

Make sustainable the Prosecco DOC wine chain: The case of Prosecco Sustainability Project

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Abstract. Attention to sustainability is growing in the wine sector, but the rate of association to wine sustainability programs or schemes still appears to be limited. To encourage participation in sustainability programs, a collaborative approach adoption to share in wine communities the skills and knowledges necessary to manage the transition from a conventional organisation of production to a sustainable one, seems to be a functional strategy. This paper, present as case study, the Prosecco Sustainability Project, to investigate how a participatory/collaborative approach coordinated by an interbranch organization to facilitate the adoption of sustainable best practices by companies, can actually be developed. Results show that is necessary a strong integration and collaboration between different actors and that guidance from a coordinating figure who is able to foster dialogue and cooperation among the various stakeholders involved is needed.

Keywords: sustainability, wine, certification, territory, Prosecco, competitiveness

1 Background and objectives

Sustainability has been the focus of international institutions and most national governments, although not always with the same emphasis, since at least 1987 when the WCED (Brundtland Commission) published the Report “Our Common Future”. Now the concern for the sustainability issues of wine production is shared also by retailers, consumers, local communities and politics in producing areas.

The general attention to sustainability aspects in fact is inducing wine consumers to orientate towards products made with less impacting processes. There is in fact a considerable segment of consumers, across different countries, with positive perceptions of sustainable methods of wine production [1]. The idea that a sustainable wine is beneficial for the environment, influences in a positive way the purchasing attitude of people, in particular for those particularly caring of environmental issues [2-4]. For example, most Millennials believe they have the responsibility to make the world a better place: although many of them do not consider themselves environmentalists, they have a strong sensitivity to environmental policies [5]. They have grown up in a historical period in which the topic of limited environmental resources has been widely debated by media, therefore their attention towards environment induces them to evaluate sustainability aspects when making purchases decisions [6, 7]. This consumers attitude, obviously, is reflected on markets. Particularly in northern European countries, where the purchase and distribution of wine are managed by monopolies, latest tenders published are reserved for wines which respect specific sustainability requirements. It is therefore essential that wineries adopt sustainable practices if they want to maintain their competitiveness.

In addition, the transition to sustainable production methods is required also by local communities. People in fact are increasingly sensitive to the use of pesticide in agriculture [8], especially in the areas of high agricultural intensity and rural tourist vocation. Moreover, intensive

viticulture systems are likely to have negative effects on soil, water, air quality, biodiversity and landscape. For this reason, people who live in these areas require to adopt alternative products, strategies, techniques and new technologies oriented to reduce the use of chemicals and make safer and more sustainable viticulture, safeguarding people and environment health.

The transition is also encouraged by politics. The EU has defined a series of strategic initiatives called the European Green Deal, with the objective of moving the EU towards green transition and ultimately to achieve climate neutrality by 2050. The new CAP, in line with the objectives of the Green Deal, also favours the transition towards sustainable agriculture through various forms of payment for farmers adopting sustainable instrument or techniques, such as eco-schemes, rural development or sectoral [9].

As consequence many different sustainable winegrowing programmes were developed through collaborative efforts driven by national institutions and producer associations in all wine producing countries. In this process, as overtime the importance of considering the social and economic aspect is increasingly emerging, appeared different ways to address the challenge of sustainability [10, 11].

Despite the general attention to sustainability, the rate of association to wine sustainability programmes or schemes is very different among wine producing countries, mainly due to the technical complexity and the uncertainty about the economic impact of the compliance with the sustainability protocols. As a matter of fact, the consequences of participation of cooperatives or wineries in common sustainability projects on their viability are largely understudied and they would deserve to be studied in depth. In principle, positive result should come from the association to sustainability schemes, for the possibility of selling the product at a higher price for the use of more efficient and effective techniques, but the experience of managers and professionals suggest that it exist a wide array of situation, largely depending on eco-physiological condition of vineyards, farm/firm structure

and available skills. This is confirmed by two research projects [12, 13] that show that when specific capabilities are available in managing obligations related to the sustainability schemes their adoption does not have a negative impact on cost and profitability.

A key issue in the enlargement of participation to sustainability programmes looks therefore the possibility to adopt a collaborative approach to share in wine communities the skills and knowledges necessary to manage the transition from a conventional organisation of production to a sustainable one in a context where the relevant problems are mostly “place related”. In this regard, the OIV consider as relevant the role of sectoral bodies, such as inter-professional bodies, professional associations, various kinds of consortia, associations of producers in shaping the vitivinicultural sector and formulating and implementing collective strategies to face future challenges [14].

Anyway, in the wine sector, many interbranch organisation are committed to foster wine production in specific area and now pay particular attention in the improvement of sustainability of all involved producers; their objective is that all relevant stakeholders could recognise the concerned wine area as sustainable.

The objective of this research is to investigate how a participatory/collaborative approach coordinated by an interbranch organization to facilitate the adoption of sustainable best practices by companies can actually be developed. For this reason the paper present, as case study, the activity centred on the Consorzio di Tutela Prosecco DOC (from here on: Consorzio) - the interbranch organisation in charge to govern the production of the PDO¹ Prosecco wine in North-east Italy - set up to improve the average level of sustainability of all Prosecco producers, implementing a collaborative action involving research centres, professionals and a selected group of wine companies representing the different firm types operating in the Prosecco DOC production system.

In detail the research question (RQ1) that has been formulated to achieve the goal is “How is possible to concretely organize the activities that need to be put in place to implement a participatory/collaborative approach?”

2 Data and methods

The case study analyses and discuss the process carried out by the Consorzio to implement an innovative sustainability management system of wine production in the Prosecco DOC territory, called Prosecco Sustainability Project. For this purpose, the Consorzio intends to apply sustainability requirements to the entire chain through the monitoring of indicators of sustainability and the assessment of the impact of new techniques and procedures.

To support this process, the Consorzio has promoted the establishment of an operational group in the framework of the European Innovation Partnership (EIP) for agricultural productivity and sustainability, according to art. 35 of the reg. 1305/2013. The operational group of the Prosecco Sustainability Project consists of research centres, professional figures such as management systems development consultants, agronomists, oenologists, environmental engineers, software engineers, analysts and programmers, economists, labor consultants and a selected group of wine companies representing the different firm types operating in the Prosecco DOC production system.

The case study is developed through analysis of the reports and documents produced by the activity of the operational group and with ad hoc interview to the different actors involved.

The Prosecco Sustainability Project has chosen as sustainability benchmark the Equalitas® standard (<https://www.equalitas.it/en/>), which contains severe environmental, economic and social sustainability requirements, and basically aims to design the process able to support the Prosecco producing community as a whole to comply with such standard and to establish a network, coordinated by the Consorzio, useful to exchange experiences and information and collect data to boost continual improvement processes.

The Equalitas standard envisages three types of certification:

- Sustainable Organization (SO), which guarantee that all activities that are under the control of a company comply with a set of sustainability requirements;
- Sustainable Product (SP): which guarantee that all the production steps of a product comply with a set of sustainability requirements;
- Sustainable Terroir (ST): which guarantee that a relevant share of producers of a PDO wine and the management body of such PDO comply with a set of sustainability requirements.

To achieve its objective of increasing average level of sustainability of Prosecco PDO, the Project, on one hand, aims to encourage wineries to comply with sustainability standards such as Equalitas Sustainable Organization or Equalitas Sustainable Product certifications and, on the other hand, wants to support the Consorzio to be compliant with Equalitas Sustainable Terroir certification.

The Prosecco Sustainability Project is a relevant case study because involves a very large community of producers. In fact, compared with other similar initiatives such as the achievement of Equalitas Sustainability Terroir certification obtained by producers of PDO VINO Nobile di Montepulciano and PDO Rosso di Montepulciano or the evaluation of PDO Ucles carbon footprint in Castilla y la Mancha region, this project has

¹The Protected Designation of Origin (PDO) is a type of geographical indication (according TRIPS agreement) used to identify wines with quality and characteristics essentially or exclusively due to a particular geographical environment

with its inherent natural and human factors, whose recognition within the European Union is subject to certain rules (Reg. (UE) 1308/2013).

been developed in a broader and more articulate community that involves 24,450 hectares under vines and circa 11,550 winegrowers and 360 bottlers.

The Prosecco Sustainability Project is structured in five phases of action:

- 1- Coordination of the participants to the project (wineries, research institutions, sector experts and the Consorzio), whom must cooperate to find the most suitable solutions and response methods for different situations. Output of this phase was the definition of a work plan and the drafting of audit reports relating to the application of good vineyard and cellar practices according to the Equalitas® standard in the selected wineries;
- 2- Structuring of the coordination system, including the development of the IT platform and the initial survey of indicators (baseline), in order to verify the degree of companies' organisation and adoption of good practices in the vineyard and in the cellar;
- 3- Development of support strategies and tools for the implementation of the three pillars of sustainability in the Prosecco DOC, which branches off into several sub-phases:
 - a) the verification of any critical issues that may arise in complying the standard requirements analysing the situation of the selected wineries;
 - b) the drafting of a "standard manual" that allows the assessment of the entire supply chain, the verification of the requirements and the specific responses for the three pillars of sustainability, optimized for the characteristics of the territory concerned;
 - c) the test in the selected wineries of specific software for recording data of operations in the vineyard (use of pesticides, fertilization), in the cellar (sparkling wine, must values, etc.), in administration (water consumption, energy expenditure etc.) to keep the whole supply chain under control.
- 4- Development of a control system based on the consortium, which acquires and processes information from companies and wineries, to constitute a collective knowledge ground for the attainment of a common sustainability standard.
- 5- Training activity to share in the Prosecco community the results of the project in order to stimulate a general adoption of the sustainable practices and the implementation of the desired coordination system.

Thanks to the cooperation of the different actors of the OG, a lot of support strategies and tool for the implementation of the three pillars of sustainability, useful both for wineries and Consorzio have been realized or will be developed soon.

To improve environmental sustainability of PDO area the OG is working for reduce the impact of the grape and wine production. Starting with the definition of a vineyard management protocol, a document that identifies the best practices for managing the vineyard sustainably, the OG is working for defining strategies to reduce plant protection products and instead favouring the use of biostimulants. To enable the Consorzio of monitoring the management of the PDO area's vineyard, has been encouraged, among winegrowers, the use of a

vineyard management register. This tool is linked with Carbon e Water Footprint calculators, instruments that can calculate the carbon and water footprint of a company, product, or the entire appellation, taking some of the data from the vineyard management register. In addition, a PDO territory zoning has been conducted, for the identification of areas with different risk classes to climate change and the definition of specific strategies to limit the impacts of the climate change. Given the scarcity of water in recent years, the OG thought it appropriate to develop a platform for meteorological monitoring, for controlling the water state of appellation territory, linked with DSS for farms and defining, at the same times, irrigation models based on water balances and prediction of anomalies. In addition, also a model for energy monitoring and efficiency for winery operations has been developed, in order to reduce energy waste and consumption. The OG has also started a bee biomonitoring for environmental pollution assessment and has been conducted a territory biodiversity analysis through calculation and evaluation of biodiversity indexes defined by Biodiversity Friend standard.

Regarding social sustainability, the OG is developing training tools for human resources growth and management. The social aspects are, in fact, very important and for this reason they are working also on the extension of a code of ethics containing the guiding principles of behaviour of individuals working in PDO area. In addition, because the PDO area is located in an urbanized territory, tools and services for facilitate community dialogue and stakeholder engagement are going to be developed: one of this consists in the establishment of a procedure for handling internal or external notifications, both for wineries and Consorzio.

Economic sustainability aspects are also very important to improve the average level of PDO area sustainability. For this reason, the OG is working on the definition of models for assessing the economic profitability of farm in the PDO area and the economic value generated and distributed by the PDO companies. The analysis of the current economic situation must be accompanied by the analysis of possible future scenarios and medium/long-term risks, so models that can conduct this type of analysis have been developed. In addition, the OG is also defining guidelines for implementing lean production strategies to reduce cellar waste and reduce unnecessary cost. At the end, to communicate the commitment to sustainability clearly, transparently and understandably around the world, the OG is creating a manual containing direction for write a sustainability report in accordance with the GRI standards and European guidelines.

All procedures created should be managed following the manual for implementing a sustainability management system, developed by OG both for wineries and Consorzio.

To manage this complex system, a platform for integrated sustainability management in the appellation linked to other digital tools, controlled by Consorzio, was developed and to ensure the transfer the know-how related to the developed tools, assistance, and training for companies are provided.

3 Results

The case study shows how strong integration and collaboration between different actors is needed to be able to identify and develop strategies that enable companies to move toward a more sustainable production approach, in all three of its dimensions.

This complexity of the task requires guidance from a coordinating entity that is intimately familiar with the producer community and has the trust of the stakeholders. The coordinating entity should be responsible for fostering dialogue between research, professionals, producers and other stakeholders and should encourage a cultural change among farmers through processes of cooperation, innovation and knowledge transfer. Its role is also to find possible funds that can finance research activities and can encourage companies to collaborate.

It is also crucial to involve companies as early as the strategy and tools development phase in order to be able to test the effectiveness of the tools implemented.

4 Discussion and Conclusions

The case study presented, although the project is not completed, shows that the collaborative approach adopted by the operational group appears to be effective in achieving the objective of leading a large and diverse community of wine producers towards a high level of sustainability, overcoming the difficulties of the territory in a meaningful way in terms of efficiency and effectiveness. This can be made possible only if skills and knowledge are available and if the involvement and participation of all stakeholders is ensured.

The case study shows also that the approach of the operational group of the EIP could effectively support innovative processes creating synergies among different actors and competencies. In this regard, suitable agricultural policy instruments are essential to stimulate these processes.

In detail, it should be noted that the collection of the information needed to monitor environmental sustainability is also relevant to the analytical cost control; in fact, by providing a considerable amount of non-accounting data, it allows to feed an analytical cost accounting and facilitates the development of synergies in the pursuit of economic and environmental sustainability. In this perspective, the opportunities of Information and communication technologies clearly emerge, which can also be enhanced by implementing automatic or semi-

automatic systems of data collection on the management of operations in the vineyard and in the winery.

Moreover, it is worth to be highlighted that the activities already carried out show how the centralization at the Consortium of information on the cultivation activities of the consortium members, their processing and use through DSS (Decision Support System), opens up new prospects for continual improvement of the sustainability of the concerned production. The final result will be the quantification and increase in the sustainability of the Prosecco Designation, the consequent amelioration in the perception of wine production among the community, consumers and, therefore, the enhancement in competitiveness.

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