Project title:

«Developing Identity ON Yield, SOil and Site

– DIONYSOS»

INTERREG V-A COOPERATION PROGRAMME: GREECE –BULGARIA 2014-2020"

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Working Package

3.1.3 Exploring competitiveness of selected varieties

Competitiveness is a relative concept, as it is evaluated by benchmarking against comparable entities, and it is multi-dimensional, as it considers several aspects of a firm/sector performance (Wijnands &Verhoog 2016).

In the current working package, the evaluation of the competitiveness of the Greek wine industry follows the approach of COGEA (2014, p. 12) "Competitiveness is defined as the ability of a system to sustainably produce and sell goods and services on a given market, in such a way that buyers prefer these goods to those offered by competitors. The goal of competitiveness in a specific market is the consolidation or increase of market share while maintaining an adequate return". According to this approach, a system is in a condition of competitiveness when it demonstrates an adequate competitive performance with respect to the relevant competitors and profitability, which makes the business sustainable.

Greece has one of the longest wine histories in the world and wine has always been an integral part of Greek culture. Evidence of the long history of wine in Greece is apparent even today in vineyards with an unbroken track record of several millennia, while Greek terroirs play a key role in the shaping of a wide range of unique wines. And with over 300 indigenous varieties, Greek wines offer far more than pleasing aromas and flavors. When wine is one of Greek agriculture's most traditional products and one of the most characterizing constituents of the Mediterranean diet. Throughout time, wine has been a cheap source of energy, an essential beverage when water was unsafe to drink, and a symbolic element of social celebrations. The Greek wine sector encountered the globalization wave, which began after World War II but has accelerated since 1990, with an unprecedented expansion of international wine trade, "which it then did so spectacularly, albeit unevenly, and which led to the democratization of wine consumption in many more countries" (Anderson and Pinilla 2018). This expansion was fueled by increasing demand for wine in countries with no—or very little—wine production, also stimulated by intriguing wine guides. This represented a window of opportunity that New World (NW) wine producers were more ready to exploit, implementing a catch-up process that allowed them spectacularly to increase their hold over the international wine market (Giuliani et al. 2011; Mariani et al. 2012). In recent years, new wine-producing countries, such as Argentina, Chile, Australia, the United States, and South Africa, have entered the world's wine market. These countries have several competitive strengths, such aslow labor costs; grape varieties, such as Chardonnay, Cabernet Sauvignon, Merlot, and so on; technological improvements, such as controlled fermentation instead of natural fermentation; and ideal climate conditions (Carreyrou, 2003;Johnson, 2001).

As a result, the $100 billion global wine industry is becoming more competitive, and traditional wine-producing countries are facing challenges from the New World wine countries (Carreyrou, 2003). For example, the global share of French wine exports decreased to 23% in 2002, compared to 32% a decade prior. Although wine consumption in Britain has increased sharply (Johnson, 2001), the Famous Bordeaux wine lost 15% of its market share in the United Kingdom. However, the global wine export share from New World countries, such as the United States and Australia, has increased. For example, wine exports from Australia increased 20% in 2002 compared to 6% a decade prior (Carreyrou, 2003; Orth &Krska, 2002).

At the same time, world wine production exceeds world wine consumption (Dodd, 1997). It is estimated that global wine production surpasses consumption by about 20% (Oldroyd, 2001).

It appears that the world wine industry should explore opportunities for expansion into new wine markets, (Greek could be one option, even though a small market). According to Spawton (1991a), the wine industry has focused more on sales than on marketing; however, wine industry managers should emphasize marketing because of the global changes in consumers’ behavior and the competitive environment (Sharp, 1991; Spawton, 1990). However, most wine-marketing research is limited to the European market because of the market’s importance for both wine production and consumption. For instance, the European wine countries produced almost 74% of the world’s wine, and the market accounted for approximately 72% of the world’s wine consumption in 1998 (Spahni, 2000).

Considerable marketing research has focused on Europe and North America. For instance, studies include British wine consumers (Mitchell &Greatorex,1989); the Spanish wine market and consumers (Angulo et al., 2000); port wine–marketing strategies (Lages & Shaw, 1998); Greek wine consumers (Kalogianni, Klavdianou, Alexaki, & Tsakiridou, 1999); the Hungarian wine market (Williams & Pearson, 1992); European consumers’ wine consumption patterns (Smith & Solgaard, 2000); Irish consumers’ wine preferences (Keown & Casey, 1995); cross-cultural European wine consumers’ motivations (Hall, Shaw, & Doole, 1997); information sources of American wine drinkers (Dodd, Pinkleton, & Gustafson, 1996); and consumers’ characteristics of wine clubs in Canada (Schell, Amero, Cameron, & Scott, 1985).

Because the global wine industry has become more and more competitive (Stephens, 2003), wine marketers might begin to explore emerging wine markets, such as the Greek one. Very little wine-marketing research has been conducted in Greece, where there is a large potential for increased wine purchasing. **And this could be detrimental for the local wineries as the competition will be very high. Prices are lower than Greek wines so the only possibility for Greek wineries to overcome is to use Greek verities and to produce from these varieties high quality wines.**

Evolution of the Greek Wine Sector

Viniculture in Greece seems to be as old as Greek history. Especially in Macedonia viniculture and wine production has flourished and still flourishes in accordance with cultural heritage (local wine traditions, local celebrations and feasts, local gastronomy, handicraft, etc.)(Hristov, 2015).

The great transformation of the Greek wine sector took place in the post-World War II period. Thanks to market and production trends and to strong national and European policies, the sector changed radically: from unspecialized to specialized winegrowing; from a fragmented to an integrated agro-industrial supply chain based on efficient farm wineries; from a production almost totally destined for the domestic market to largely export-oriented production; from an almost undifferentiated low value production to a production characterized by quality at different levels; from a large, but low level, domestic consumption to much lower but more special consumption.

Although the Greek vineyard produces wines from many international varieties, the percentage planted with grapes such as Chardonnay, Syrah or Cabernet Sauvignon, to name but a few, remains low compared to the area planted with Greek indigenous wine varieties. According to a 2017/2018 census, the foreign varieties are planted at 69,055 hectares accounting for 11% of the total surface area of Greek vineyards. Consequently, the areas planted with Greek varieties amount to 558,990 acres (89%).

The most popular variety is Savatiano with 101,344 hectares, amounting to 16.14% and mainly planted in Attica (52,888 hectares) and Central Greece (41,562 hectares).

The second popular variety is Roditis with 80,730 hectares (12.85%), mainly planted in Western Greece (44,075 hectares), Peloponnese (12,418 hectares) and Central Greece (10,492 hectares). Third most popular variety (and the first red) is Agiorgitiko with 31,741 hectares (5.05%), with 30,226 hectares planted in Peloponnese, 515 hectares Central Greece, 353 hectares in Attica, 263 hectares in Eastern Macedonia-Thrace, 220 hectares in Central Greece and 164 hectares in Central Macedonia **(Figure 1).**

Regarding the Greek varieties, in 4th place is Liatiko with 26,041 hectares and 4.15% of the total planted surface area, which is cultivated in its entirety in the island of Crete. Among the top 5 varieties is Assyrtiko with 19,845 hectares, amounting to 3.16%, with 12,642 hectares planted in the Region of South Aegean and the rest in almost all the rest of the country (mainly in Eastern and Central Macedonia) other than the Ionian Islands.It is also worth noting that another 474,194 hectares of land are planted with various small-scale Greek –mainly– varieties **(Figure 1)**.

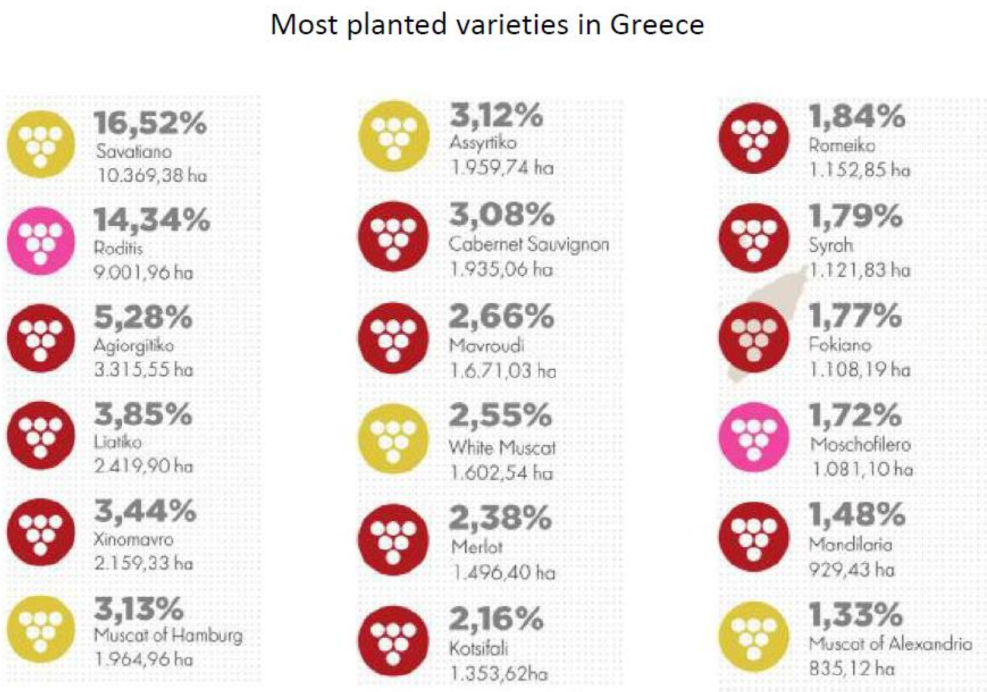

Figure 1: Most Planted grapevine varieties in Greece

Exploring competitiveness of selected varieties in Eastern Macedonia and Thrace

Taking into account that little research has been conducted in the wine sector in north eastern Greece generally, results found during the current project (DIONYSOS) will help to establish an effective promotion policy of ''typical wines'', which could lead to a better knowledge and help consumers to gain more knowledge on these varieties and their specific products. Besides the results found during the winemaking of the various varieties such as Rozaki, Pamidi, Mavroudi, Ligaridia, Voulgaroudi, Papadies, Bougialamas, Bogiatides, Karnachalas, White Mpatiki, (results shown in 3.5.2. c deliverable) some commercial wines coming from local or international red wines were analysed, such as Merlot, Cabernet Sauvignon Syrah and Chardonnay wines.

All the wines were analysed in Oenolysis laboratories. Wine evaluation was achieved by using a trained panel consisted of sommeliers and enologists in order to evaluate the competiveness of the rare varieties towards the known/international varieties. According to Table 1, Pamidi (as a rose wine), Rozaki and Karnachalas scored results similar to the wines produced by international varieties. These rare varieties achieved alcohol levels inside the commercial levels desired by the consumers, 12,7, 11,8 and 12,4 respectively % v/v of alcohol. The same could be said for the acidities and the pH values. The only value that was somewhat strange was the acidity of Rozaki which was found to be very low. In any case this could be adjusted during winemaking by addition of tartatic acid which is a common practice in all the Mediterranean countries producing wines, as it is permitted by European legislation (Table 1)

Table 1: Results of physio-chemical parameters of commercial wines.

Code of Sample	P (20°C)	Residual Sugars (g/L Gluc-Fruc)	Total Alc (20°C)	Acetic acid (g/L)	Malic Acid (g/L)	Lactic acid (g/L)	Tot.Acid. (tartaric acid g/L)	pH	Free SO2 (ppm)	Total SO2 (ppm)	Ind.Phenolic subst.	420 nm 520 nm 620 nm	Intensity/ Shade
Pamidi rose (Rodopi)	0,9927	4,53	12,7	0,31	1,3	0	5,62	3,41	13,4	120,9	15,8	0,006 0,002 -0,008	0,00 / 3,000
Syrah rose Kavala	0,9917	3,2	13,1	0,38	1,6	0	5,81	3,36	15,7	110,7	11,1	0,008 0,003 -0,003	0,02 / 2,1
Rozaki white (Kavala)	0,9898	0,44	11,8	0,26	1,00	0	3,56	3,83	39,0	131,8	10	0,08	0,008
Chardonnay white Kavala	0,9889	0,89	13,7	0,44	1	0	4.6	3,7	20	110	21	0,11	0,11
Mabry 1 Bulgaria red - Merlot	0,9935	0,34	12,7	0,42	0,03	0,78	5,06	3,5	11,3	106,4	63,4	0,315 0,319 0,062	6,90 / 0,987
Bizantinos Karnachalas red (Soufli)	0,9915	0,0	12,4	0,51	0,0	0,40	4,61	3,57	1,0	141,4	39,2	0,179 0,208 0,052	4,39 / 0,860
Merlot Soufli	0,991	0,24	13,4	0,55	0	0,8	5,02	3,65	5	101	56	0,46 0,553 0,095	10/0,83
Cabernet Sauvignon Kavala	0,992	0,35	14	0,58	0	1	5,4	3,67	19	89	62	0,36 0,593 0,108	10,8/0,6

Concerning the wine evaluation results, when comparing Pamidi Rose versus Syrah rose, a variety extensively used for producing high quality rose wines, the panelists found of course differences on flavour characteristics. The Syrah was evaluated as more intense aromatically, more astrigent while the Pamidi more intense on exotic and citrus fruits. However the overall quality of the wines was found to be similar between the varieties of the rose wines **(Figure 2)**.

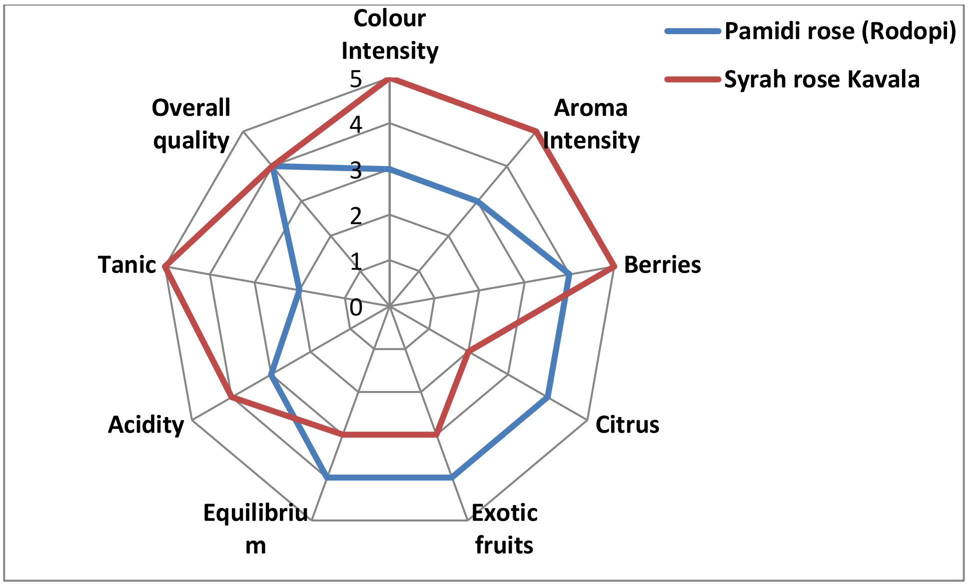

Figure2: Sensory profile (Spider Diagram) of "Pamidi rose" and "Syrah rose Kavala" wines, outlined by a group of professional tasters from the Laboratory of Enology and Alcoholic Beverages of the Agricultural University of Athens. The centers of the diagrams represent the lower values with the tension of each attribute increasing to an intensity of the digit 5 at the perimeter

What concerns the comparison between Rozaki and Chardonnay white wines some differences were also recorded. As found on Table 1 the acidity of Rozaki wine was less than that of Chardonnay wine and generally low for a white wine. Aromatically it was found that Chardonnay was somewhat better than the Rozaki wine and finally the same was found for the overall quality **(Figure 3).** However this was expected as chardonnay is the most planted white variety in the world and this is due to the very high quality white wines produced by this variety.

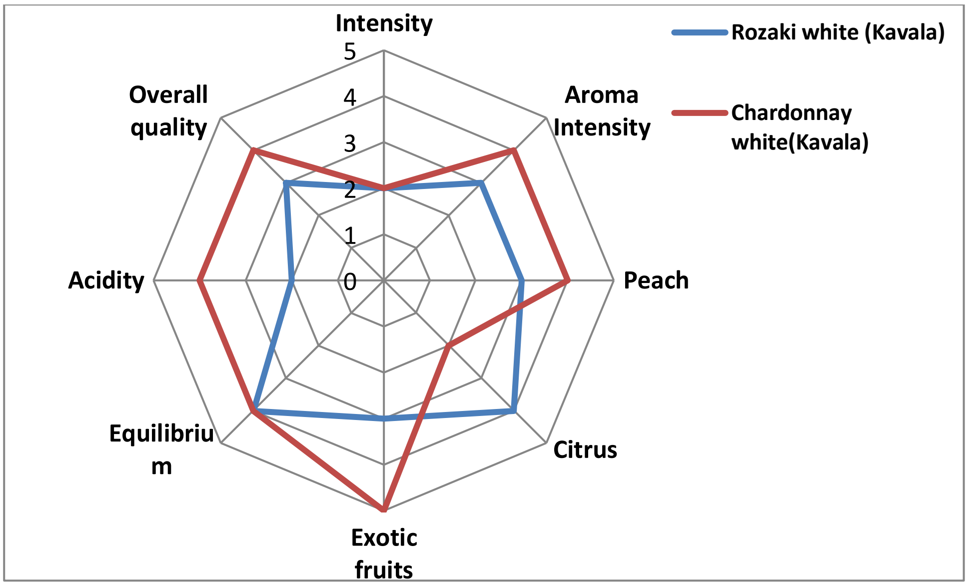

Figure 3: Sensory profile (Spider Diagram) of "Rozaki white" and "Chardonnay white (Kavala)" wines, outlined by a group of professional tasters from the Laboratory of Enology and Alcoholic Beverages of the Agricultural University of Athens. The centers of the diagrams represent the lower values with the tension of each attribute increasing to an intensity of the digit 5 at the perimeter

Finally, the Karnachalas wine were compared to a Bulgarian Merlot wine and two Greek, one Merlot and one Cabernet Sauvignon wines. The panelists found that Karnachalas wine was the most aromatic, characterized mainly by flowers and berries aromas while it was found to be the lowest as for colour intensity and was judged as the wine with the higher hue which is not very positive for a red wine. Besides it was scored as very low on astringency. Based on these findings it seems that Karnachalas variety could give wines with low phenolic content thus it could be a good variety for producing light red or rose wines(**Figure 4**).

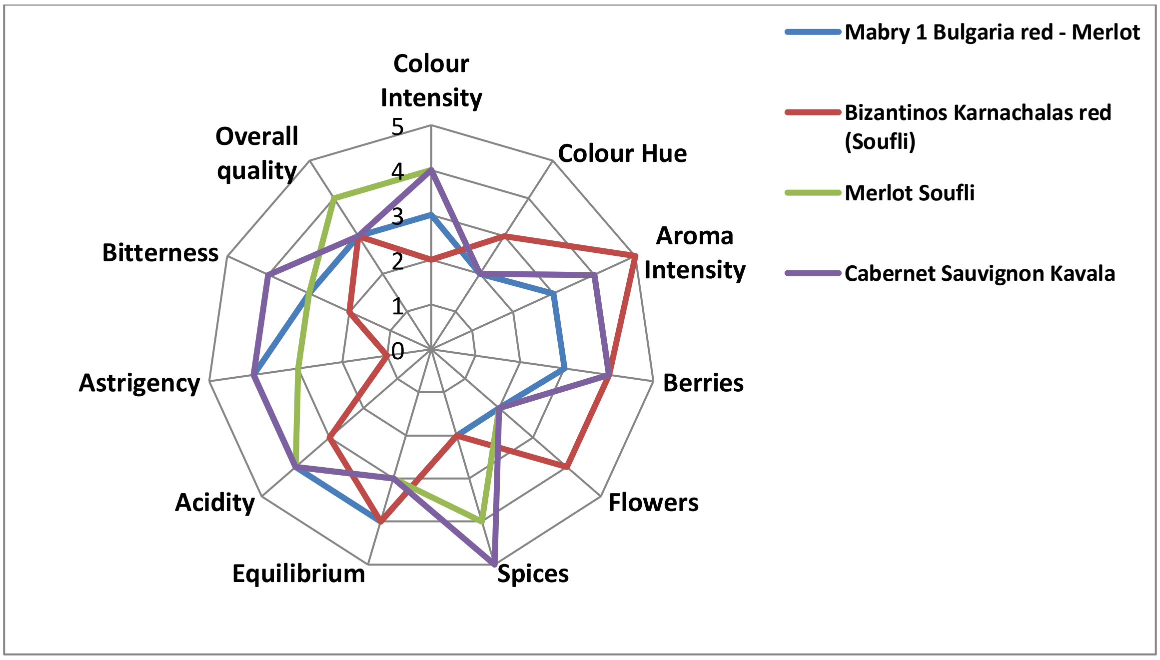

Figure 4: Sensory profile (Spider Diagram) of "Mary 1 Bulgaria red white", "BizantinosKarnachalas red (Soufli)", "Merlot Soufli" and "Cabernet Sauvignon Kavala" wines, outlined by a group of professional tasters from the Laboratory of Enology and Alcoholic Beverages of the Agricultural University of Athens. The centers of the diagrams represent the lower values with the tension of each attribute increasing to an intensity of the digit 5 at the perimeter

Discussion and Conclusion

The Greek wine sector is enjoying fair profitability, comparable to the overall manufacturing sector, greater, on average, among large companies than smaller ones with agricultural features. In fact, almost all large companies, despite different individual performances, are experiencing positive results. Conversely, the performance of small agricultural farms appears to be more varied. Their profitability is influenced by their geographical location and production specialization and, for the majority, by the balances of the intermediate markets which change, year by year, according to harvest size. However, as already stated, grape and wine production is constantly one of the most profitable agricultural activities due to the substantial balance between supply and demand in the intermediate markets.

Over the last decades, the Greek wine industry has changed dramatically, from a dispersed production system of mainly low-value wines for self-consumption and the local market, to a modern industry able to satisfy increasingly demanding domestic supply and very competitive international markets with a wide range of wines. The sector reacted to stimuli coming from the changing domestic and international demand and in this context; different types of firms were able to thrive. The Greek wine sector, with its roots in a vast population of farms, is today characterized by a complete array of firms (private wineries, cooperatives, industrial wineries). Greek wine companies are different sized and have different orientations in terms of product characteristics, more oriented towards PDO and PGI wines, so that they are able to connect their supply with several different markets and distribution networks.

On the market side, the sector, in a context of increasing competition in the international market exacerbated by the consequences of the COVID pandemic, must first consolidate the positive evolution of domestic demand. It must defend the social legitimacy of moderate consumption against anti-alcohol pressures and, through improved synergies with the distribution entities, it may be able to deliver greater value to domestic consumers, particularly in HoReCa, where the consumption habits of young generations are developed through shared experiences (Mariani and Pomarici 2010). Moreover, Greek wine must defend its competitive advantage in traditional import markets and increase that advantage in new markets, particularly in

China. It must take advantage of the changes in distribution networks and channels and implement up to date promotion strategies as well as improved institutional support. In fact, “the wine story is not necessarily one of aborted catch up” (Morrison and Rabellotti 2017, p. 13): newcomers are reshaping their strategies; their competitive pressure may increase and China may become a major player, at least in import substitution, although the physical and environmental constraints on cultivation do not indicate a dramatic increase in supply (Anderson and Pinilla 2018).

The Greek wine market has huge potential for growth and development. Identifying consumer preferences and characteristics is critical to expanding and developing that market. Recently, several wine bars were established all over Greece so that wine consumers could share wine information and try new wines and styles. Wine marketers should build a good relationship with the wine bars members because the members, as opinion leaders, may play an important role in spreading wine information to their friends or relatives.

In addition, professional staff can be helpful in providing information and advice about wine. Marketers can invite sales personnel from key wine stores, and food and beverage managers from major hotels and restaurants in Greece, to their wineries and provide tours and tastings. In this way, the personnel can become familiar with wine products and eventually provide better wine information or suggestions to customers. Also, the knowledge gained helps wine consumers reduce any uncertainty or risk regarding their wine purchases (Keown & Casey, 1995). Roberto (2002) reported that Robert Mondavi has provided a series of training seminars and educational events to fine restaurants and hotels. The purpose of these events has been to help restaurant and hotel operators better understand Robert Mondavi wines as well as successful wine service. Other wine distributors and marketers should learn from Robert Mondavi and provide seminars and trainings for hotel and restaurant employees.

The traditional wine market has been saturated, and the global wine industry has become very competitive. Thus, wine marketers need to find new markets. The Greek wine market has great potential. The worldwide wine industry has a real opportunity in the Korean wine market if it understands the characteristics and preferences of the Greek wines, and if it customizes products, service offerings, and marketing. Worldwide wine-marketing managers need to realize that they can achieve long-term success in foreign markets if they understand the consumer preferences and characteristics of each market.

As found during Dionysos project some pf the rare varieties of Eastern Macedonia and Thrace could have a successful commercial career as their wine could be competitive towards the wines of international varieties. Of course the wine style would be different however consumers all over the world are looking for diversified wines. Especially Pamidi rose wines are of a high quality, while Rozaki and Karnachalas wines could be improved by technological adjustments and in this way to produce high quality wines.

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