to sustainability', has taken a prominent place in the academic literature over the last 10-15 years. The multi-level perspective (MLP) has been the main theoretical framework for this research, using the analytical categories of regime, landscape and niche (Geels, 2011). MLP contends that transition comes about as a result of pressures from the broader 'landscape', combined with the propagation of innovations that have been nurtured at 'niches' (Konefal, 2015).

In this context, an agri-food regime can be conceptualized as a configuration of co-evolving technical, social (actors and networks involved) and institutional (prevailing values, knowledge systems and policy measures) elements (Ingram, 2015). On the other hand, the socio-technical landscape is perceived as an exogenous environment that affects both the regime and the niches by exerting pressures, which can create tensions and offer opportunities for change (Geels and Schot, 2007).

Of major importance to any transition are the processes taking place within a niche, i.e. a 'nursery' in which various novelties can be tested and developed (Kemp et al., 1998). With the active contribution of local actors and networks, these niche innovations after their initial development, could be successfully

linked to the regime, thus setting in motion broader transformative changes at the regime level. On the other hand, from a systems perspective, a multitude of stakeholders and networks are involved in an innovation process, while innovations include new social and organisational arrangements (Leeuwis and Aarts, 2011). In exploring the potential of 'space for innovation', the processes of development of a niche are of prime importance, especially the articulation of expectations and visions, as well as the building of social networks and the enrolment of more actors (See also Schot and Geels, 2008).

Moreover, transition is a process with an 'uncertain' outcome, which usually involves frictions, tensions and competing views on the direction of change. As innovations are being introduced in a niche and breakthrough into the agri-food regime, both the internal structure of the regime and inter-regime relations are rearranged. Thus, serious contradictions as well as a series of unresolved issues (e.g. from multi-regime interactions) may emerge, which may hamper the overall momentum of the transition under study.

By using this framework, the actual and/or the potential role of mediation can be identified, which could be beneficial to the innovation process by closing system gaps, facilitating network formation and managing the innovation process (Kilelu et al., 2011).

3. Space for innovation in an emerging transition

3.1 Socio-technical landscape pressures

During the last three decades, the time frame of our paper, there have been two main driving forces conveying various pressures upon the local regime.

Firstly, tourism development (since the early 1980s), which mainly affected space and labour, the most contested dimensions of the local regimes. The emerging tourism industry of the island was in dire need of both of these elements. As land has always been a scarce resource and the ownerships were small and highly fragmented, the increased demand for land, for the construction of hotels and other tourism enterprises, resulted in a considerable increase of land prices, including agricultural land. At the same time, attractive salaries were offered to the local labour force in both tourism and construction, therefore absorbing obscured unemployment and reduced out-migration.

However, within the process of expansion and growth of the tourism industry worldwide, global changes such as improved transport infrastructure, lifestyle changes as well as saturation of certain market segments, caused the emergence of strong trends within tourism industry towards the provision of differentiated and diversified tourism services. New forms such as ecotourism, cruises, wine tourism or combinations of these emerged during the 1990s and gained an impetus. Big hotels and mega-installations were not sought after any more, hence the demand for land became more eclectic; smaller pieces of land and the landscape became an asset. In parallel, the transition processes in Eastern European economies and elsewhere, during the 1990s created a large pool of available labour. These changes seem to have had impacts on both the local land and labour markets.

An additional sociotechnical landscape pressure has been the development of a worldwide market for quality wines in which globalization is manifested through a strong tendency towards homogenization of the taste and the creation of 'international wines' (Nositer, 2010). The market for quality wines seems to be expanding rapidly during the last decades, as can be seen by sales and exports data. Thus, various changes occurred, in order to facilitate a new way of co-ordination of the wine production stakeholders so as to deal with the various external threats or opportunities concerning wine production (Barbera and Audifredi, 2012).

Finally, the globally widespread perception of 'localness' and provenance as an element of quality, especially for wine, has been a further socio-technical landscape feature that seems to have played an important role for the changes that occurred in Santorini wineries. There are quite a few elements that suggest that geographical indications (GI) provide a considerable added value to wine, e.g. a price differentiation for GI wines (EC, 2012).

However, the role of 'terroir' as a decisive factor of quality, is not a fact as incontestable as one might expect (Josling, 2006). Especially in the case of quality wines, the issues of grape (variety) vs. terroir or the uniformity of 'international' wines as opposed to the diversity of local wines the debate is open (Nositer, 2010; Negro et al. 2007; Anderson, 2009; Patchell, 2011; Luger et al., 2011).

3.2 The regimes under transformation and the new driving forces

In the case of Santorini, the two interconnected regimes, tourism and agriculture (mainly wine production), can be better described, by analyzing the synergies and conflicts created during the co-evolution of both regimes in the three last decades.

Santorini is known for wine production and trade since the 5th millennium BC. Almost 100 years ago (1920) vineyards covered 3,500 ha, accounting for 84% of the cultivated land (Kourakou-Dragona, 1995). A gradual decline over the years was accelerated by a massive earthquake in 1956 (2,250 ha. in 1970) followed by the augmentation of tourism in the 1980's resulting to 1,492 ha. in 1997 (Drosou, 2005). Since then, the area covered by vineyards seems to have stabilized.

Twenty-five indigenous grape varieties, adapted to the hot-dry climate, harsh winds and volcanic soils, are grown on the island. Also, Santorini remains one of the few places in Europe with its original un-grafted vines, as the volcanic geology made its grape varieties immune to phylloxera (Kourakou-Dragona, 1995). Two practices, manifestations of the adaptation to the local environmental circumstances, constitute a crucial element for the landscape of the island. The first is the self-propagation of the vines, which makes mechanization and the use of equipment almost impossible. The second concerns two peculiar pruning practices which, in parallel, require skilled pruners and increase costs.

The wine produced, was sold, mainly in the form of bulk, to the nearby islands as well as to the mainland, through informal networks of internal immigrants. The local co-operative afforded the only sizeable bottling unit and an elementary marketing mechanism.

As aforementioned, during the early 1980s Santorini started being an increasingly attractive tourism destination. The process followed a pattern common in Greece: a disorderly establishment of small size tourist installations, starting from the littoral and gradually expanding to other areas. The view, the volcano, sunset, beach and the nightlife were the main (if not the only) features of Santorini tourism industry. The linkages established with other local agricultural products besides wine (e. g. small tomatoes, fava etc.) were virtually inexistent.

On the other hand, the small size of the numerous tourist activities did not lessen the pressures towards agricultural land uses. An equally important impact was the increased option-cost of the labour, especially concerning local youth. Adopting a flexible strategy, households divided available labour, with the older members dealing with the vineyards and the younger occupied in construction and tourism. The small size of businesses in both regimes permitted the smooth flow of labour between the two regimes. Nevertheless, the proportion of labour dedicated to agriculture shows a continuous decline during the last three decades. On the other hand, the jobs created in construction seem to retreat after a significant increase during the 1990s, while tourism accounts for an increased proportion of the labour force of the island.

However, the adaptive strategies followed did not mean that the pressures on agricultural land use and labour ceased to increase, resulting to an impressive sprawl of urban uses, increased land prices with detrimental effects on the rural and the volcanic landscapes as well as on the built environment of the island. Gradually, the flourishing tourism businesses attracted further external investment, as well as real estate. Cheaper external labour became also available on the island creating thus increased competition for local labour.

3.3 Emergence of the niche

During 1980s, one of the largest wine-making companies, based in Northern Greece, started its first attempts towards quality wine production in Santorini, in collaboration with local bulk wine producers and the co-operative. At the same time they experimented with traditional techniques used in the area such as the use of Canava, i.e. human-made grottos used for the aging of the wine.

This decision seemed to have been influenced by four factors: a generational change within the company; the availability of new technological innovations, especially for the processing of the grapes, along with funding through either national or EU structural subsidies; and, finally, the coincidence with the increase of arrivals of tourists on the island. All factors acting synergistically, seem to have triggered the initiation of the niche, starting with the construction, in 1989, of a modern winery and an information center in which visitors could taste and purchase wine (Boutaris Winery, 2016). Later on (1992) the local co-op, counting for 2,500 vine cultivators, created an independent facility with considerable success (Santo wines, 2016). In this respect, two regime actors played a crucial role in the initiation of the niche: they offered legitimacy and resources as well as considerable momentum to the niche (Geels, 2011).

These two efforts, apart from being two successful initiatives, paved the way for a new wave of winemakers, who were mainly younger people with origins on the island, who up to 1980s were migrating for studies or/and work. These returning “new entrants”, came to the island having already established professional, personal, political as well as social network linkages during their previous occupation. Apart from vision and contacts, some of the new wine-makers further owned agricultural land and in some cases installations as well as had family tradition in wine-making.

A substantial co-ordination of efforts of individual winemakers can be identified in the efforts for joint presentations to international fairs and exhibitions, participation in contests as well as establishing linkages to mainstream and influential specialized press. Another key co-ordination effort is a ‘voluntary commitment contract’ that all wineries of the island signed with the National Inter-Professional Organization of Vine and Wine, whereby they are bound not to follow unfair competition practices as well as to protect the fame of the product. Therefore, apart from the multiplication of involved actors, the niche has set in motion the creation of new networks and a remarkable networking activity.

In parallel to the emergence of the niche, in the tourism regime, the global trend towards alternative forms of tourism highlighted the environment and ‘localness’ as important elements of diversification of the tourism product; this trend coincided with the ‘saturation’ of the conventional local tourism market in Santorini, also offering local wineries with an opportunity for synergies. Currently, there are more than a dozen wineries offering wine-touristic services as well as direct sales. Wine-tours are offered to tourists during the whole touristic period, some by specialized agencies. Thus, the niche contributed to the creation of strong links between the two regimes.

4. The key role of policies

The island of Santorini was one of the first places in which the Greek state tried to design and implement policy measures to promote quality wines. The first 'Appellation of Origin' for Santorini's wines was legislated by the EEC in 1970 as a result of a Greek request, based on the findings of a number of oenological studies, conducted by the Greek Ministry of Agriculture in 1962, concerning the ecosystem of the island and three native vine varieties (Kourakou-Dragona, 1995). The next decisive step was taken in 1981 – when Greece accessed EEC – with a Santorini wine labeled as 'VQPRD' in the EEC market, following requests of the Greek state. This designation triggered the whole formation of the niche in Santorini, along with the abovementioned developments in the 'regime' and 'landscape' levels¹.

A second policy has been the support of investments provided by national and EU funds. Technological innovations in wine making have been available since the late 1970's (Colman, 2008). What this policy made possible was the access of wine makers to these innovative techniques by significantly contributing to investment costs. The small size of the vineyards in Santorini would render the quest for investment capital for novel techniques and equipment in winemaking a rather difficult exercise. Especially when one refers to small specialized businesses, with limited possibilities for expansion in size.

Furthermore, within the EU rural development policy framework, two incentive policy measures have been implemented during the last two decades. The older one, since the 1990s, concerns the support of the small islands of the Aegean sea. Acknowledging the accessibility problems as well as the increased production and marketing costs of agriculture in the islands, the EU provides financial support to the active islander farmers. Furthermore, farming on islands is considered of great importance for the maintenance of a high level of environmental protection. Hence, within this specific policy measure, a scheme for the maintenance of traditional crops cultivated on the islands of the Aegean archipelago is also included. Vineyards as well as a number of other traditional crops of Santorini are included in the list of the crops supported. Almost the totality of the active farmers in Santorini receives this support (Vlahos and Louloudis, 2011).

More targeted is an agri-environmental measure aiming at the maintenance of the traditional agricultural landscape of Santorini, according to which farmers are compensated in order to continue pruning and propagating the vines using the traditional and costly techniques as well as to leave uncultivated parts in each parcel. More than half of the island's area and farmers participate in this measure. Both measures seem to have been a clear success, in terms of acceptance. Nevertheless, the environmental impacts of the measures are not equally clear, especially when the pressures to change land use have their origins in driving forces external to agriculture, as is the case of urban expansion (Vlahos and Louloudis, 2011). Both policies did not seem to be very effective, especially in the areas where urban pressures are intense. These areas, due to the spatial expansion of tourism through the creation of urban continua and the dispersion of housing, could be considered as having attributes similar to these of the urban fringe, where the effectiveness of rural development and/or agricultural policies is highly questioned (see also OECD, 2009).

5. Alliances, conflicts, synergies and the need for mediation

As was expected, changes were not adopted without resistance, innovation not being a neutral notion. The changes that took place affected all the links of the wine value chain, starting from the primary

¹ Quality criteria linked to provenance have been applied for European wines long before the 1991 launching of the first food quality regulations for Protected Denomination of Origin (PDO), Protected Geographical indication (PGI) and Traditional Speciality Guaranteed (TSG).

production process, causing rearrangements and new types of co-ordination among actors and stakeholders.

In order to comply with the new cultivation methods required for the production of 'international wines' (since the mid-1990s), two changes occurred. Firstly, the need for land parcels to be planted with only one variety, in order to better programme harvesting vs. the traditional way of mixing different grape varieties which made it impossible to co-ordinate harvesting even within one holding. This, however, meant that farmers should restructure their vineyards investing resources and time, i.e. incurring an entry cost, in order to participate in the quality production project.

Secondly, early harvesting (middle to the end of August) is essential for securing quality. But this creates a serious conflict in the intra-household division of labour, since the demand for labour in the vineyards coincided with the peak of the touristic season. Traditionally, late harvesting (early-mid September, meant that the members of the household occupied in tourism could also contribute to the task (Vlahos and Louloudis, 2011). The conflictual relationship of the two regimes, i.e. tourism and agriculture, seemed thus to be further aggravated. The possibility to establish a synergistic effect by using the contested resource, i.e. labour, in different time periods, was precluded with the change of the agricultural calendar imposed by the strive for quality.

The high number of grape producers and the relatively limited number of winemakers implies a power asymmetry. Farmers, being in relatively weaker position, had to bear all the burdens of the two changes in order to maintain the access to market of their produce. This caused the partial alienation of the farmers from the "miracle of Santorini vineyard". Increased prices were not assured, if only by the intervention of the co-operative, functioning as the last resort buyer for the grapes. That could not but be reflected on the farmers' sense of ownership for the GI system.

However, the main conflict among the two regimes has been that over land use. As mentioned above, tourism has been a fierce competitor for land use (Vlahos and Louloudis, 2011). The changes of the landscape in the island have been dramatic. The detrimental impacts have not been limited to the agricultural landscape. Urban continua have been formed, in serious detriment of the volcanic as well as the vulnerable small-scale urban landscape. The deceleration in the construction of hotels and recreation facilities has been followed by a second wave of pressures that of summer holiday luxury homes. Real estate investors took advantage of the deficient land planning national regulatory framework and shifted their efforts towards such a market.

Additionally, agricultural land is actually unprotected. Efforts undertaken by the Ministry of Rural Development and Food to protect either the highly productive land or areas characterized as High Nature Value and territories that form important agricultural landscapes have remained in the stage of statements of principles and noble intentions (MRDF, 2011).

Moreover, the effects of the financial crisis have been devastating in terms of policy measures intended to protect the environment through regulation (WWF, 2012). There is only one regulatory tool, that of local land planning, that can be used in order to restrict the expansion of housing. Indeed, there have been two regulatory interventions concerning the agricultural landscape in Santorini, but they are restricted to the most attractive (in real estate terms) areas, hence rather limited. There is, however, a proposal for a complete and structured regulation of land use, through a land use plan for the whole island. Its approval is pending since 1995, although all stakeholders in the area seem to display their eagerness for its approval.

The adoption of changes on the part of winemakers on the island related to technological innovations, especially in the processing part of the value chain. Their primary objective has been access to the market, especially in the increasingly interesting and augmenting quality wine market. When access to the market was achieved, they strived towards maintaining their competitive edge through quality. In this attempt, the changing circumstances of international markets have not been a stabilization factor. Two

competing approaches take place; one that is pursuing the homogenization of taste and advocates the prevalence of grape variety as a quality attribute against the other that supports the value of diversity of tastes and the importance of terroir, i.e. a unique combination of environmental, agronomic and human factors, particular for each wine-producing area.

The adoption of the first approach, calls for the 'correction' of certain characteristics of the wines that are not 'desirable' by the actors that are important in the construction of the 'ideal' wine (Nositer, 2010). Extending the idea of full adaptation to the needs of a globalized market, some of the winemakers decided to change the pruning and propagation system in their owned land and asked from their providers to do so, if they were to buy from them. Thus, the innovations voluntarily adopted by winemakers, called for obligatory changes on the primary production side, since they were deemed as necessary in order to comply with this "ideal" of quality. A new problem was thus created, since the changes in the pruning practices and propagation methods, affected a landscape so much valued, not only by experts or environmentalists but also by tourists, having become an essential part of the "Santorini" experience, hence an asset for the island and the tourism regime.

Despite some co-ordination efforts among winemakers, the lack of co-ordination between vine-growers and winemakers seems to have resulted to a further debilitation of their position in the land use regulation policy arena. However, when forces have been joint, positive outcomes have emerged in the policy field. An indicative example for the potential benefits of co-ordination is the response to a policy measure, most probably detrimental for the island if implemented. As a part of the 2007 reform of the Common Market Organisation for wine the grubbing up of vines was promoted but the breadth of its implementation was left at the discretion of the Member State. A co-ordinated effort of the Co-op, individual winemakers and the local authorities, annulled the application of this specific policy provision in Santorini, alleging that vineyards are a scarce economic and environmental resource that has to be protected. However, this effort was rather on an ad-hoc basis, pointing to the need for more permanent forms of co-operation such as an innovation platform (Heemsesrk et al., 2011).

In this respect, the question raised is 'what the role of an intermediary could be'. In a situation where innovation is accepted and implemented but creates conflicts while, on the other hand, the stakes are significant, the importance a mediator seems to be apparent.

In the case of wine quality, the existence of a quality convention (PDO wine), initiated by the EU but embedded in the local society, implicates local actors towards an active protection of a collective good i.e. fame. Unfortunately, no such convention for the landscape was perceived and much less adopted by local stakeholders. On the other hand, it can be argued that the active participation in and support of quality schemes, established by public institutions, increases the degree of adherence of local actors to the maintenance of quality regulation within the public sphere and does not subjugate it to a self-regulated market system in the form of either private certification schemes or informal institutions, such as the specialized press, that are of capital importance in the international arena (NYT, 2015).

An analysis of the conflicts that emerged reveals a polarization in the power game. The first pole comprises of the new innovative 'international' wineries having as their main objective competitiveness and growth, being adjustable to the changing demands of a very volatile market; perceiving the denomination of origin as merely another element of their marketing strategy they, consequently, force their providers, the farmers, to adapt. They are both fierce protectors of agricultural land use and supporters of changes deemed necessary in order to comply with standards, even if such changes have a detrimental effect on the landscape and the environment in general.

On the other side lie the co-operative and its allies, the majority of the farmers, whose main preoccupation is the stability of the households. In this respect, pluriactivity is an important element of their survival strategy while the fame of Santorini wine is considered as a collective, valuable good. Hence, tourism for them is not just an outlet for their wine production but an asset for earning additional income, either through employment in or the establishment of a tourism related business; therefore, the

protection of the landscape is essential. But on the other hand, they are not willing to forego the option to exploit their most valuable asset, the land, just because they have not seized the opportunity during the touristic boom.

The two poles have sought allies at national level both in the sector and in public administration cadres. The individual wine makers have formed a professional network (Santorini Wine Producers Association), while participating in the national network of private wineries, i.e. the Greek Wine Association. On the other hand, the local Co-op participates in the third-tier wine cooperative organization (KEOSOE).

In that local 'power landscape' the role of institutions has been to a certain degree that of allies to be secured. The aforementioned polarization has influenced local and regional elections as well as policy implementation.

6. Conclusions

The aim of this paper has been to analyze the emergence of a quality niche in the Greek wine sector with reference to Santorini island. The analysis reveals that the triggering point for the initiation of the niche has been the activation of two central actors of the wine sector (one external and one local) which, in turn, attracted numerous new winemakers and set in motion some networking (marketing) activities.

Deliberate efforts of both the Greek state and the EU have also played a crucial role through the establishment of a regulatory policy framework for the promotion of quality in the wine sector. Additionally, after the mid-1980's investment aids provided through EU Regulations, have had a decisive contribution in the establishment of new, modern wineries in Santorini as well as the modernization of existing wineries.

Additionally, changes in the relevant international arenas (i.e. tourism and wine) had direct and almost immediate effects on the local economy and society. Therefore, landscape trends and pressures, along with processes internal to the niche, the links between the niche and the regime, as well as multi-regime interactions created a fertile substrate for the germination of innovations.

Furthermore, it can be argued that the existence of a quality convention (PDO wine), initiated by the EU but embedded in the local society, indicates an increased degree of social consensus and involves local actors in the active protection of a collective good, i.e. fame. Unfortunately, no such convention for the landscape was perceived and much less adopted by local stakeholders.

The analysis of the conflicts that emerged revealed a polarization in the power game, with two poles having different priorities and perceptions about 'quality'. The first pole comprises the new innovative 'international' wineries aiming at extroversion and competitiveness, thus at continuous innovation as relates to growth. This pole supports the protection of the agricultural land but not of the traditional landscape of the island. The second pole comprising the co-operative and the majority of the farmers aims at stability (household reproduction). This pole supports the protection of the traditional production methods and the landscape since these are crucial aspects for both tourism and their wines. In this sense, it can be argued that the second pole, given its own contradiction and trade-offs, seems more supportive to sustainability.

Finally, the case examined provides significant evidence of the potential benefits of co-ordination among local stakeholders, which, however has been rather on an ad-hoc basis, thus pointing to the need for more permanent forms of co-operation such as an innovation platform. In a situation where innovation is accepted and implemented but creates conflicts and, on the other hand, the stakes are significant, the

importance of an institution acting as a mediator seems apparent. Additionally, in the case of Santorini co-ordinating efforts and network activities have taken place in the absence of 'professional' mediators such as brokers or facilitators. This corroborates the claim that the informal everyday communicative interactions among stakeholders are as important as the communicative efforts of professionals (Leeuwis and Aarts, 2011). In any case, network building and dealing with the dynamics of power and conflict are two of the processes that can be substantially supported by communication/ intermediation professionals.

References

- Anderson, K. (2009) *Terroir Rising? Varietal and Quality Distinctiveness of Australia's Wine*. (Regions Research Paper No. 2009-18). Adelaide, School of Economics, The University of Adelaide.
- Barbera, F. & Audifredi, S. (2012) In Pursuit of Quality. The Institutional Change of Wine Production Market in Piedmont, *Sociologia Ruralis* 52(3): 311-331.
- Boltanski, L. & Thévenot, L. (2006). *On justification. Economies of worth*. Princeton, NJ, Princeton University Press.
- Boutaris Winery (2016, March 29). Wineries. Retrieved from http://www.boutari.gr/en/wineries-states/wineries/11boutari_2011072611.wines.php
- EC (2012). *Value of production of agricultural products and foodstuffs, wines, aromatised wines and spirits protected by a geographical indication (GI)*. Brussels, EC.
- Geels, F. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms, *Environmental Innovation and Societal Transitions* 1: 24–40.
- Geels, F. & Schot, J. (2007). Typology of sociotechnical transition pathways, *Research Policy* 36: 399-417.
- Hartman, S. (2016). Towards adaptive tourism areas? A complexity perspective to examine the conditions for adaptive capacity, *Journal of Sustainable Tourism* 24(2): 299-314.
- Hinrichs, C. (2014). Transitions to sustainability: a change in thinking about food systems change? *Agriculture and Human Values* 31: 143–155.
- Ingram, J. (2015). Framing niche-regime linkage as adaptation: An analysis of learning and innovation networks for sustainable agriculture across Europe, *Journal of Rural Studies* 40 (2015): 59-75.
- Josling, T. (2006). The War on Terroir: Geographical Indications as a Transatlantic Trade Conflict, *Journal of Agricultural Economics* 57(3): 337–363.
- Kemp, R., Schot, J. & Hoogma, R. (1998). Regime shifts to sustainability through processes of niche formation: the approach of strategic niche management, *Technology Analysis and Strategic Management* 10(2): 175-195.
- Kilelu, K., Klerkx, L., Leeuwis, C. & Hall, A. (2011). *Beyond knowledge brokerage: An exploratory study of innovation intermediaries in an evolving smallholder agricultural system in Kenya*. RIU Discussion Paper 13. London: DFID.
- Konefal, J. (2015). Governing Sustainability Transitions: Multi-Stakeholder Initiatives and Regime Change in United States Agriculture, *Sustainability* 7: 612-633.
- Kourakou-Dragona, S. (1995). *The santorini of Santorini*. Athens, Fany Boutari Foundation.
- Leeuwis, C. & Aarts, N. (2011). Rethinking Communication in Innovation Processes: Creating Space for Change in Complex Systems, *The Journal of Agricultural Education and Extension* 17(1): 21-36.
- Lugeri, F.R., Amadio, V., Bagnaia, R., Cardillo, A. & Lugeri, N. (2011) Landscapes and Wine Production Areas: A Geomorphological Heritage, *Geoheritage* 3: 221–232

- MRDF [Ministry of Rural Development and Food] (2016, March 30): Statistical Data for the wine sector, Retrieved from <http://www.minagric.gr/images/stories/docs/agrotis/Ampeli>
- Negro, G., Hannan, M.T., Rao, H. & Leung, M.D. (2007). *No barrique, no berlusconi: collective identity, contention, and authenticity in the making of barolo and barbaresco wines*. Research Paper. Stanford, Stanford Business School.
- Nossiter J. (2010). *Liquid Memory: Why Wine Matters*. Paris, Farrar, Straus and Giroux.
- OECD (2009). *Farmland conversion. The spatial dimension of agricultural and land use policies*. Paris, OECD.
- Patchell, J. (2011). *The Territorial Organization of Variety: Cooperation and competition in Bordeaux, Napa and Chianti Classico*. Farnham, Ashgate.
- Rousou, A. (2006). *Conventional and organic farming on Santorini's vineyard* (Graduation Thesis). Heraklion, Dept. of Crop Science, Technological Educational Institute of Crete.
- Santo Wines (2016, March 29). *History of Santo wines*, Retrieved from <http://www.santowines.gr/en/winery/winery.html>
- Schot J. & Geels, F. (2008). Strategic niche management and sustainable innovation journeys: theory, findings, research agenda, and policy, *Technology Analysis & Strategic Management* 20(5): 537-554.
- Smits, R. & Kuhlmann, S. (2004). The Rise of Systemic Instruments in Innovation Policy. *International Journal of Foresight and Innovation Policy* 1: 4-32.
- Vlahos, G. & Louloudis, L. (2011). Landscape and agriculture under the reformed Common Agricultural Policy in Greece: Constructing a typology of interventions. *Geografisk Tidsskrift, Danish Journal of Geography* 111(2):131-147.
- WWF (2012). Open letter to heads of States and Government in Europe, the President of the European Council and the President of the European Commission. Athens, WWF GR.