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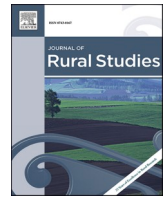
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Bursting the bubble? The hidden costs and visible conflicts behind the Prosecco wine ‘miracle’

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ABSTRACT

Prosecco, a wine that two decades ago was virtually unknown outside of Italy and was considered inferior to other sparkling wines, has become immensely popular. But how did Prosecco producers gear up to meet a booming demand in a highly regulated wine industry such as Italy's? Is this an example of an inclusive growth trajectory? Who is capturing the benefits of this growth and who is bearing its hidden costs? Through the case study of Prosecco, I identify the everyday practices and struggles that underpin the growth of Prosecco in relation to nature, landscape and land use, and examine how the environmental, health and other hidden costs of agro-food value chains shape various layers of visible conflict. The great growth that has characterized the ‘Prosecco miracle’ of the 2010s arises from the reinvention of a geographic origin that was under threat following the 2008 EU wine reform. The ‘discovery’ of a village named Prosecco, located quite far from the original core area of Prosecco production, provided the vector for a large expansion of Prosecco viticulture and wine production, and the emergence of a veritable export bubble. This expansion, supported by key institutions, regulators and the regional political elite, is putting pressure on nature and landscapes and is fomenting local protests against indiscriminate agro-chemical spraying. I find that, while the industry claims to be addressing its key sustainability challenges, a number of conflicts and tensions persist. Ultimately, the case study of Prosecco provides key insights to current debates on the hidden costs of agro-food value chains and their resulting conflicts – confirming that commodity expansion is often linked to processes of appropriation of nature, landscapes and territories, and to the ability of business to capture surplus while externalizing the hidden social, health and environmental costs of production.

1. Introduction

Prosecco wine has become ubiquitous in Europe and North America. Whether served at a wine bar in London or New York, sipped straight or mixed to make an *aperitivo* or *spritz*, it has become the drink of choice for many Western consumers – and especially among Millennials. Its easy-to-drink nature, flexible pairing with different cuisines and affordable price make it perfect for many moments of consumption along the day. But how can a wine that two decades ago was virtually unknown outside of Italy, and that was considered inferior to other sparkling wines such as Champagne, become so popular in such a short time? How did Prosecco producers gear up to meet a booming demand in a highly regulated wine industry such as Italy's? Who is capturing the benefits of the growth behind the so-called ‘Prosecco miracle’ of the 2010s? What are the health, environmental and other hidden costs of this miracle? What

conflicts are emerging as a result?

This article starts addressing these questions in the context of recent debates on the dynamics of global value chains that deal with their hidden social, health and environmental costs, their underlying conflicts and their resulting inequalities (Diprose et al., 2020; Cutler and Lark, 2020; Dauvergne, 2020; Fridell, 2020). These analytical entry points are key in improving our understanding of power dynamics and conflicts (Dallas et al., 2019; Quentin and Campling, 2018) that characterize agro-food value chains more generally. Prosecco is a particularly interesting and relevant case study because demands for sustainability improvements are mostly arising from local communities in producing areas – while in many agro-food value chains they are usually driven by large buyers (Gibbon and Ponte, 2005). The frictions that fast growth has created in the areas of Prosecco production are also key in explaining the politics of recent rural initiatives that are trying to address the

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underlying conflicts – including various sustainability initiatives and the 2019 inscription of the ‘Prosecco Hills of Conegliano and Valdobbiadene’ as a UNESCO Heritage site, which is expected to further promote tourism in the area.

My findings are based on the analysis of secondary documents and primary data collected in 2020 and early 2021 through thirteen interviews with a total of 23 industry operators (some interviews involved several respondents) – including Prosecco producers and marketers, regulatory institutions, consortia for the protection of geographic origin, sustainability certification agencies, research institutions and labour unions. These interviews were all conducted in Italian – some in person, but mostly online due to Covid restrictions (see details in [Appendix 1](#)). In the next section, I discuss the theoretical framing adopted in this paper. In section three, I provide a brief background and history of Prosecco wine and its ‘miracle’ growth of the 2010s. In section four, I analyze the hidden costs of Prosecco production and the visible conflicts that they entail. In section five, I examine the various sustainability initiatives that are arising in the Prosecco district to attempt addressing these conflict. In the last section, I highlight how the case study of Prosecco provides key insights to current debates on the hidden costs of agro-food value chains.

2. Conceptual framework

Global value chain analysis has been widely used to explain the transnational organization of economic activities. It examines discrete ‘value chains’ (the full range of value-adding activities that firms, farmers and workers carry out to bring a product from its conception to its end-use, re-use, disposal or recycling) that are explicitly governed by one or more groups of ‘lead firms’, such as retailers or branded food processors ([Gereffi, 1994](#); [Gereffi et al., 2005](#)). Three key dimensions characterize GVC analysis. A first dimension concerns various forms of GVC governance and the power relations that underpin it at the global ([Dallas et al., 2019](#); [Gibbon and Ponte, 2005](#); [Milberg and Winkler, 2013](#); [Ponte and Sturgeon, 2014](#)), regional and national levels ([Mishra and Dey, 2018](#)). A second dimension refers to GVC upgrading – the paths for value chain actors to add value and extract more rent, eventually moving up the value chain to more sophisticated and skill-intensive operations ([Gereffi, 1999, 2014](#); [Humphrey and Schmitz, 2004](#)). A huge literature is available on these two aspects, which I will not rehash here (see [Ponte et al., 2019](#) for a recent overview).

In this article, I focus instead on a third and emerging dimension – how the hidden social, health and environmental costs of value chains facilitate different layers of conflict and how these may shape or deepen various forms of inequality ([Bair and Werner, 2011a](#); [Quentin and Campling, 2018](#); [Cutler and Lark, 2020](#); [Diprose et al., 2020](#); [Fridell, 2020](#); [Dauvergne, 2020](#)). The hidden costs of value chains encompass ‘unintended consequences, perverse effects, and unacknowledged impact on workers, communities and the environment’ ([LeBaron and Lister, 2021](#)). They can play out at the micro-level (as a result of corporate social responsibility, labour and/or environmental initiatives and strategies by individual companies), the meso-level (when collective and industry-level initiatives have unseen consequences for certain stakeholders and populations) and/or at the macro-level (as the collective effects of individual and sectoral initiatives may actually entrench the underlying causes of the problems they were supposed to address) ([LeBaron and Lister, 2021](#)).

Some of the contributions to these debates have highlighted specific processes of disarticulation and counter-action that are otherwise underappreciated in the value chain literature. They have highlighted the strategic logic of suppliers exiting from GVCs or leveraging a better situation for themselves in them, and the important role played by actors

that are not directly involved in value-adding activities ([Bair et al., 2013](#); [Bair and Werner, 2011a](#); [Werner, 2016](#)). [Bair and Werner \(2011a\)](#), for example, examined the set of social relations that secure commodity production and related processes of inclusion and exclusion (see also [Bair and Werner, 2011b](#)) and traced the social and spatial contours of production through everyday practices and struggles over the creation and appropriation of value (see also [Neilson and Pritchard, 2011](#)). This approach draws attention to the agency of various actors as they attempt to reshape power relations, disarticulate themselves from exploitative GVCs relations and/or refuse participation ([Berndt and Boeckler, 2011](#); [Goger, 2013](#); [Havice and Campling, 2013](#); [Nickow, 2015](#)).

The rapid growth of Prosecco production has demanded expansion or conversion of land use, thus it seems appropriate to also draw theoretical inspiration from contributions that seek a better understanding of how the expansion of production in global value chains relates to the appropriation of nature, landscapes and territories ([Baglioni and Campling, 2017](#); [Havice and Campling, 2013, 2017](#); [Moore, 2015](#)) and how power relations among value chain actors are reconfigured as a result ([Brunori and Rossi, 2007](#); [Rossi et al. 2019](#)). As it has been appropriately argued, ‘the ability of lead firms to govern GVCs cannot be disjointed from the appropriation of nature, strategies to control the labour process and firms’ associated ability to capture surplus value’ ([Baglioni and Campling, 2017: 4](#)) – not only in relation to resource use but also to non-material ‘green commodities’, such as carbon credits and sustainability certifications ([Neimark et al., 2016](#)). The case study of Prosecco can thus be leveraged to serve a wider goal – that of understanding how the hidden social, environmental and health costs are managed by various value chain actors to appropriate value ([Havice and Campling, 2017](#)). In other words, this article seeks to contribute to explaining how ‘firm strategies are articulated with and through the environmental conditions of production’ ([Havice and Campling, 2017: 11](#)), whether and to what extent sustainability is managed in view of creating and extracting value and for managing risk ([Meckling, 2015](#); [Ponte, 2019](#)), and what forms of conflict arise as a consequence ([Quentin and Campling, 2018](#)).

In the rest of the article, I provide a picture of the tensions, conflicts and struggles underlying the so-called Prosecco ‘miracle’, thus contributing to understanding the uneven geographies and unequal power relations in which commodity booms are situated and which they, in turn, often regenerate or amplify. I do so by historically tracing the transformation of Prosecco into an internationally-known and hugely popular drink of choice. While this transformation is thought of as a ‘miracle’ in the industry, it has been accompanied by hidden costs that have wide-ranging consequences for the environment and for the wellbeing of communities living in close proximity to vineyard areas. These hidden costs, and the very visible conflicts they generate, have led to the development of various sustainability initiatives that seek to address these conflict and manage risk. Through the narrative accounts of different value chain actors and institutions, I document the policies and strategies through which hidden costs are managed and, in a number of cases, further concealed.

3. Contextual framework

3.1. Prosecco: a brief background

Prosecco sparkling wine is produced in north-east Italy from grapes of the *glera* vine. The ‘classic’ area of production, on the Valdobbiadene and Conegliano hills in Treviso province, is characterized by a Western portion of steep hills around Valdobbiadene and an Eastern portion of gentler slopes and flatland close to Conegliano (see [Map 1](#)). The climate

of the area is temperate sub-continental, characterized by cold winters and hot, dry and breezy summers – and by suitable rainfall and temperature ranges.¹ Once the glera grape is harvested, it is immediately pressed and clarified in large steel containers at controlled temperature. At this point, the first alcoholic fermentation takes place – through the injection of specific yeasts – and lasts 15–20 days at a temperature of 16–18 °C. The product of this first process is a ‘base wine’ of low alcoholic content, which is then decanted and refined at low temperatures to remove unwanted sediments. In October and November oenologists taste the new base wine to determine the various blends to be used in the second fermentation to make sparkling wine. By the end of the year, the first batches of sparkling wine are ready. These are preserved at low temperatures until they are bottled under pressure (Boatto et al., 2019a: 29–30).

Although the earliest records referring to the production of white wines on and around the hills of Valdobbiadene date back to 1282 (Boatto et al., 2019a: 23), it was only in the late 19th century that Prosecco was further developed in this area, following the establishment of the Treviso Oenological Society in Conegliano – later transformed in the School of Oenology and Viticulture. In the 19th century, viticulture was still a secondary activity in this area, and small-scale production was mainly aimed at self-consumption. This situation remained relatively unchanged until the 1960s (Visentin and Vallerani, 2018). The first recorded attempts at developing a sparkling wine through a second fermentation were made by Antonio Carpené in the 19th century, and then perfected by his nephew in the early 20th century (Boatto et al., 2019a: 12). The first bottle of sparkling Prosecco is thought to have been produced by the firm Carpené & Malvolti in 1924 (Ibid.).

‘Before World War II, Valdobbiadene was an area of net emigration. People here were starving. Wine production for sale is actually a relatively recent activity ... Commercial production of Prosecco in Valdobbiadene developed mostly from the 1960s onwards, but until the 1980s this wine was still considered a local product, a wine that was served during the weekend when farms opened to guests and served their own rustic food and wine’ (Interview #4).²

Up to the 1980s the Prosecco wine industry lived through a period of mere survival, as market demand at that time was for white wines with higher alcohol content. Prosecco producers mainly supplied ‘base wines’ for the large winemakers of Emilia Romagna and Piedmont. This tendency started to shift following the methanol scandal of 1986, when twenty-three people died and over 90 were hospitalised after being poisoned with methanol, which had been mixed with wine by several producers (mostly in Piedmont) to increase its alcohol content. Three-hundred labels were listed as suspect and 12 growers were arrested on charges of manslaughter, grievous bodily harm or illegal adulteration of food. Large quantities of Italian wine were seized in France and Germany, while Denmark enforced a ban on all Italian-made drinks for a period.³ In response to this scandal, many Italian producers started investing in new technology and in improving vineyard and winemaking practices to upgrade quality and efficiency (Bell and Giuliani, 2007; Morrison and Rabellotti, 2009; Cusmano et al., 2010; Giuliani et al., 2011).

The 1990s witnessed a slow movement towards less focus on quantity and more on quality in the Italian wine industry more broadly, as

¹ Annual rainfall is fairly equally distributed along the year and averages 1250 mm in Valdobbiadene and 1100 mm in Conegliano (Boatto et al., 2019a: 27). Climate change is leading to hotter summers and to grape harvesting that is currently starting 10–12 days earlier than a few decades ago (Boatto et al., 2019a).

² All quotes are translations by the author from the original interview transcripts in Italian.

³ Source: <https://www.thedrinksbusiness.com/2011/08/top-10-wine-scandals/7/>.

lifestyles changed and drinking an *aperitivo* at a bar or café before lunch or dinner became more popular. In the 2000s, consumer appreciation started to increase for Prosecco’s fruity and floral tones and mild scent – together with rising interest in sparkling wines that are drier than the traditional Muscat-based sparkling wines, but sweeter than Champagne.⁴ Also, the ‘democratic price’ of Prosecco made it more affordable for everyday use than Champagne (Interview #4).

The institutional and political origins of the Prosecco ‘miracle’.

In order to understand how the Prosecco ‘miracle’ took place, we should first clarify that the wine industry is replete with initiatives seeking to reconstitute, promote and differentiate ‘place’ (Barham, 2003; Overton and Heitger, 2008; Overton and Murray, 2011), including efforts to redefine the spatial contours of production (Neilson et al., 2018) and to reallocate accumulated value (Ponte, 2019). These processes are often led or supported by specific regulatory agencies and institutions (Brunori and Rossi, 2007). The consortia that are behind the Prosecco appellations are repository of important regulatory functions that go beyond safeguarding their geographic indications. One of these key functions is the management of supply and demand. Following the EU wine reform of 2008 (Itçaina et al., 2016), a new EU wine policy was folded into the Single Common Market Organization (CMO), which is currently in force under Regulation (EU) 1308/2013 (Pomarici and Sardone, 2020). Under this new policy, producer organizations and their interbranch organizations and their associations are recognized as strategic actors and are allowed to establish marketing rules to regulate supply (Ibid.). This means that consortia can take actions to maintain an equilibrium between demand and supply, to support the concept that price is an indicator of quality, and to avoid market failure (Interview #3).⁵

The first consortium for the protection of a geographic denomination attached to Prosecco was established in 1962 (Prosecco DOC, *Denominazione d’Origine Controllata*), followed in 1966 by the establishment of the Conegliano Valdobbiadene ‘white wine route’ and the formal registration of the DOC in 1969. Until 2009, only areas in Conegliano, Valdobbiadene and Asolo were allowed to produce Prosecco under the existing legislation that protected the denomination of origin (Interviews #4 and 12). As the 2008 EU wine reform more tightly regulated the indications of geographic origin, the DOC had become in danger of losing their exclusive claim to the denomination because it was related to a grape variety, not to a distinctive territorial place named Prosecco.⁶ The risk at that point was that Prosecco could be produced anywhere in Italy or even abroad.

Although the first efforts in this direction had started in the 1990s already, what brought urgency for reform was, in 2006, a marketing plan from a British drinks business that would have involved celebrity Paris Hilton arriving in Veneto by helicopter to promote a version of ‘Prosecco’ packaged in a gold-coloured can called ‘Rich’. ‘Under Italian law, [Prosecco]... can be sold only in bottles, but producers of the

⁴ Sparkling wines in Italy were traditionally drunk at Christmas and Easter in Italy, but they are now purchased more evenly throughout the year, with a peak in November in preparation for the holiday season (Interview #4).

⁵ Since 2018, the consortia have been allowed by Italian regulation (Art. 39 of the Italian wine law) to seek alignment between demand and supply. This market management system works as follows: a) when supply exceeds demand, stocks of base wine that are within the annual limit are set aside for a possible sparkling process and bottling later in the season, or eventually to be sold as base wine; and b) when demand exceeds supply, a maximum 20% of total production of base wine over the annual production limit can be sold as DOC/DOCG following a regional decree (Interview #4). The management of volumes and certification of DOC and DOCG bottles is carried out by Valoritalia, a private company appointed by the Ministry of Agriculture to certify grape variety, vintage and geographic origin.

⁶ Producers wanted to avoid what had just happened to ‘Tokai’ wine in Friuli (now called ‘Friulano’) after the name was assigned for exclusive use to Hungarian Tokai (Interview #4).

canned prosecco sell to countries such as Britain, Germany, Austria and Switzerland'.⁷ The consortium realized that they were losing control of the name and thus of the territorial elements that may define it.

The approach the consortium and the regional political elite took to solve this problem was quite inventive. They realized that a village named 'Prosecco' is located close to Trieste (see Map 1), quite far (about 150 Km) from the then core area of Prosecco wine production in Conegliano and Valdobbiadene. They dug out historical records showing that in the late 16th century the Carsic hills around Prosecco village were already known for the cultivation of local grape varieties and the production of a wine called in the local dialect *Prosekar*, deriving from the Slovenian word *Prosek* (meaning 'deforested area') (Visentin and Vallerani, 2018). However, this wine is not based on the glera grape – it is made with a blend of Vitozza, Malvasia and Terrano grapes – and, most importantly, is a flat white wine.⁸

Yet, the consortium managed to construct a historical heritage story related to *Prosekar* to apply for a reform of the geographic indication system for Prosecco, seeking that grape growers and winemakers in other areas growing the glera grape could no longer call the wine they make from it 'Prosecco'. This move was supported and eventually embedded into regulation by the then Minister of Agriculture, Luca Zaia – whose home constituency is Treviso (which includes the areas of Conegliano and Valdobbiadene) and where he had previously been the president of the province. Zaia, a prominent member of the Lega party, has been the governor of Veneto region since 2010. He was re-elected for a third consecutive term in 2020 with an astounding 77% of the popular vote.

This reform process expanded the overall Prosecco DOC from a relatively small area within the province of Treviso to other four provinces in Veneto (Belluno, Padova, Venezia and Vicenza) and four provinces in Friuli-Venezia Giulia region (Gorizia, Pordenone, Trieste and Udine) (see Map 1). The original Conegliano and Valdobbiadene area (which also includes the top-quality sub-zones of Cartizze and Rive) has been upgraded to a Controlled and Guaranteed Denomination of Origin (*Denominazione d'Origine Controllata e Garantita*, DOCG), which denotes higher quality – along with the establishment of the new DOCG of Asolo Prosecco (Interviews #4, 5 and 12). In the next section, I focus on the larger Prosecco DOC area and the Conegliano Valdobbiadene Prosecco Superiore DOCG.

3.2. The great growth of the 2010s

Following the 2009 reform of the Prosecco geographic indication, the total planted area of the overall *Prosecco* DOC has grown from 8,700 ha in 2010/11 to almost three times as much, 24,450 ha in 2018/19 (see Table 1). Production volumes followed suit, from 141 million bottles to 464 million.⁹ As Table 1 shows, a large majority of Prosecco DOC production is of the *spumante* variety.¹⁰ Although the rest of the Italian wine industry has also innovated and adapted in the past two-three decades

(Cusmano et al., 2010), the performance of Prosecco has been particularly impressive.

The Prosecco DOC productive base is characterized by fragmentation: there are 11,460 independent viticulturists, 1,192 winemaking firms and 347 bottler firms specialized in the process of turning base wine into a sparkling Prosecco (Consorzio Prosecco DOC, 2019b). Almost 78% of total production by volume is exported (70% of which in the rest of Europe and 24% in North America). In the Italian consumption market, 58% of Prosecco DOC production by volume is distributed through retailers, 32% through the HoReCa channel (hotels, restaurants and catering), 1% directly at the production site and 9% through other channels (Consorzio Prosecco DOC, 2019b).

Table 2 provides some detail in relation to export destinations and recent growth dynamics of Prosecco DOC. Important trends include the fast growth of exports in comparison to relatively stagnating domestic sales. The top four importers of Prosecco DOC (UK, USA, Germany and France) accounted for nearly 69% of total exports in 2019, with fast growth recorded especially in the USA (+21% from 2018 to 2019) and, of all places, France (+39%). Prosecco currently accounts for about one-third of global exports of sparkling wine in terms of volume (see Table 3), while its main competitors (Cava and Champagne) together account for one third (although Champagne attracts much higher unit prices).

Of the two DOCG areas that produce Prosecco Superiore (of higher quality), the most important is the Conegliano Valdobbiadene DOCG – considered to be the 'classic' Prosecco area of production. This area includes 8,431 ha of vineyards, up from 5,754 ha in 2011 (Consorzio Prosecco DOCG, 2019b: 17).¹¹ In 2019, the DOCG consortium presented a moratorium on new plantings, which the Veneto region accepted (Consorzio Prosecco DOCG, 2019b: 17). Similarly to the Prosecco DOC area, the DOCG is also fragmented, with 1,732 independent viticulturists, 266 winemaking firms, 112 integrated viticulturist and winemakers, 7 cooperatives, 35 integrated winemakers/bottlers and 28 bottlers (Boatto et al., 2019b).

DOCG production in 2019 was estimated at 92 million bottles, with a sales value of nearly half a billion euros. Differently from the overall Prosecco DOC area, exports represented only 44% of total sales in 2019 (Boatto et al., 2019b) (see Table 4).¹² Top destinations for DOCG exports by value are the UK (€62.8 million), Germany (€39.5 million), Switzerland (€25.1 million) and the USA (€5.7 million). These top four importing countries account for almost 71% of the total value of DOCG exports. Of particular interest is the explosive growth in the UK market (+83% in 2018–19 by value) (Consorzio Prosecco DOCG, 2019a: 8). In the domestic market, in 2019, DOCG sales by value took place mostly through the HoReCa channel (36.5%) and supermarket chains (32.5%), followed by the wholesale market (21.8%), direct sales (7.5%), e-commerce (0.6%) and other channels (Boatto et al., 2019b: 7).

3.3. A happenstance success?

The analysis provided so far indicates that growth in wine production was facilitated by the reform of the Prosecco geographic origin. But that alone cannot explain the rapid growth of sales and especially exports. Some industry operators link this development mostly to happenstance, and a general move towards wines with lower alcohol content and an increasing preference for sparkling wine (Interview #3). As a large wine producer stated, 'nobody saw it coming' (Interview #10). This producer, which is specialized on making base wine to be sold to bottlers, in the past five years had to install a number of

⁷ Source: <https://www.theguardian.com/world/2006/sep/24/italy.foo.danddrink>.

⁸ This observation was made by local interviewees featured in a popular Italian programme of investigative journalism (see RAI3 RAI 3 Report, 2016).

⁹ In 2019, 87% of the total production of Prosecco wine came from the vinification of the glera grape, 7% from Pinot Grigio, 4% from Chardonnay and the rest from Pinot Bianco and other varieties (Consorzio Prosecco DOC, 2019b).

¹⁰ Three kinds of Prosecco DOC are produced, depending on the pressure under which it is bottled: *spumante* (bottled at over 3 atm of pressure), *frizzante* (between 1 and 2.5 atm) and *tranquillo* (under 1 atm). All three normally reach an alcohol content of 10.5–11% and have a minimum total acidity of 5.0 g/l. According to the level of residual sugar, Prosecco can sold as Brut Nature (0–3 g/l), Extra Brut (0–6), Brut (under 12), Extra Dry (between 12 and 17), Dry (between 17 and 32) and Demi-Sec (between 32 and 50). Source: <https://www.prosecco.wine/en/types-of-prosecco>.

¹¹ 7971 ha are under the general DOCG denomination and the rest under two higher-end denominations (Rive DOCG, with 352 ha; and Superiore di Cartizze DOCG, with 109 ha) (Boatto et al., 2019b: 15).

¹² The average price of sale in Italy for DOCG Prosecco in 2019 was €5.94 in the domestic market and €5.23 in export markets.



Map 1. Prosecco area of production.

Source: <http://italianowine.com>

Table 1

Prosecco DOC: Area and production (2010/11–2018/19).

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Actual planted area (ha)	8,700	11,400	14,500	16,200	17,850	19,450	20,250	23,250	24,450
Potential area allowed by regulation (ha)	not defined	20,000	20,000	20,250	20,250	20,250	23,250	24,450	24,450
Total wine production (hl)	11,62,000	14,71,000	17,57,000	18,96,000	22,40,000	34,00,000	35,50,000	32,50,000	36,48,000
Total bottled quantity (#)	141,762,267	180,105,067	194,460,266	241,569,199	306,687,599	355,231,732	410,892,932	439,700,893	464,252,312
of which 'spumante'	75,653,067	105,361,600	117,845,600	158,211,200	221,918,533	272,159,733	331,793,600	360,462,778	386,808,664
of which 'frizzante'	65,074,800	73,117,734	76,215,733	83,020,533	84,456,400	82,796,266	78,914,666	79,023,470	77,234,515
of which 'tranquillo'	1,034,400	1,625,733	398,933	337,466	312,666	275,733	184,666	214,645	209,133

Source: elaboration from data provided by Consorzio Prosecco DOC.

autoclaves to add the sparkling process for part of their production infrastructure, as other industrial bottlers 'had run out of space themselves' (Interview #10).

Some producers argue that the secret of success for Prosecco is its easy-to-drink nature and the fact that it can be consumed at different times of the day (as an aperitif, at lunch, in the afternoon, at dinner)

(Interview #1). Others point out that Prosecco seems to have become the drink of choice of Millennials in the UK,¹³ following a concerted marketing campaign that included Prosecco festivals around the UK and the opening of consortia offices in New York, Xi-An and Hamburg (Basso and Vettoretto, 2020: 4). A representative of the Prosecco DOC consortium told us:

¹³ Source: <https://www.decanter.com/wine-news/millennial-prosecco-uk-sparkling-wine-sales-373788/>.

Table 2

Total sales and exports of Prosecco DOC (2017–19) (hl).

Partner country	2017	2018	2019	% of total exports (2019)
Total sales	4,025,170	4,206,148	4,377,934	
Domestic (Italy)	1,292,708	1,375,969	1,231,858	
Total exports	2,732,461	2,830,179	3,146,076	
United Kingdom	988,599	955,908	997,782	31.72
USA	550,347	570,047	689,049	21.90
Germany	306,779	313,602	331,061	10.52
France	9823	109,496	152,331	4.84
Switzerland	90,037	92,773	96,831	3.08
Rest of Europe	356,047	476,498	480,788	15.28
Canada	47,446	53,287	63,986	2.03
Australia	34,567	45,621	53,269	1.69
Russia	30,112	37,854	49,422	1.57
Asia	56,274	54,403	46,972	1.49
Other countries	262,430	120,690	184,585	5.87

Source: [Consorzio Prosecco DOC \(2019c\)](#)**Table 3**

Global exports of sparkling wine by volume (1000 hl).

	2017	2018	2019
All sparkling wines			9,319
Prosecco	2,732	2,830	3,146
Cava	1,191	1,252	1,168
Champagne	1,123	1,129	1,139

Source: elaboration from [Consorzio Prosecco DOC \(2019c\)](#)**Table 4**

Production and exports of Conegliano Valdobbiadene Prosecco Superiore D.O.C.G. (2019).

	€ million	% of total
Total production value	487.9	100
Sales in Italy	295.7	56.3
Exports	202.2	43.7
of which exports to:		
UK	62.9	33.0
Germany	39.5	17.5
Switzerland	25.1	13.4
USA	15.7	7.4

Source: [Boatto et al. \(2019b\)](#).

There is no single story for the success of Prosecco. In France, there has been no marketing investment and yet exports are booming. A large effort was made to promote it in the Far East with very little success. It so happened that among Western consumers sparkling wines became more fashionable. It helps that Prosecco is very versatile, it lends itself to coupling with many different foods and types of cuisine, and that it has low alcohol levels. The fast growth of the *spritz* fashion has helped, but not as much as it is generally thought – most spritz is made with low costs generic sparkling whites (Interview #5).

Others argue that the Prosecco boom would not have happened without local innovation. On the one hand, the wine school of Conegliano provided knowhow and support in raising quality. On the other hand, the local entrepreneurial class was able to take risks and innovate – for example by investing on autoclaves for the sparkling process quite early in the wine industry, back in the 1980s (Interview #4). However, this overall miracle narrative masks a darker side of the story, which I unpack in the next section – where I highlight the hidden costs behind the production and export boom of Prosecco and the visible conflicts that have arisen as a result.

4. Hidden costs and visible conflicts

4.1. Area expansion vs environmental degradation

The large increases in area and production volumes that the Prosecco district went through in the past decade indicate that there is an important dynamic of land and frontier expansion at play behind the processes of value creation and appropriation ([Moore, 2015](#)). The vineyard expansion that has allowed to meet increasing demand for Prosecco has had implications on soil erosion and other environmental issues. These costs have been mostly hidden from view, although they are key in understanding the processes of appropriation of nature that underpin capital accumulation in Prosecco areas of production. Soil erosion is a particularly contentious issue in Valdobbiadene, as there seems to be a large gap between the picture provided by the D.O.C.G. consortium and what transpires in some of the media and in independent scientific publications. A Prosecco D.O.C.G. consortium representative, for example, stated:

‘The area under viticulture in the hilly zone of the D.O.C.G. increased dramatically in the 1990s and 2000s, but growth has now stopped. In the plains of Conegliano and Vittorio Veneto there has also been expansion. In these areas, many viticulturists left farming in the 1970s to work in the rapidly expanding industry, and the remaining farmers moved on to other crops. However, they have now reverted back to vineyards because it is much more profitable. But these are not new expansion areas, it is agricultural land that has reverted back to viticulture. These days there is also more attention paid to how land is prepared. In the past, hills were simply flattened and the topsoil was damaged as a result. There is more awareness now’ (Interview #4).

A private producer located on the Valdobbiadene hills also argued that vineyards are small and often on steep hills, and that there has been little or no deforestation or planting of new vineyards. ‘Even in the plains vineyards did not take the place of forest. They were planted where in the past there was maize cultivation. You can make €21,000 in net profit per hectare with Prosecco, much less if you plant maize’ (Interview #1). Another producer stated that ‘it is actually good for nature that we have vineyards in Valdobbiadene, otherwise you would have brambles and impenetrable forest. Where there are vineyards there is no soil erosion because the structural work done to establish the vineyard helps water drainage and consolidates the ground (Interview #2).

However, a number of local media articles reported stories on new deforested areas that are leading to landslides.¹⁴ For example, a landslide that occurred in 2014 in Refrontolo led to a heated debate. On the one hand, a media report claimed that it was related to the lack of upkeep of the forested area, rather than the construction of new vineyards.¹⁵ On the other hand, an academic study claimed that it was related to the deforestation of five hectares of vineyard, with the drainpipes along its sides accelerating the speed of run-off water ([Basso and Vettoretto 2020](#): 8). The expansion of planted area is reported in some cases to be causing major changes in the gradient of slopes to make room for mechanical harvesting and thus is facilitating soil erosion and landslides ([Visentin and Vallerani, 2018](#); [De Nardi, 2016](#)).

A number of other academic studies have shown that land use in the Conegliano and Valdobbiadene D.O.C.G. area has changed quite dramatically – with vineyard expansion replacing traditional cropland,

¹⁴ See <https://www.trevisotoday.it/politica/miane-frana-premaor-11-ottobre-2019.html> and *La Tribuna di Treviso*, 14/3/2020.

¹⁵ Source: <https://www.qdpnews.it/index.php/refrontolo/3216-tragedia-al-molinetto-le-cause-lucchetto-ecco-gli-elementi-dei-tecnici-nessuna-frana-o-diga>.

grassland and woodland (Basso, 2019). This represents a process of extraction of surplus from nature for capital accumulation (Havice and Campling, 2017) – a frontier expansion that may be reaching its limits (Moore, 2015). Pappalardo et al. (2019) have modelled the potential soil erosion in the Prosecco DOCG area in view of the large increase of converted area to vineyard production, and estimated a much higher potential erosion impact than in other viticulture areas in Italy. Yet, theirs is not a study of actual erosion based on local monitoring, as the DOCG consortium has vociferously argued (Consorzio Prosecco DOCG, 2019b: 27).¹⁶ Others have characterized some of these changes as ‘viticulture sprawl’ (Basso and Vettoretto, 2020) – the colonization of natural, semi-natural and agricultural land and woodlands that is changing the landscape and creating ‘a globalized wine territory’ (Basso and Vettoretto, 2020).

4.2. Wine operators and institutions vs non-industry local residents

The hidden health costs of Prosecco production became a cause of great debate in Italy starting in November 2016, when the popular investigative journalism programme *Report*, produced by the public broadcaster RAI 3, dedicated one of its episodes to Prosecco (RAI 3 Report, 2016). The one-hour documentary brought attention to the negative health impacts of agro-chemical spraying in Valdobbiadene, where almost every little piece of land is planted with glera vineyards, including in locations very close to homes and schools. The DOCG consortium recommends twelve agro-chemical applications during the growing season, but these can go up to 20 when it rains more often than usual. The documentary footage shows indiscriminate spraying with powerful pressure sprayers very close to homes and streets, even if hand sprayers should be used at distances under 10 metres from them. Local inhabitants complain of having to close their windows very often and of not being able to let their children play outdoors for days following a spraying.

The documentary includes claims by local individuals that the incidence of asthma and cancer are increasing in the communities of Valdobbiadene, and shows the rise of local committees to fight against what they see as an indiscriminate application of agro-chemicals.¹⁷ A follow up episode aired in 2017 (RAI3 Report, 2017) returned to the Conegliano-Valdobbiadene area to check if the situation had changed. The footage of this second documentary includes an interview with the president of Prosecco DOC consortium – where he indicates that new rules have banned the use of glyphosate given that they are creating social conflict in the area. But members of the local committees are still unsatisfied with the progress made.¹⁸

These conflicts have not emerged in an institutional vacuum, as they are the result of large increases in viticulture, which were supported directly and indirectly through a number of instruments that are seen as supporting industry rather than non-producers. These include: the regional allocations of the EU Agricultural Fund for Rural Development; the regional territorial plan (Piano dell'Assetto del

Territorio of 2004)¹⁹ and its modifications (the so-called Piano Casa of 2009)²⁰ that allow new or expansion of buildings in agricultural areas that are not available in more urban areas; and the presidential decree of 2006 stipulating that conversion from non-cultivated areas into intensive cultivation does not require an environmental impact assessment if under ten hectares (Basso and Vettoretto, 2020: 8). These instruments have facilitated an increase in the value of viticultural land, while demand is falling for houses that are contiguous to vineyards due to agro-chemical spraying – leading to new forms of social stratification and some degree of depopulation on the hills. Conflicts are also accentuated by the fact that Prosecco producers do not pay property taxes (Basso and Vettoretto, 2020: 14).

4.3. Prosecco the wine vs prosecco the village

The residents of the village of Prosecco are bearing some economic costs that are related to lost opportunities. As we have seen above, the village of Prosecco was included in the expanded DOC area in order to stave off potential challenges to the use of the Prosecco geographic indication following the EU wine reform of 2009. In exchange for the use of the name ‘Prosecco’ for the larger geographic indication, a local committee in the village of Prosecco had asked for funding from the Ministry of Agriculture to transform a 100-hectare Carsic hilly area overlooking the Adriatic sea to make it suitable for glera vineyards (RAI3 RAI 3 Report, 2016). By the time the request had gone through the ministerial system, Luca Zaia was no longer the minister – and was eventually denied. In other words, the village ‘sold its soul’ without getting anything in exchange. The RAI documentary mentioned above, parts of which were shot in the village of Prosecco, shows members of the committee now claiming that they should at least get a small contribution from each Prosecco bottle sold, so they can go ahead and valorize the Carsic hills for the production of glera grapes. In the follow up episode (RAI3 RAI 3 Report, 2017), Luca Zaia, now the president of Veneto region, says that this is now a matter for the Ministry of Agriculture, not the region. There will be no Prosecco wine produced in Prosecco village for the time being, but in the meanwhile Prosecco producers elsewhere in Veneto and Friuli-Venezia Giulia have fought off the challenge brought by the EU wine reform and continue to dramatically grow their business.

4.4. Boutique vs large industrial producers

The last set of hidden costs I highlight in this section is one related to the ongoing price war between DOC and DOCG producers. The two consortia do not see eye to eye when it comes to current and future strategy. The Conegliano and Valdobbiadene DOCG area has much higher production costs and thus the DOCG consortium is against what they perceive as a price war against them by some of the larger DOC producers, especially the cooperatives (Interview #1). The DOCG consortium is keen to support prices to highlight their superior quality and are against promotional pricing, while the DOC consortium is interested in volume and efficiency – a conflict essentially about the mechanisms of generating surplus value and its distribution.

Another way of framing this conflict is between boutique producers of superior quality Prosecco and cooperatives and large industrial bottlers (Interviews #1, 10 and 11), although there is also increasing recognition that quality and professional management have improved dramatically among the big cooperatives (Interview #7), which have been able to support and train their farmers and now have a solid control over a large proportion of grape supply (Interview #10). But because cooperatives have now also started bottling Prosecco under their own

¹⁶ See also <https://www.trevisotoday.it/attualita/erosione-prosecco-replica-consorzio-valdobbiadene-5-giugno-2019.html>.

¹⁷ A representative of the confederation of cooperatives operating in the wine sector in Veneto argues in the documentary that the incidence of cancer in the area is no different than for the rest of the region – he argues that, as a matter of fact, it is slightly under the average (see also DOCG, 2019b: 29–31).

¹⁸ The 2020 Viticulture Protocol indicates that the consortium, under pressure from local committees, has adopted some practices that go beyond EU and Italian regulatory standards – including a ban on the use of glyphosates and the obligation of putting up signs 48 h in advance of the application of agro-chemicals in vineyards. See <https://www.prosecco.it/it/protocollo-vitico-2020/>.

¹⁹ Source: <https://www.regione.veneto.it/web/ambiente-e-territorio/pat>.

²⁰ Source: <https://www.regione.veneto.it/web/ambiente-e-territorio/piano-casa-veneto>.

brands, they have become both suppliers of base wine to industrial bottlers and competitors in the market for bottled Prosecco (Interviews #7 and 10). A new layer of competition is thus emerging between private industrial bottlers and cooperatives. As cooperatives expand their vertical integration and absorb the margins that were previously accrued by other actors, they are able to place downward pressure on prices to the detriment of other producers, who now complain that cooperatives are ‘devalorizing’ Prosecco (Interview #10).

These reflections partly overlap with an ongoing discussion on the size of operators that characterizes Prosecco production and is used to legitimize its growth. A discursive apparatus is being employed, in this case by both consortia, to argue that the ‘Prosecco system’ is a bastion of small scale production. A representative of the Prosecco DOC consortium stated that:

‘Prosecco DOC is not an industrial denomination of origin, as the average production area is 2.5 ha per farm. It produces large volumes, but from small, family-based farmers... Fifty to sixty per cent of total wine production is carried out by cooperatives with many members. The consortium is thus safeguarding the income of small farmers. Back in 2009, wine grapes were sold at 0.5 €/kg, but after the DOC reform this soon doubled to 1 €/kg’ (Interview #5).

Prosecco DOC consortium representatives also argued that when it allocates new areas for expansion of viticulture,

... the maximum extra allocation per capita is capped at 3 ha to maintain the small farm system that is at the heart of the DOC. This is an inclusive system and allows us to return value to the district and maintain our identity. An alternative system of auctions would have had very different results (Interview #5).

This is quite a different discourse than the one employed in other parts of the Italian wine industry, where fragmentation is seen as setting limits to innovation and efficiency, and where increasing concentration is a sign of modernization (Cusmano et al., 2010).

5. Hidden costs redux?

5.1. Sustainability initiatives

Both consortia have been attempting to address some of the conflicts highlighted in the previous through a series of sustainability initiatives. One of these is the development of a collective concept of sustainability for the production of Conegliano Valdobbiadene Prosecco Superiore DOCG. This is elaborated in a flagship publication by the DOCG consortium (Consorzio Prosecco DOCG, 2020), which highlights five broad dimensions of sustainability: (1) reduction and substitution of agro-chemical application; (2) water management; (3) soil management and biodiversity; (4) CO₂ emissions and energy use; and (5) reuse of byproducts and ecological packaging. Absent (and thus still hidden) from these considerations are the issues of land use change and the impact of vineyard expansion on soil erosion and the landscape. In other words, sustainability is approached in relation to existing viticultural areas, but not to their expansion.

In relation to agro-chemical use, two main approaches are indicated in the DOCG sustainability manifesto (Consorzio Prosecco DOCG, 2020). One is a (tepid) push for conversion to organic and biodynamic grape production – including a special effort to reduce copper use, which is allowed in organic agriculture but is increasingly being questioned because of its residual presence in the soil. Organic production of grapes

for wine is still relatively limited in Italy – and particularly so in the Prosecco areas of production.²¹ A second approach, much more in focus in the manifesto, is captured under the broad umbrella of ‘innovative solutions’. This broad spectrum includes the development of varieties that are resistant to certain pests and diseases, mechanical defoliation solutions, precision spraying machines to avoid dispersion of agro-chemicals in the air, and what is presented as ‘precision viticulture’ based on so-called 4.0 technologies (digital management of viticulture, geo-differentiated maps, drone-based data collection). Precision viticulture is recommended especially in those morphological contexts, such as the Valdobbiadene hills, with steep inclines and difficult access to the vineyards – an instance of technology marrying what is popularly referred to as ‘heroic viticulture’ (Consorzio Prosecco DOCG, 2020: 23, Boatto et al., 2019a: 7). A similar, techno-focused approach is presented in relation to water management and soil management solutions. In the fields of CO₂ reduction and energy management solutions, as well as the re-use of byproducts and ecological packaging, the recommendations included in the sustainability manifesto are all well-known and -tested – lower emissions vehicles, LED-based illumination systems, solar panels, geo-thermal energy, cold accumulation systems, ecological materials for packaging, the use of pomace for distillation and of pruning biomass for compost, energy and biochar production processes.

The DOCG consortium has also started working towards obtaining SQNPI certification (*Sistema Qualità Nazionale Produzione Integrata*; see Image 2, to the left) and seeks to facilitate the certification of 25% of farmers by 2021, increasing this number by 10% per year afterwards (Consorzio Prosecco DOCG, 2019b: 35). When achieved, winemaking establishments and bottling enterprises will be able to use the SQNPI bee-inspired logo on their products. This process is being supported by a network of ‘smart agriculture’ solutions coordinated by the consortium, including 19 meteorological stations, remote sensing and continuous pest monitoring (Consorzio Prosecco DOCG, 2019b: 36–7).²²

When it comes to the larger Prosecco DOC consortium, a report on their sustainability activities for 2019 (Consorzio Prosecco DOC, 2019a) includes a number of important sustainability elements and activities. Notably, the DOC consortium has allocated the latest increase in viticulture area (by 1200 ha in 2017/18) according to a points system that assigned: 230 hectares to organic farms; 148 to farms that follow sustainable practices; and 1,113 that meet the ‘mosaico verde’ standard (meaning at least 5% of viticulture area planted under hedges and forest). Instead of SQNPI, the Prosecco DOC consortium has decided to seek the certification of the whole area under the Equalitas sustainability certification system (see Image 2, to the right). The idea behind

²¹ Only 2.5% of the planted area in the DOCG is under organic management (Interview #4), with the total increasing to 3.3% when including areas under conversion (Consorzio Prosecco DOCG, 2020: 40).

²² SQNPI has been developed by the Ministry of Agriculture, starting in 2016. It organized various regulations that are scattered around different regions and harmonized them in view of providing a set of guidelines for integrated production (including that for wine grapes). The SQNPI standard includes a set of ‘good agricultural practices’ and integrated pest management and is certified by accredited third party auditors. What makes SQNPI unique is that in other countries these standards are offered as general guidelines, within which producers then have to work out the details, often by calling in consultants to help them. This ends up being a complex and expensive process. SQNPI instead provides specific strategies and practices for each crop, and a set of precise indicators and solutions to pest and disease control. The system is tuned to different agro-ecological situations – for example the amount of agro-chemicals needed in viticulture in a hot, dry climate such as Sicily is much lower than in the North, where it is colder and rainfall is higher. According to one of its representatives, SQNPI cuts the cost of certification and allows smaller producers to access it (Interview #8). SQNPI certifies the grape must and the bottled wine, which can carry the bee logo (Interview #8).



Image 2. Logos of Sistema Qualità Nazionale Produzione Integrata (SQNPI) and equalitas.

Sources: <https://www.valoritalia.it/produzione-integrata/> and <https://www.equalitas.it/en/>

Equalitas is to address sustainability broadly, covering its economic, social and environmental dimensions.²³

A representative of the Prosecco DOC consortium told us that.

... Sustainability has to become a prerequisite of the productive system, but producers need time to come along. The ban on glyphosate, for example, was carried out too quickly, and many producers remain unhappy with it. Also, the Ministry has not included it in their regulations yet, because it claims it does not relate to 'quality', so the ban is for the time being only applied in the Prosecco area. We do not believe that organic certification is a strategic priority, we would rather go beyond that to integrate economic, social and environmental sustainability... For this reason, we are working with Equalitas to seek a sustainability certification for the whole DOC area. Equalitas offers three levels of certification: at the farm level, for the wine and for the whole district. This allows them to claim that they operate ethically but in the context of the right competitiveness framework (Interview #5).

The Prosecco DOC consortium representative also argued that 'sustainability demands are not the result of buyers asking for it, but of local community protests (see also Visentin and Vallerani, 2018). Producers and cooperatives first did not want to have anything to do with it, but now have understood that something has to be done. But it takes time' (Interview #5). This view is confirmed by interviewees in individual firms, and goes against the grain of previous research that suggested that consumers recognize and valorize sustainability practices in the wine industry in Italy (Bandinelli et al., 2020). A mid-size firm in the DOCG area, for example, reports that they are trying to reduce the number of agro-chemical applications and take care of neighbouring residents. Yet, they still find it very difficult to communicate these issues to the public (Interview #1). Another firm was one of the first to seek SQNPI certification in 2017, in order to address the negative media attention that Prosecco had attracted. They argue that sustainability demands arise from local communities, not from the buyers of their Prosecco (whether in the retail or HoReCa channels), with the exception of some buyers in the Nordic markets and the UK. They appreciate the SQNPI label design, featuring a bee that is easily communicated directly to consumers. This company actually paid all expenses related to the first year of certification to all their contract grape producers (Interview #2).

Representatives of one of the large cooperatives in the Prosecco DOC

area also stated that sustainability is increasingly important. They are now promoting integrated pest management among their members (Interview #7). A large private producer of base wine told us that the cooperatives are actually the ones pushing farmers to improve sustainability on farms through integrated management – something cooperatives can do more easily with their members than private producers who have less institutionalized relations with their grape suppliers. They also warned that 'sustainability is important, but within reasonable limits ... Organic wine costs 20–40% more to produce, yet retailers want to buy at the same price as conventional Prosecco DOC' (Interview #10).

Sustainability also seems to be firmly on the radar of one of the largest bottler/marketers in the Prosecco DOC area (Interview #9). In early 2020, they produced their first organic and vegan certified wine and are now working towards obtaining a sustainability certification. They are also active in recycling paper from wine labels and in exploring the possibility of using the byproducts of wine production to make photovoltaic cells. Along with other companies, they argued that this dedication to sustainability does not come from requests by clients but as a company strategy. 'It is difficult for us to know what the final consumer wants, but we think that they drink what is offered to them' (Interview #9), so they have to make sustainability strides on their own and cannot wait for their buyers to ask.

One of the major producers of organic wine, though, gave us a more critical picture of the situation (Interview #11). He argued that Italian consumers and retailers lack a 'deep culture' of organic agriculture, as the focus is mostly on margins and price – not on quality. As a result, they sell almost all their organic production abroad, especially in 'serious organic' markets such as Germany, Austria and Switzerland. In recent years, this company also started to apply vegan certification because it is in demand. 'Consumers, even if they are not vegan, think that the wine is healthier... It is a joke, but one that pays. Nobody uses animal products these days in the winemaking process. Most wines are vegan by default' (Interview #11).

5.2. The 'Prosecco Hills of Conegliano and Valdobbiadene' UNESCO heritage site

As we have seen in the previous sub-section, the multiple and overlapping conflicts emerging among different social groups, within and outside the Prosecco wine industry, are leading to institutional and individual firm reflections and counter-strategies under the mantle of addressing sustainability. But there has also been another major initiative that seeks to re-shape landscape and territorial marketing and widen the beneficiary groups of the Prosecco 'miracle'. I am referring here to the inscription, in 2019, of the 'Prosecco Hills of Conegliano and Valdobbiadene' as a UNESCO heritage site. The dossier for the candidacy was developed by an ad-hoc association that was originally formed in 2008/9 by the DOCG consortium, the province of Treviso and the local chamber of commerce. It was curated by three consultants and politically supported by the very same Luca Zaia that had facilitated the expansion of the Prosecco DOC area in the late 2000s. Zaia, on the occasion of the award of the UNESCO site, declared that this recognition will 'promote at the international level a microcosm of nature and culture, of rural activities and historical sites that have shaped these hills in ways that are original and unmistakable' (Consorzio Prosecco DOCG, 2019b: 8).

The main features highlighted in the application dossier for UNESCO refer to three landscape elements that are worthy of preservation: (1) a 'mosaic of small vineyards interspersed between wooded areas'; (2) a specific geomorphological formation called hogback; and (3) peculiar grass edges (*ciglioni* in Italian) that climb the very steep hills (at between 15 and 60°), which are thought to have been used since the 17th century (Consorzio Prosecco DOCG, 2019b: 9–10, 15). The UNESCO site is divided into three zones: a core zone that delimits the actual site; a buffer zone that is also characterized by hills and vineyards, but with

²³ The Equalitas standard includes integrated production management, which is focused on minimizing the application of agro-chemicals and on rationalizing fertilizer use, good communication with stakeholders and communities, good practices within firms and with their suppliers, and measures against labour exploitation on farms. Once 60% of area under production is monitored this way, the DOC Prosecco consortium will be able to seek the sustainability certification of the whole DOC district (see <https://www.equalitas.it/en/>).

lower inclines; and a commitment zone, which is not hilly but where the same regulations as in the other two areas are used to safeguard the landscape, especially that related to viticulture (Consorzio Prosecco DOCG, 2019b: 11) (see Map 2).

The text of the UNESCO final decision on the inscription of the site is based on three principles: (1) the *authenticity* of claims that these practices have been developed in time in the area; (2) the *integrity* of the landscape that viticultural techniques have been able to maintain (including manual harvesting) – this integrity is seen to be in need of further safeguarding because of novel pressures arising from increasing demand for Prosecco wine; and (3) an adequate *regulatory framework* that ensures the safeguard of rural landscape, especially those embedded in the viti-viniculture protocol of the DOCG consortium; these rules seek to maintain vineyards and hedges to ensure the continuation of local traditions and to safeguard biodiversity and associated ecosystem services (Consorzio Prosecco DOCG, 2019b: 12–13).

This process is part of a larger movement in the wine sector and other rural industries to functionally leverage ‘traditional cultural landscapes’ (Torquati et al., 2015) in view of (re)creating and (re)distributing surplus value (see also Thomsen, 2018). Although some of the principles listed above sit quite uneasily against the expansion of viticulture in the DOCG area, the inscription of the UNESCO heritage site should actually been seen as an attempt to reflect on existing conflicts.

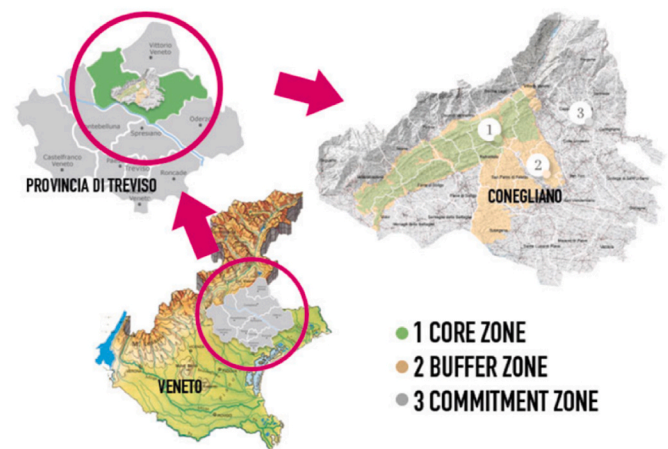
‘Viticulturists are seen as serial polluters by local communities ... There is envy in the local community because Prosecco producers have made a lot of money, therefore the perception is that they are usurpers and exploiters’ (Interview #2).

‘[The UNESCO initiative] is part of a social sustainability effort, in view of attracting wine tourists and promote a larger portfolio of products and services in the area, so that instead of just wine industry operators making money the beneficiary base can be broadened’ (Interview #4).

The UNESCO inscription should also be seen as promoting alternative ideas of how Prosecco creates value beyond the social realm of producers and industry actors – through a remodulation of landscape and territory. But because it adds other elements to value creation processes (other types of products, eno/eco-tourism) without substantially altering the core causes of existing conflicts, it allows ignoring their key drivers – such as viticultural sprawl, the consumption of nature, soil erosion and the reshaping of property prices. Finally, the romanticization of vineyards to defend the authenticity and integrity of traditional cultural landscape clashes with the dominant monoculture approach to viticulture and its progressive domination of land use. It also allows to continue hiding the environmental, health and other costs of Prosecco production.

6. Conclusion

The various layers of hidden costs and resultant conflicts highlighted in this article suggest that many important factors shaping the dynamics of global value chains actually happen at the local level in production districts – contrary to what argued in much of the literature (Ponte et al., 2019). Thus, identifying the local environmental, health and other hidden costs can highlight important zones of conflict and provide a nuanced understanding of how value chains operate (Bair and Werner, 2011a; Quentin and Campling, 2018; Dauvergne, 2020; LeBaron and Lister, 2021). In the case of Prosecco, these hidden costs have led to a number of conflicts: (1) between area expansion and environmental degradation (between capital and nature); (2) between wine operators and institutions and non-industry local residents (between insiders and



Map 2. Location of the UNESCO site ‘Prosecco Hills of Conegliano and Valdobbiadene’.

Source: <https://www.italiaatavola.net/tendenze-mercato/vino-beverage/2019/7/7/colline-del-prosecco-sono-patrimonio-unesco/61729/>

outsiders); (3) between the Prosecco the wine and Prosecco the village (between core and periphery); and (4) between boutique and large industrial producers (between quality and volume, between small and big actors).

Corrective actions to address these conflicts have ensued, such as regulatory changes at the regional and local levels, various sustainability initiatives, the development of new production guidelines by consortia, and the promotion of local tourism to expand the basket of potential beneficiaries of the Prosecco ‘miracle’. A key factor in stimulating these changes have been local citizen committees and their protests, rather than demands by global buyers or supermarket chains (Visentin and Vallerani, 2018). But many of these responses are actually still based on hiding the core causes of conflicts – for example, by reconstructing the origins of Prosecco to erase other histories, or by concealing the ‘viti-culture sprawl’ that is changing the landscape (Basso and Vettoretto, 2020).

These observations provide new insights on the everyday practices and conflicts behind the creation and appropriation of value (Neilson and Pritchard, 2011; Nickow, 2015), and on how nature-society relations secure agro-food production and shape processes of inclusion and exclusion in value chains (Bair and Werner, 2011a; 2011b; Bair et al., 2013; Werner, 2016). Ultimately, the case study of Prosecco confirms that in many cases production growth is linked to frontier expansion (Moore, 2015), to processes of appropriation of nature, landscapes and territories, and to the ability of business to capture surplus by hiding and externalizing the health and environmental costs production (Baglioni and Campling, 2017; Havice and Campling, 2017).

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Appendix. Overview of interviews

#	Date	Position	Type of actor	interview
1	20 Oct 20	General manager and owner	Integrated producer	in person
		Marketing director	Integrated producer	in person
2	20 Oct 20	General manager and owner	Integrated producer	in person
3	20 Oct 20	Professor	Research centre	in person
4	20 Oct 20	President	Consortium	in person
		Communications officer	Consortium	in person
5	26 Oct 20	President	Consortium	online
		Director	Consortium	online
		Officer	Consortium	online
6	16 Nov 20	General secretary	Farm workers union	online
		Former secretary	Farm workers union	online
		Officer	Farm workers union	online
7	22 Jan 21	General manager	Cooperative	online
		Production manager	Cooperative	online
		Manager of exports and marketing	Cooperative	online
8	22 Jan 21	Officer	Sustainability certification system	online
9	23 Jan 21	General manager	Bottler/marketer	online
		Marketing manager	Bottler/marketer	online
10	29 Jan 21	General manager and owner	Base wine producer	online
11	29 Jan 21	General manager and owner	integrated producer (organic)	online
		Marketing manager	integrated producer (organic)	online
12	12 Feb 21	President	Consortium	online
13	19 Feb 21	General manager and owner	Integrated producer	online

Note: Integrated producer = producing/sourcing grapes; producing base wine; carrying out sparkling and bottling operations.

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