



## **A cross-cultural comparison of sustainability in the wine industry**

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### *Abstract*

*Purpose – Nowadays, a great importance is attached to the topic ‘sustainability’ in the wine industry, too. However, it is difficult to define the exact meaning of sustainability in the wine industry, not to mention the cultural discrepancies in different wine growing countries.*

*Design – Therefore, a qualitative study with an open-ended questionnaire was undertaken to compare opinions of producers in seven different countries concerning the definition, the evaluating and their practice of sustainability. The study answers the following research questions: 1) How is sustainability defined in the certain countries? 2) Are there any differences and similarities between sustainable and organic/biodynamic wine? 3) How do consumers react to sustainability from the producer’s point of view?*

*Findings - By analysing fifty five interviews, this study shows that there is no common definition for sustainability in the wine industry and that organic/biodynamic is very often mixed up with sustainable farming. In addition, interviewees think that consumers may be positively thinking concerning sustainability, but they are still confused.*

*Practical implication – These results give valuable information for organisations and certification institutes about the understanding and the use of sustainable practices and help them to define principles of sustainability in the wine industry.*

**Key words:** sustainability, wine industry, cross-cultural difference

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## 1. INTRODUCTION

Nowadays sustainability has become an important term not only from an environmental but also from a political, an economical and a social point of view aspect. Yet it is not easy to define what sustainability exactly means, since a wide range of definitions of this term are given in the literature. The roots of sustainable practices go back to the study of Meadows et al. (1972) with their book 'The Limits to Growth'. The first official definition was given by the United Nations (1987) and was formulated as follows: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Since then, several conferences on Sustainability (1992 United Nations conference in Rio de Janeiro; 1997 Climate Summit in Kyoto, 2002 World Summit in Johannesburg) were organized and environmental management systems dealing with sustainable production like EMAS or ISO were established.

The often cited three-dimensional concept of sustainability (United Nations, 2005) defines the three main fields of sustainability as environmental, economic and social. Although the three-dimensional concept is widely accepted and used, the meaning and fields of application of sustainability are very differentiated. Thus, sustainability terms, their definition and interconnections are crucial for a better understanding and communication (Glavic and Lukman, 2006). The first sustainable winegrowing program was developed by the Lodi Winegrape Commission in California in 1992 (Ross and Golino, 2008). Since then, several other organizations, associations, groups and institutes in different countries have created their own rules or accepted already existing guidelines to practice sustainability. However, these practices vary significantly from region to region. This study therefore hypothesizes that (H<sub>1</sub>) from the producer's point of view there is not a common definition of sustainability.

Another critical point which makes the definition of sustainable winemaking essential is the difference between sustainable and organic wines, which still causes confusion, not only for the consumers, but also in the circles of winemakers and wine companies (Smith, 2010). For that reason this study further hypothesizes that (H<sub>2</sub>) producers associate sustainability with organic or biodynamical farming.

There are already some studies – mainly from California and New Zealand – which deal with different aspects of sustainability in the wine industry. Hughey et al. (2004), as well as Gabzdylova et al. (2009) conducted their studies in New Zealand interviewing wineries about their sustainable practices. The first study compared different environmental management systems like ISO 14001 and SWNZ, while the second study showed the most widely used sustainable practices in New Zealand and found that environmental values, personal preferences, and satisfaction with the profession were the most important drivers of sustainable initiatives. Similar questions in the Baden-Württemberg wine area, in Germany, were analyzed by Sippl (2006). Other studies which concentrated on consumer reactions to sustainable wines confirmed that consumer like the concept of sustainable wines (Forbes et al., 2009) and that they would pay more for a "green" wine than a conventionally produced wine. However, consumers do not have a clear idea of what sustainable means and how it is practiced (Zucca, Smith and Mitry, 2009). This leads to the hypothesis (H<sub>3</sub>) that from the producer's point of view consumers are confused concerning sustainable wine.

This research deals with the following questions: How do wine makers in different countries define sustainability, what do they think are the most important principles of it, what are the pros and cons for practicing sustainability how do consumers react to it, and finally which organizations support wineries concerning sustainability. Qualitative interviews with winemakers were undertaken in seven different countries. To our knowledge, this kind of cross-cultural study of sustainability has not been analyzed yet.

## 2. MATERIAL AND METHODS

### 2.1. Qualitative research

This cross-cultural study conducted in seven different countries was based on a qualitative research method by which owners or wine makers of selected wineries were interviewed face-to-face (or in rare cases per telephone) using a semi-structured catalogue with open-end questions (Hughey et al., 2004; Gabzdylova et al., 2009).

Each interview included all together thirteen questions which could be divided into five main topics: 1) the definition and principles of sustainability from the wineries' point of view; 2) the differences and similarities of sustainable wine making compared to organic or bio-dynamic wine making; 3) pros and cons of applying sustainability; 4) the expected reaction of consumers; 5) the overall organization of sustainable wine production in the specific country. The appendix contains the complete question catalogue.

All interviews were digitally recorded and then literally transcribed for further analyses. Strategies, know-how, experiences and practices but no anecdotal and illustrative information were collected.

### 2.2. Interview partners

The interviews were conducted in different wineries in France, Germany, USA/California, Hungary, Italy, Greece and Spain. The wineries were selected at random according to their location and their size, so that a preferably heterogeneous structure of interview partners could be achieved. We tried to interview wineries already practicing sustainability. Where it was impossible due to a lack of certification, wineries which were interested in sustainable management were asked. Multiple responses from the same winery were not allowed. The reported wineries represent altogether 60,000 ha. Table 1 shows the number, the region and the size of the fifty five interviewed wineries.

**Table 1**

Overview of interviewed wineries in seven countries

Country	Nr. Of wineries	Regions & size of the interviewed wineries (ha)
France	15	Alsace (7, 21); Bordeaux (65, 94); Bourgogne (150); Champagne (7.5, 11, 25); Languedoc-Roussillon (20) ; Loire (6); Cognac (15); Rhone (1000, 1247, 2300); Aquitaine (1942)
Germany	8	Ahr (2.8) ; Franken (30) ; Mosel (11) ; Pfalz (85) ; Rheingau (15) ; Rheinhessen (10 , 60) ; Württemberg (10)
USA/California	7	Napa Valley (28, 46, 73, 148, 486); Sonoma Valley (70, 183)
Hungary	7	Buda (10); Eger (43); Mátraalja (30); Szekszárd (20); Tokaj (20); Villány (28; 125)
Italy	6	Alto Adige (160); Emilia Romagna (12, 39000); Sicilia & Trentino (3150); Trentino (5700); Toscana (6)
Greece	6	Amyndeon & Naoussa (57); Crete –Chania (12); Domokos & Fthiwtida (22); Crete & Goumenissa & Naoussa & Mantinea & Santorini (500); Agio Oros & Chalkidiki & Naoussa & Rapsani & Thraki (700)
Spain	6	Penedès (20, 76); Ribera del Duero (900); Rioja (20, 80); Somontano (1100)
1,300,000 ha	55	44 wine growing areas (60,000 ha)

### **2.3. Content analysis**

The interviews were analyzed by means of a content analysis, the main tool for evaluating qualitative interviews, concentrating only the required information of the transcribed text. It had been defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Krippendorff, 1980). We quantified and analyzed the presence, the meanings and the relationships of words and concepts in the interviews taken and then we made inferences about the messages within the texts (Weber, 1990 and Stemler, 2001).

For coding the open-end questions to test the hypotheses deductive and inductive schemes were used:

H<sub>1</sub> – basis of the coding was classified by the definition of United Nations (2005);

H<sub>2</sub> – basis of the coding was defined inductive and by Smith (2010);

H<sub>3</sub> – the coding is based on Forbes et al. (2009) and Zucca, Smith and Mitry (2009) as well as on inductive information.

### **2.4. Validity and reliability**

Special quality criteria by Krippendorff (2004) were selected to prove the validity and reliability of this study. Interviewed wineries were selected randomly selected in each country. Before selecting and contacting the wineries, the circle of potential companies was defined based on certification of sustainability, size and wine growing area (sample validity). Native speaker interviewers conducted, transcribed, coded and analysed the interviews. Interviewers took part in three common sections where the selection of interview partners, the interviewing procedure, but rather the coding and analysing techniques were trained. Therefore, the coding system and rules were developed together with all interviewers (semantic validity). Each interviewer analysed all interviews from his/her own country which allowed consistent and uniformed investigation (reliability).

## **3. RESULTS AND DISCUSSION**

Although in this study different countries were involved, there are still similarities concerning the answers. This part of the paper summarizes the results of the interviews, however, not separated by country but by topic (see material and methods) trying to give a common answer highlighting at the same time the differences and the similarities between the countries.

### **3.1. Definition and principles**

Even in the literature the term sustainability is defined completely differently from author to author. Therefore, it is not surprising that fifty five interviewees from seven countries gave fifty five different answers to the question “how would you define sustainability”. Regardless of their philosophy, the country and the size of the winery, almost all interviewees agreed that sustainability is a very individual and personal term. The interviews were compared regarding the definition of the term. Table 2 shows how many wineries from each country mentioned in their answers one or more of the three aspects (environmental, economic, social) defined by the United Nations (2005). It is conspicuous that in countries like the USA or France the definition given by the different wineries almost always contains all the three aspects of sustainability. This result traces back to the fact that in these two countries the interviewed wineries are already practicing sustainability.

**Table 2**

Number of wineries that mentioned one or more of the three aspects of sustainability defined by the United Nations (2005)

Country	Number of interviewed wineries	Aspects of sustainability		
		Environmental	Economic	Social
France	15	15	11	9
Germany	8	8	2	4
USA/California	7	7	7	7
Hungary	7	7	2	1
Italy	6	6	3	3
Greece	6	6	3	2
Spain	6	6	4	1

Considering the size of the interviewed companies, the results show that small wineries, especially if they are certified as organic or biodynamic, think first and foremost about the environmental aspect of sustainability, while cooperatives or bigger companies take also economic and social aspects into account. From the farm management point of view, wineries working biodynamically emphasize - for comprehensible reasons - the importance of environment whereas conventional companies are rather talking more about optimising the production chain.

Table 3 contains the most cited words or phrases interviewees used to define sustainability, on an agglomerate level. This table shows that the environmental aspect is the most often mentioned and therefore the most important for the companies. Economic and social components are mentioned, too, but by far not as detailed as the environmental aspect.

**Table 3**

Overview of the most important principles of sustainability given by the interviewees

Aspect	Main principles
<b>Generally</b>	soft farming; complete management; viable development; safety for the future
<b>Environmental</b>	carbon footprint; respect for environment; balance of ecosystem; management of natural resources; agro-ecological development; minimization of use of synthetically produced fertilizers, herbicides, fungicides and pesticides; correct distribution and stewardship of the land; keeping the land in the same or better shape; minimize transport; minimize emission; biodiversity; recycling; water management; soil management; energy management; packaging management; greenwashing
<b>Economic</b>	profitability; improving the production; optimisation of production chain
<b>Social</b>	responsibility; respect for the next generation; fulfil the demands of the consumers; fulfil the needs of the employees

Another interesting point is that interviewees rarely talked about sustainable production in the cellar, but mostly about sustainable viticulture. In the list of principles, “greenwashing<sup>1</sup>” was mentioned as the only negative aspect.

<sup>1</sup>Greenwashing: “The concept of greenwashing refers to the shaping of public perceptions that firms have an environmental consciousness and are actively engaged in activities that improve the environment when, in reality, their income-generating activities remain largely unaltered and environmentally suspect” (Burch et al., 2006).

Wineries that have less to do with sustainability associate this term only with carbon footprint, which is, without doubt, the most mentioned term in the whole study. Even bigger companies with experience in sustainability put this term in the first place.

For many of the interviewed wineries, mostly the smaller ones, sustainability is a lifestyle and a personal philosophy on its own.

The first hypothesis (H<sub>1</sub>) can be therefore confirmed, whereas there is no a common definition neither on an international nor at on a national level.

### **3.2. Sustainable vs. organic and biodynamic**

It would not be surprising if somebody supposed that consumers do not know the exact difference between sustainable and organic/biodynamic wine making. However, even wine makers do not distinguish sometimes between these two kinds of management systems. In Table 3 it is clear that the environmental aspect of sustainability includes all the principles of organic and biodynamic wine production. Therefore it is reasonable why some companies do not see great differences.

Generally speaking, there are three essential points of view, how the interviewees consider the relationship between sustainable and organic/biodynamic management:

- 1) Similar concept: especially small wineries practicing already organic or biodynamic management have the opinion that there are no big differences between the two systems. These wineries integrate themselves into the sustainability system and think that sustainable is in fact not more than organic/biodynamic farming since both have the environment in focus.
- 2) Middle way: some interviewees believe that organic/biodynamic is only a small part of sustainability, namely the environmental aspect. In their opinion organic/biodynamic can be sustainable, or the other way around but it is not inevitable.
- 3) Different concept: most conventional companies bring forward the argument that organic/biodynamic systems are inflexible and because they are focusing only on the environmental aspect without dealing with water, energy, waste conservation, not to mention the economic and social aspects, they cannot be seen as sustainable. They all share the view that also conventional farming can be sustainable.

Considering the official definitions of all these terms, it can be claimed that sustainable, organic and biodynamic farming differ on the level of commitment, restriction and adequate finances. Sustainable is described to be the most economic and liberal farming while biodynamic is the farming system with the most rules and restrictions and therefore requires the biggest commitment.

Despite this fact the opinion of interviewees is varying enormously. Table 4 shows the number of interviewees who believe that sustainable winemaking is different from organic/biodynamic. It is interesting to note that here again USA/California and France show the highest proportion of wineries distinguishing between the two systems, probably again because of the same reason as mentioned in 3.1.

In some countries sustainability is still an unknown term. Therefore only a limited range of answers was expected. This limitation is to be found in the comparison of organic/biodynamic with sustainable as well as in the sustainable practice.

Because of a higher number of interviewed wineries which disagree that sustainable practice is equal with organic or biodynamical farming, this hypothesis (H<sub>2</sub>) must be rejected. However, by rephrasing the hypothesis "Small wineries practicing already organic or

biodynamic management have the opinion that there are no big differences between those two systems” a part of the original hypothesis can be confirmed.

**Table 4**

Number of wineries believing there are differences between sustainable and organic / biodynamic system

Country	Number of interviewed wineries	Organic/biodynamic
France	15	11
Germany	8	3
USA/California	7	7
Hungary	7	2
Italy	6	1
Greece	6	2
Spain	6	3

### 3.3. Pros and cons of sustainable wine production

Similar to the definition, arguments for and against practicing sustainability is a quite individual issue.

From table 5 it is deduced that practicing sustainability has as many pros as cons which does not make it easy for the wineries to change their philosophy from one day to the other. Interviewees see the biggest advantage in the protection of the environment, but also additional advantages like improved quality, economic efficiency, cost efficiency through using e.g. renewable energy, less material for packaging, and effectively organised producing processes, surfaced during the interviews.

**Table 5**

List of the most mentioned arguments

Country	Pros	Cons
<b>France</b>	responsibility; transmission of healthy heritage; doing something positive for the future generations	time management; investment; implementation; administration; difficult to understand
<b>Germany</b>	protection the environment; breaking the monoculture; disclaim of chemicals; future oriented business management;	higher costs through social aspect
<b>USA/California</b>	agro-ecological development; flexible, dynamic character; this kind of farming is exciting; financial efficiency	time-consuming; additional individual efforts; greenwashing; hard to communicate; freedom of using synthetic chemicals in the vineyards
<b>Hungary</b>	easy to practice, protect the environment	under-developed in Hungary; needs more time to be used in practise
<b>Italy</b>	awake interest of consumers; makes communication more effective and profitable; health aspect for the environment and for employees through disclaim of chemicals	extra costs through social aspect; lack of uniform norms; marketing tool
<b>Greece</b>	cost efficiency; higher product quality; feeling of satisfaction	under-developed in Greece; difficult to find appropriate sources, help and regulation; time-consuming; investment required

<b>Spain</b>	sustainability is the future; improvement of the environment; integrated economy; efficient processes; positive image; differentiation; money saving; quality	more costs; change of mentality; economic resources; not much support from the society; slow way; needs communication
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Some companies even mentioned the positive reaction of consumers while interviewees from California – due to various bad examples in the past – were warning us of using the term sustainability just as a greenwashing tool. Interviewees brought up time intensity, extra costs and communication barriers as disadvantages. Sustainable farming requires more time because of documenting and tracking down every single process. Furthermore it needs capital investment, especially at the very beginning when restructuring is necessary to prepare the company for sustainable management.

The next greatest disadvantage from the interviewees' point of view is related with different kinds of communication listed below and almost every winery judges this point as quite critical. This problem exists even on three levels:

- 1) Getting information about sustainability practices: the first critical information barrier occurs when wineries being interested in sustainable wine making try to get information about sustainable practices. Because too many different sustainable practices - being constantly changed - exist, newcomer wineries need a partner or a corresponding person to help them at least in the first steps. Therefore, wineries who are members of cooperatives have an easier way to start following a central management.
- 2) Informing co-workers: to the social aspects of sustainability belong also the co-workers of the winery because they should get involved with the whole sustainable concept of the company, too. In several wineries actually sustainability is defined not only as a new management system but as a personal philosophy, possibly even a lifestyle, and therefore it is not always easy to persuade co-workers of its importance or simply of its meaning.
- 3) Informing consumers: "sustainability only exists when also consumers are informed of it" said an interviewee who wanted to emphasize the importance of informing consumers. This should contain among others basic information about sustainability but also should mean a current information flow between producers, government and consumers.

### 3.4. Consumer reaction to sustainable wine

Due to the fact that interviewees from different countries assessed consumer reactions diversely, the answers were split into country-specific parts.

*France* – Interviewees in France associated this part of the interview dealing with the consumer reaction mainly with the question of communication, namely why consumers should be informed about sustainability. Positively thinking wineries hold the opinion that consumers are positive towards sustainability because "it is good for their health and for the environment" and that they like to be informed because they feel involved. However, critical voices say that there is too much information, too many labels on the market, consumers are confused with the management systems and they do not know what they mean.

*Germany* – Interviewees here argue that consumers are primarily interested in wine quality and not in farm management systems, still they show interest when the term sustainability is being mentioned. Also German wineries brought up the example of confused consumers who did not distinguish between sustainable and organic or biodynamic.



*USA/California* – Interviewees are also of the opinion that consumers are greatly confused, since they do not know what green, sustainable, organic, biodynamic or even fish friendly farming means. They are not informed enough to understand the differences and it is very complicated for them. Their environmental consciousness has evolved extremely in the last 20 years, they support everything green but they really trust only the certified sustainable wines.

*Hungary* – The general opinion of the interviewees is uniform: “sustainability is an unknown term for consumers, not even experts or winemakers do know exactly what it means”.

*Italy* – Private clients of biodynamic wineries are always interested in the farm management, therefore interviewees think that sustainability is also one of the information which can awaken interest; still not every consumer is willing to be informed about it. Here the effect of economic crisis became obvious as interviewees mentioned that consumers got more price-sensitive and they did not pay attention to ecological and social aspects.

*Greece* – Wineries barely communicate their green practises. Therefore, the reaction of consumers is zero. On the one hand, wineries do not communicate their green philosophy because they believe that consumers will not appreciate it. On the other hand consumers are not aware of any green wines and therefore they cannot prefer them. It is also said, that organic wines are much more expensive than the conventional ones and as a result consumers cannot afford them. However, all interviewees had to say that for their consumers abroad and especially in the United States, that it does make a lot of difference whether the wines are greenly produced and therefore they communicate it to them.

*Spain* – Interviewees think that at the moment consumers are not much concerned about this aspect, they just show some sympathy. This probably resulted from the lack of information, campaigns, etc. Wineries practicing sustainability want to increase the consumers’ awareness, which is slowly starting to change.

Also the third hypothesis (H<sub>3</sub>) based on the results of Zucca, Smith and Mitry (2009) can be confirmed, since almost all of the interviewees made mention of their experience or of being afraid that consumers were confused by sustainable winemaking concepts.

### **3.5. Organisation concerning sustainability**

The majority of examples of different organisations was given by the interviewees in California. This has to do with the fact that California was the pioneer in sustainable winegrowing. The biggest and most trustworthy one appears to be the “California Sustainable Winegrowing Alliance” that is associated with the Wine Institute of California and with the California Association of Winegrape Growers. Others were the “Napa Green Winery”, “Napa Green Land” and “Fish Friendly Farming”, all three created and certified by Napa Valley Vintners, the “Bay Area Green Business Program”, the “Sustainable Napa County”, “SureHarvest”. The above-mentioned organizations focus on certifying wineries as sustainable and also on funding education programs for the winegrowers.

Wineries from other countries listed here, belong to organic and biodynamic organisations, which shows again that interviewees mix up these systems with sustainability.

French companies underlined the activity of cooperatives concerning sustainability practices and said that also some winegrowers’ associations help although only with information. In Germany, winegrowers’ associations and official service centres which are also running their own pilot projects like Weinbauverband Franken, Dienstleistungszentrum Rheinland-Pfalz and DINE in Heilbronn are mentioned. In Hungary there is only one program which provides information about sustainability (AKG), whereas the other mentioned organisations were rather organically and biodynamically oriented. In Greece, sustainability means for some

wineries a complete management system which can be certified and supervised by the program “Agrocert”. There are numerous agencies and consultants that can put together and certify this system in the companies. Agrocert, though, is only specified in viticulture and not in the winery. Italian interviewees point to regional initiatives like “campi aperti” and take the San Michele research institute as an example, too. In Spain all the interviewees agree that there is not a special organization related to this concept, at least not officially. They only mention some organic and biodynamic organizations like Sociedad Espanyola de Agricultura Ecológica (Spanish Society of Ecological Agriculture), Unió Vinícola Catalana (Catalan Wine Union), but no special information sources about sustainable wine production.

Furthermore, standardisation systems like ISO or HACCP as the most relevant ones are mentioned in almost every country.

#### **4. CONCLUSION**

This cross-cultural study conducted in seven countries shows how difficult it is to define the term “sustainability” because not only each country but also each interviewee has a different understanding of sustainability in the wine industry. Generally speaking, the term is mainly associated with the environmental aspect and in some cases only with carbon footprint. However there are already wineries which have put the complete sustainable theory successfully into practice. Another critical point arises when talking about the difference between sustainable and organic/biodynamic management. There is ambiguity about these terms, since not only consumers but even some of the wineries still confuse sustainability with organic/biodynamic farming. As for the advantages of sustainability, almost all interviewees are of the same opinion that it protects the environment and that it is of particular importance for the future. However, practicing sustainability is assessed as a time-consuming system needing extra investment and sometimes personal commitment and philosophy. The interviewed wineries generally accept that consumers are not informed well enough to appreciate sustainable wines, so that it will be another challenge for the wine industry to persuade them. In overall, although sustainability has been developing very intensely over the last years, including more and more areas in the everyday life, it still has a long way to go to its complete expression.

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## **Appendix**

### **Question catalogue**

1. What does “sustainability” mean to you, how would you define it?
2. What are the most important principles of “sustainable wine” in your opinion?
3. Do you find any differences or similarities in sustainability with the organic or biodynamic viticulture?
4. Why did you choose the philosophy of sustainability for your winery and what was your philosophy before?
5. Do you find practicing sustainability complicating or simple?
6. How exactly do you practice sustainability (in general)?
7. What are the pros and cons from the system you are following?
8. How do consumers react to sustainable wines?
9. Concerning sustainability what kinds of organizations exist in your country?
10. Do you get any help/consulting from these specific organizations?
11. How does this consulting work (member fees, seminars..)?
12. Is external help/consulting necessary to you?
13. How would you consider the development of sustainability in your country (comparing with other countries)?