Received: 15 May 2020 | Accepted: 24 February 2021

DOI: 10.1111/soru.12340

Sociologia Ruralis Journal of the European Society for Rural Sociology

ESRS

ORIGINAL ARTICLE

Food quality in a post-industrial economy: Alternatives to the crisis of the Spanish agricultural sector

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Funding information
Ministry of Science and Innovation, Grant/Award Number: CSO2017-85188-R

Abstract

The Spanish agricultural sector crisis is intimately related to the weak position of local producers in the value chain. In order to analyse this issue, we will use a model that describes the post-industrial economy value creation process, and the role played by immaterial resources as a structural variable in that process. Collective strategies, like the creation of product designations of origin or the constitution of producers' organizations, are meant to halt resource rent appropriations by economic actors at the value chain's most concentrated stages. However, they have not performed well, thus giving rise to a debate on new models for the social construction of food quality. Despite their differences, the two cases analysed herein show the need to qualitatively transform the mediators of that social construction, taking into account the economic and institutional context of Spanish rural areas.

KEYWORDS
designations of origin, post-industrial economy, quality, value

INTRODUCTION

Before the onset of the Covid-19 crisis, many highways and roads in Spain were repeatedly blocked by small farmers. These Spanish agricultural sector protests were motivated

by the drop in agricultural income experienced in recent years (Ministerio de Agricultura, Pesca y Alimentación, 2019), caused by a decline in source prices of many agri-food products (Pérez Mesa et al., 2019). This slide in prices is intimately related to asymmetric relationships found in different products' value chains, where large commercial distribution companies have formidable market power (Vorley, 2003). Over the last few decades, various alternatives developed for the purpose of solving this problem, such as quality schemes and cooperative organizations, have not had the desired effect (Meloni & Swinnen, 2018). Quite to the contrary, most of these initiatives have experienced profound crisis since the Great Recession.

In this study, we will analyse the main deficiencies in collective agri-food quality management in recent decades, and study two cases related to the two abovementioned types of collective strategies. The first case, being that of the León Designation of Origin for wines produced in the province of León (Castilla y León, Spain), refers to a process of collective quality management based on a recently granted (2007) quality certificate. The second case refers to a centuries-old collective organization of local producers that manages the artisanal exploitation of shellfish grown in a Galician estuary (Carril). The comparative analysis of these two cases is interesting not only because they represent different strategies of collective organization, but also because of how those strategies relate to the different processes of social construction of food quality developed in each territory. Carril was initially a successful case. It started with an excellent reputation and wide-spread renown for the product's quality. However, it lacked a geographical indication that could protect these initially strong ties with consumers. In contrast, reputation and recognition in León were initially quite limited, and mostly restricted to local markets. On the other hand, Leonese wines were backed by a quality certificate.

In order to carry out the analysis, we will follow a value creation model for post-industrial economies (Rullani, 2004a). In this type of economy, immaterial resources have a structural role in production activity valorization processes (Macías Vázquez & Alonso González, 2016). In post-industrial economies, fostering ways of life and social relationships becomes the basis for creating added value, and immaterial work takes on a strategic role. Thus, production ceases to be understood as the mere implementation of a technological input to achieve a specific output, and is increasingly associated with a product's cultural content (Sennet, 2008; Appadurai, 2016; Callon et al., 2002). Consumption also contributes to value creation, as needs are not pre-established, and a wide-ranging possibilities resulting from imagination, communication and cooperation are considered. The consumer's identity is no longer the outcome of individual rational decision making, but rather of collective practices in which social circumstances and cultural patterns converge (Warde, 2017). In parallel, consumers stop correlating quality and food security, and associate the former with exclusivity, authenticity and local production (Harvey et al., 2004). As a result, consumers are willing to pay a higher price for those traditional products that are more clearly associated with certain values and meanings, from the protection of the environment and local communities, to the promotion of social justice and gender equality (Comaroff & Comaroff, 2009; Callon, Méadel and Rabeharisoa, 2012).

With the development of this type of economy, it becomes necessary to identify, explore and analyse new forms of social innovation in rural areas to reinforce the agency of local producers throughout the value chain, as well as alternatives aimed at socially constructing the quality and geographical identity of food by incorporating a more complex interaction between the spheres of production and consumption into the analysis (Grunert et al., 2014; Hansen & Thomsen, 2018), as well as between the material and immaterial dimensions of product valorization processes on a territorial scale (Belletti et al., 2017; Pasquinelli, 2008).

Our objective is to analyse the main deficiencies in mediation between consumers and producers, with the intention of contributing towards the moderation and ultimate halting of appropriation—by the actors at the most concentrated stages of the value chain, such as intermediaries and large commercial distribution companies—of the value created by the different combinations of material and immaterial resources used in each territory. More specifically, we will inquire into the main difficulties encountered in the collective management of food quality and the extent to which they have contributed to the current process of agri-food economy devaluation, including the impact of those difficulties on sustainable territorial development.

To this end, after presenting the theoretical model, we will apply it to two different case studies in León and Carril. Considering that the two cases concern totally different food quality social construction processes, we will focus on the factors explaining their downturn, as well as the economic and institutional mechanisms that have caused the general Spanish agriculture crisis, and the reasons why the strategies adopted are not producing the desired outcome (or are even counterproductive). In addition to documentary and bibliographical sources, such as press reports, scientific studies and legislative documents, we have used a methodology based mostly on conducting interviews with qualified actors. In view of these actors' specific characteristics, the interviews were structured around the following thematic axes: historical analysis of the territorial development, agricultural and agro-industrial quality improvement processes, value chain analysis, local producer marketing strategies, producer–consumer mediations and an assessment of the institutional context. We have implemented the methodology developed by French pragmatic sociology and the actor–network theory (Latour, 2007) to analyse food quality not as a given, but as a social construction. In this sense, the purpose of the interviews was not to collect objective data, but rather to monitor the actors, particularly their interactions with other actors and the mediations established between them. In Carril, there were 14 interviews conducted: seven with local producers, two with depuration plant managers, two with professional organization representatives (the Agrupación de Productores de Parques de Cultivo de Carril [Carril Shellfish Farmers Association] and the Cofradía de Pescadores y Mariscadores [Fishers and Shellfish Farmers Guild]), two with biologists working for hatcheries, and one with a local canning company executive. We requested an interview with the local representatives of the regional fishing authorities, but this request was declined. In León, 11 interviews were conducted: seven with winery owners, one with the manager of the León Designation of Origin, one with an Instituto de la Viña y el Vino (Vine and Wine Institute) researcher, one with a local journalist specialized in this topic and one with the local authority responsible for the area's economic promotion.

IMMATERIAL RESOURCES AND COGNITIVE MEDIATORS

The valorization process for immaterial resources, such as knowledge, culture, or values, is governed by rules that differ substantially from those that regulate all other production processes (Bertacchini et al., 2012). According to Rullani (2004a), the main characteristic of immaterial resources is a substantive quality: when they are used, they are not consumed; to the contrary, by being available for other uses, they multiply from one use to the next. Immaterial resources contain a potentially infinite stock of useful value, corresponding to all the possible future uses that, through various symbolic interpretations, may be given to them by the different human groups that consume them. The more immaterial resources are spread, the higher their value. Every new use implies a higher degree of usefulness, at little or no reproduction cost. Knowledge, culture, values and immaterial resources in general are enhanced when they are shared and

disseminated (Hardt & Negri, 2009). Rullani developed a model to analyse value creation processes that takes into account the characteristics of these resources. In this model, immaterial resource value creation (E) results from the conjunction of three drivers: consumer capacity to interpret meanings attached to the material production (v); the number of times these meanings are propagated and replicated (n); and local producer capacity to appropriate value created through different property-rights reinforcement mechanisms, such as designations of origin, trademarks, labels, or copyrights (p_i, $0 < p < 1$). This value creation model may be synthesized as follows:

$$E = v \cdot n \cdot p_i$$

In agri-food systems, various strategies are used to valorize products. A very frequent strategy is based on quality certificates and labels, including those referring to designations of origin, ecological agriculture, or fair trade. Producers achieve three objectives through these certificates. First of all, they increase v, because these labels allow consumers to easily identify product quality through a series of objective parameters. Second, they increase n, because the standardized nature of these labels based on abstract coding facilitates products being spread extensively throughout different marketing channels. Finally, the use of these certificates and labels not only makes it possible to valorize the products, but also appropriate rents generated as they grant exclusive legal rights over resource exploitation (Valceschini, 1999).

Nevertheless, the experience over these last few decades has revealed some issues associated with value appropriation obtained through these collective quality management instruments (Sanz Cañada & Macías Vázquez, 2005; Macías Vázquez & Vence Deza, 2013). These issues are closely related to the difficulties that local producers encounter in their attempts to control commercial intermediation processes. In fact, during the recent economic crisis, large supermarkets used products with quality certificates, such as wine and olive oil as loss leaders (Gómez-Limón & Parras Rosa, 2017). This aggressive price reduction policy significantly trimmed local producers' marketing margins (Ministerio de Agricultura, Pesca y Alimentación, 2019), which made it difficult to maintain the cost structure required to ensure food quality and the use of environmentally friendly production practices.

Given this situation, it is important that local communities become more understanding of post-industrial economy valorization processes. Thus, on the one hand, it is important to highlight that geographical indications are based on local immaterial resources that are not easily replicable in other realities. These resources include implicit, informal and practical knowledge; artisanal know-how; contacts, information, cooperation and favour-exchange networks, among others (Elyachar, 2005; Antrosio & Colloredo-Mansfeld, 2015). On the other hand, common immaterial resources can be perceived by other groups, markets or states as 'different', and may therefore be subject to a process of valorization (Kaljonen, 2006). However, economic actors at the most concentrated stages of the value chain (i.e. large commercial chains) usually have a greater capacity to link local food to the desires and values of consumers around the world (West, 2016). The greater capacity of these actors to connect with the global markets is, according to Harvey (2012), intimately related to these companies' rent-seeking activities.

In order to counteract this negative influence, there is a real need to look for management mechanisms in the local sphere. New information and communication technologies have certainly become a powerful mediator in the dissemination of meanings, values and knowledge through networks and long-distance interactions that are not limited to the local sphere. However, in parallel, this greater capacity for cognitive dissemination (n) has made evident a lesser

capacity to appropriate the value created (p_i) through traditional collective action structures, like designations of origin, that are organized on the local scale. In large part, this is because a greater capacity for dissemination implies the need to explore new social contexts and, more specifically, understand the meanings, values and desires behind food consumption practices (which have a direct influence on v).

Under these circumstances, the problem in question can be expressed in general terms as follows: how to transform original knowledge, developed in context α, into connective knowledge that can be reutilized in various contexts β, considering that α and β are different, each with their own specific actors, resources, environments and social relationship networks (Rullani, 2004b). A series of mediators are required, the purpose of which will be to facilitate knowledge integration in such a way that the risk of fragmentation is minimized (Rullani, 2004b). We have schematically classified those mediators, which we have called 'cognitive mediators', into the following categories:

- Systematizers: they assemble the knowledge production of each particular expert within a specific geographical context. They are usually producers' associations, local development associations, district strategic agencies and so on.
- Connectors: they connect the knowledge generated in different contexts. They are mostly networks, platforms, periodic meetings or one-time events.
- Interpreters: they re-contextualize the original knowledge so that it can be used in different contexts to work on consumer desire. They usually take the form of alternative markets, museums, consumers' organizations, health food centres and even travel agents.
- Validators: they act on the uncertainty concerning knowledge validity in different contexts through the encouragement of participation and the development of trusting relationships (participatory guarantee systems), or through the construction of objective indicators (e.g. quality schemes).

ONE DESIGNATION OF ORIGIN, TWO PRODUCTION WORLDS

Dating back to the 10th century, some of the Kingdom of León's earliest documented records mention the importance of vineyards to southern León's economy (Revilla, 2016). Under the auspices of the area's main monasteries, Leonese wines were supplied to most regions of the northern Iberian Peninsula during that period. With the passing of time, wine production declined and was replaced by that of other crops, while other more dynamic wine-producing regions achieved greater visibility. The main characteristic of the Leonese region is the existence of cave-wineries, which are cavities dug into small hills or promontories of clay soil to take advantage of natural slopes and build underground galleries. Despite the long history of Leonese wines, their reputation declined (reduction of v), becoming wines produced for consumption in households without any oenological knowledge with much lower quality than other wines produced in the peninsula's northwest quadrant.

Given the difficulties of revitalizing the area, the creation of the León Designation of Origin (DO) (2007) was an opportunity to put a stop to the area's abandonment of viticulture. According to the data provided by the DO's Regulatory Board, a total of 40 wineries harvest vineyards that cover a total surface area of 3,317 km^2. In contrast with other designations in neighbouring areas, production here is small but growing. In the best years, up to 4,500 t of grapes have been collected. Of the 2.4 million total bottles sold annually, 2.0 million displayed the quality label granted by the

Regulatory Board. Since 2007, vintages have been classified as either 'very good' or 'excellent' (in 2014 and 2015) almost every year.

Most of this project's interviewees pointed to the delay in granting the DO and described it as an important disadvantage, especially when compared with the experience of neighbouring wine designations of origin that have earned a reputation on the market (Rías Baixas, Bierzo, Toro or Ribera de Duero). Among winemakers, some argue that 'the delay is mostly the regional administration's fault; in 1984, there were 80,000 hectares of vineyards and the viticulture tradition was well-known, while now there are only about 2,000 hectares'. In contrast, other winemakers point to endogenous causes: 'Many vineyards produced for self-consumption, and, in contrast with what happened with other designations of origin, families abandoning old vines has hindered foreign wineries from investing in the area and bring prestige to the local wine'. The paradox is that Leonese wines, in addition to a centuries-long history, are much more typical than other better-known wines in the region in terms of both viticulture practices and vinification process.

In other words, despite the objective potential for an increment of *v*, cognitive mediations have failed to translate typicality into notoriety. With regard to viticulture practices, the grape variety *par excellence* of DO León is the *prieto picudo*, which accounts for almost 70% of the vineyard's area. In other more renowned designations of origin, the grape varieties are in fact modifications of a more general and widely used type (as is the case with the *tempranillo* variety). The Leonese variety is truly specific to the area, so much so that it is very hard to find a similar variety anywhere in the world. In addition, it is important to take into account that the properties that this variety lends its wine (acidity, astringency, etc.) are clearly distinguishable for the consumer. As for the vinification process, the *prieto picudo* variety is associated with the persistence of ancestral winemaking techniques, which confer uniqueness to these wines within the Spanish wine context. In particular, the *madreo*[1] technique produces rosé wines with a peculiar sparkling quality, especially in young wines, which is again perfectly recognizable to consumers.

Given the lack of capacity to increase *v*, Leonese wines' main challenge is the minimal added value created by such typical and singular production. Thus, while the average price of wine in the Castilla y León region is around 107 EUR/hl, the price in the province of León is set at around 52 EUR/hl (Consejería de Agricultura y Ganadería, 2017). In fact, the low valuation of these wines starts with the grape harvesting process. As acknowledged by the DO's Regulatory Board, local grapes do not fetch a high price compared with those of other designations of origin. On an average year, 1 kg of grapes is sold at EUR 0.30 to EUR 0.40, which in many cases is not even enough to cover production costs, and puts the use of traditional techniques at stake.

On the other hand, cognitive mediations have also failed in their attempt to increase *n* to compensate Leonese wines' lack of notoriety (*v*). A conservative commercialization strategy is being implemented with the support of Regulatory Board managers, in contrast with the 'commercial revolution' encouraged by other designations of origin (Sanz Cañada & Macías Vázquez, 2005). The DO's commercial policy does not seem to concern anything other than protecting the nearby markets of León and Asturias. In fact, the Regulatory Board's promotion of these wines is quite limited beyond the organization of DO wine fairs in León and Valencia de Don Juan, where attendance includes fewer registered wineries each year. The only actions undertaken on a national level are wine presentations at certain fairs and events geared towards importers, specialized media outlets and the restaurant and hotel industry: Fira Alimentaria (Food Fair) in Barcelona, Feria Gourmet (Gourmet Fair) in Madrid and FENAVIN in Ciudad Real. There are practically no promotional activities that directly address final consumers outside these traditional markets.

Experts from one of the DO area's most dynamic wineries in terms of commercialization and marketing initiatives, Leyenda del Páramo, condemn 'the Regulatory Board's lack of ambition',

and claim 'that the DO scheme is obsolete' and that 'the producers do not benefit from it because the activities associated with the DO are limited to carrying out administrative controls'. For this winery, 'the Regulatory Board's merely administrative quality-control work is behind the times, when markets today, and especially foreign ones, are demanding compliance with much more rigorous parameters for quality wines'. In their opinion, the Regulatory Board 'should focus on the promotion and commercialisation of Leonese wines, enhancing the value of their autochthonous varieties (not only the *prieto picudo*, but also the *albarín* variety)'. An Instituto de la Viña y el Vino (Vine and Wine Institute) researcher interviewed for this study insisted on this aspect and underlined how the absence of a more daring *albarín* wine strategy has prevented them from taking advantage of the young white wine market's expansion. This is in clear contrast with the success of other white grape varieties, such as the *albariño* of DO Rías Baixas (Macías Vázquez & Vence Deza, 2013).

In a promising attempt to increase *v*, Bodegas Margón has chosen to produce terroir wines from vines that are more than 100 years old. The owner is more self-critical in terms of the DO's progress, and argues that 'the wineries in the area are not interested in quality, they do not select the grapes, they mix them all, and it is important that the wineries make an effort to produce high-quality wine'. According to the advice of Raúl Pérez, the man who was selected in 2016 as the best oenologist in the world, grape picking is performed manually and no herbicides are applied to the vineyards (as a result, the old creeping vines look wild). The goal is to make the most natural wine possible, in the sense that it will express the particularities of each plot in all their richness. In fact, Bodegas Margón is implementing a commercial policy based on the bottling of wine by plots (for instance, Valdemuz is made from grapes grown on the oldest vines; Paraje del Santo is produced from grapes picked from several plots with sandy soils; etc.), which has led to the production of very different wines.

However, the managers at Bodegas Margón acknowledge that it is very difficult to raise the bottle price, and that the only solution is to use many of the grapes harvested for the production of lower quality wines that can be sold at lower prices. For instance, we can observe how the Spanish restaurant and hotel industry is failing to play its mediation role as interpreter for the purpose of improving the consumers' perception of those wines (*v*). As DO León winemakers pointed out in the interviews conducted for this research, the issue is that restaurant and hotel managers are looking for wines with trademarks and designations of origin that facilitate stock rotation. Thus, bottles that cost more than EUR 20 are not even included on many restaurants' wine menus (with the exception of wines that already have a solid reputation, such as Rioja or Ribera de Duero).

Bodegas Margón is located in the district of Los Oteros, and their managers are quite pessimistic about the future of this territory. On the one hand, they underline this area's high potential for valorization, which can be considered as one of Spain's best natural wine producers. The vineyards are located at 850 metres above sea level in a hyperventilated area with a pronounced day–night temperature differential that prevents bacteria associated with certain plagues from reproducing and propagating. In fact, the application of phytosanitary treatments is often not required. On the other hand, the managers consider that the lack of major business investment in DO León, as opposed to DOs Ribera del Duero, Rías Baixas, Bierzo or Rioja, has hindered the consolidation of a leadership model that could encourage the territory's development. In their opinion, if this kind of leadership existed, neither the massive uprooting of old vines resulting from plot concentration, nor the sale of plantation rights to wineries with other designations of origin would have taken place. The destruction of the local viticulture patrimony has been so great that it is now quite impossible to imagine that a prestigious foreign winery would invest in the area. Although they

can see that the situation is partly an opportunity for local winemakers, they are also aware of the difficulties associated with activating a process meant to strengthen the reputation of local wines by increasing *v*.

Another competitive option are natural or organic wines. In a pioneering fashion, the Leyenda del Páramo winery has recently been producing an organic wine called El Rescatado that is mainly destined for foreign markets. This winery's competitive strategy consists of converting its vineyards to organic viticulture and exporting 80% of their production (their current export share is 20%). After visiting the ProWine Asia wine fair held in Singapore, the managers of this winery are highly critical of the Spanish DO-based operating model. Together with Pardevalles (which currently exports 40% of its production), this winery is among those that are most actively looking for alternative markets, and produces 14 different wines (white, rosé, red, organic, sweet, sparkling, etc.). However, only five of these wines are certified as DO León. Given their focus on the international market, the DO label is increasingly less relevant for the winery. In their opinion, the rigid DO regulation is becoming an obstacle for competition in the market, especially in foreign countries. For instance, producing sweet or sparkling wines is practically impossible within the DO's regulatory framework.

Leyenda del Páramo or Pardevalles are located in the district of Valdevimbre, which is now the DO's most dynamic area in terms of production and commercial strategies. In both cases, the wineries' attempt to increase *n* and *v* is demonstrated by their participation in international fairs, and in their eagerness to respond to global market consumer preferences. Valdevimbre has evolved differently from Los Oteros thanks to a combination of various material and immaterial drivers of wine production enhancement (gastronomy, wine tourism and historical heritage). Valdevimbre has a series of specific resources with valorization potential that has been quite well managed by certain cognitive mediators (travel agents, restaurant and hotel managers, museums and local authorities) by linking production and consumption, which has resulted in significant increases of *n* and *v*. An important peculiarity of this district, which makes it a unique case, is that its wineries have been located in caves since at least the 16th century (Revilla, 2016). In recent years, these caves have been transformed into restaurants with increasing success. As such, Valdevimbre welcomes an average of 2,000 diners every weekend from major urban centres like Madrid, León and Valladolid. In addition to having lunch or dinner at the cave-restaurants and drinking DO León wines, these visitors participate in wine tourism activities and visit the Museo del Vino (Wine Museum) and the area's wineries, where they buy more bottles of local wine.

As we can see, the Valdevimbre district has opened up a path towards development that is fully connected to the world of wine. This achievement is not the result of the DO being implemented, nor the deliberate actions of its representatives or local authorities. It is neither the product of spontaneous market forces and their competitive logic, nor the mechanical result of adopting new information and communication technologies. In reality, this rural development is the result of a virtuous combination of actions from a long list of cognitive mediators. In the spheres of local knowledge connection, interpretation and systematization, they have made the integration of local producers (from a context α) and consumers (from other contexts β) possible. This integration has been achieved through mediations that are completely different from those used in traditional markets and the modern, large-scale distribution system (Sanz Cañada, 2002). In fact, we can conclude that this is a very singular case within the world of Spanish wine production that is directly related to the value creation processes of post-industrial economies.

WHEN NOBODY WINS BUT THE OUTSIDERS

Carril is a small town located on the Ría de Arousa, a large estuary in Galicia (Spain). Clams produced in Carril have historically enjoyed an esteemed reputation (v) among Spanish consumers without the need for any quality certificate (absence of p_i). The area's traditional forms of exploitation constitute a system based on the artisanal and intensive exploitation of bivalve molluscs in artificial sand banks divided into plots allocated under seasonal concessions to families, some of whom have been working them sustainably for more than 200 years. A total of 1,283 plots are allocated to 656 producers, most of whom belong to the Agrupación de Productores de Parques de Cultivo de Carril (Carril Shellfish Farmers Association), founded in 1999.

These production practices are part of a differentiated production system that does not exist in other shellfish-producing areas. The cultivation techniques, which are similar to those of agriculture, comprise various tasks involving shellfish populations, predators and the surrounding physical environment. Preparing the seafloor by incorporating sand and gravel, and cleaning the area of seaweed, sludge and predators is essential. Some of these practices are also present in free shellfishing, where no specimens are cultivated and output is more closely related to the surface area allocated to the extraction of seafood. However, increasing small-scale aquaculture production requires intensifying output per square metre, which renders adequate seafloor preparation, plot cleaning and collection technique improvements essential.

Carril clams were recognized as such across the national market. In terms of value creation, n has remained at high levels without the need to resort to information and communication technologies. However, given the absence of p_i, various actors are trying to capture the value created by artisanal aquaculturists, causing a gradual decrease in the community's ability to exploit these natural resources in a sustainable way. In fact, the growing pressure from these actors has forced artisanal aquaculturists to intensify production and/or introduce more productive foreign species such as the Japanese clam (*Ruditapes phillippinarum*) to maintain their rent levels. These changes have resulted in the overexploitation of the environment, lower yields, overall marine ecosystem degradation, the stunting of specimens, the appearance of new pathogens and increased production costs. Consequently, the product's loss in quality associated with this intensification implies a decline in v.

Among the actors capturing the value created by local producers are the local depuration companies. These companies are harshly criticized by local producers, who accuse them of unfair competition practices, including the uncontrolled import of foreign shellfish sold as 'Carril clams' at low prices. The farmers' association suspects that 'the depuration companies are replacing autochthonous clams with Portuguese clams in cooperation with the regional authorities', which 'have legalised "dummy" associations and reformed the administrative concessions regulation to curtail farmer control over production and commercialisation processes'.

Again, we can see here how the absence of p_i implies an appropriation of the value created and, on the long term, a reduction of v as a result of the imported product's drop in quality. It also entails an abuse of the market power position, which pushes down the product's purchase price in local fish markets. Moreover, the imported shellfish introduce new pathogens into the marine ecosystem because they are processed in local depuration plants without any sanitary control.

Depuration companies have forged partnerships with regional political powers so that legislation consolidates their market power to the detriment of local producers. Thus, aquaculturists are prohibited from legally buying cheap clams at the fish auction and putting them in nurseries until prices rise. Instead, they must forcefully purify their production, thereby losing the

TABLE 1 Annual average price of pullet carpet shells at fish markets in the Ría de Arousa, 2009–2020 (EUR/kg)

	2009	2014	2020
Carril	8.7	9.7	16.7
Cambados	12.9	12.8	17.7
Isla de Arousa	12.2	12.1	17.2

Source: Consellería do Mar, Xunta de Galicia (Department of Marine Issues, Regional Government of Galicia).

possibility of increasing profit margins by playing with price differentials. This legislation openly favours depuration companies and other intermediaries, who are the main buyers of fresh shellfish at auctions and often push prices down by acquiring shellfish more cheaply from external supply sources, be it other Galician markets, illegal furtive captures or foreign imports. In their defence, the depuration companies argue that 'the pressure exerted by the wholesalers is very strong' and forces them, in turn, to put pressure on the lower stages of the production chain to maintain profit margins. On the other hand, they affirm that they do not 'receive any special treatment from the regional authorities', 'they are in fact subjected to strict sanitary controls' and they even declare that they 'endure too many inspections'.

In theory, the small-scale production of Carril clams could only supply nearby markets. In a post-industrial economy, the most appropriate strategy to protect highly reputed, small-scale local production would be for the local community to close off the scarce material resource (in order to increase p_i), while the increment in v would rely on the collective management of the immaterial resources connecting the resource with a specific group of consumers—often those with high purchasing power. However, the regional government is neither supporting nor promoting this legislative initiative. As such, during peak season around Christmas time, most clams in Spain are sold as 'Carril clams', something unfeasible without foreign shellfish imports and the addition of other national sources.

These factors have led to a gradual decrease in the ability of local producers to create and appropriate value. This becomes apparent when comparing the autochthonous clam (*Venerupis pullastra*, pullet carpet shell) price differentials between the Carril fish auction and those of other towns sharing the same marine ecosystem (Table 1). This negative Carril auction price differential is striking because the final consumer is paying a much higher price for a product actually called 'Carril clam'. Those benefitting from this increase in profit margins are the actors engaged in local rent-seeking, including neighbouring fish markets, depuration companies, wholesale importers and other intermediaries. However, this devastating logic can end up damaging these actors as well. This is already evidenced by the local depuration companies' ongoing crisis. Firstly, this is due to the prolonged economic crisis in Spain, which has lowered the demand for shellfish (the current Covid-19 crisis has aggravated the situation) and led to a considerable and overall fall in its prices. Secondly, wholesale traders have effectively appropriated the value of Carril clams. In fact, distribution centres in large cities are marketing molluscs from different origins at a larger scale, and selling them as 'Carril clams'. Most clam imports (especially from Portugal and Italy) that were previously purified in Carril are now purified at their source and sent directly to wholesale traders in distribution centres—who, yet again, sell them as 'Carril clams'.

At the same time, this predatory logic is being consolidated by changes in legislation. On the one hand, the expansion of industrial aquaculture is now allowed directly on the coastline and in protected natural areas (belonging to the Natura 2000 network), and the concessions have been granted to two transnational corporations (Stolt Sea Farm and Pescanova). Despite social

mobilization against the 'plastic fish' industry, the connivance of the regional administration and the transnational aquaculture lobby is complete. The head of the regional Department of Marine Issues travelled to Brussels to press for changing the subsidy provision criteria established in the new European fishing policy. Rather than supporting small local shellfish and other aquaculture initiatives being granted subsidies, the regional government attempted to keep this political reform from passing so that large transnational aquaculture corporations would continue to benefit.[2] On the other hand, Galician members of the European Parliament representing the European political party, where the Partido Popular (which governs Galicia) is integrated, submitted a proposal to avoid indicating product origin when labelling canned fish and shellfish produced in Europe. Had this measure been approved, local immaterial resource rent appropriation would have been intensified, favouring devaluation through lower-quality foreign production imports, among other practices.

Overall, this confluence of pressure on local producers has forced them to intensify their activities, putting the territory's sustainable development at stake. First, the downward pressure on prices has led to increased farming density. While natural shellfish banks have a yield of 0.5 kg/m^2, Carril farming plots provide 10–12 kg/m^2. These extractive levels are criticized by marine biologists who argue that the yield should be 4.5 kg/m^2 (Cerviño Otero, 2012). High farming densities reduce shellfish size and meat content, and can have disastrous effects on the spreading of diseases: during the last cockle campaigns, mortality has approached 100%. In addition, cheap foreign mollusc imports that have brought new pathogens to the area, and poached shellfish extraction from highly polluted areas of the estuary that can lead to sanitary risks not mitigated by purification are also deteriorating product quality. In fact, poaching is one of the main threats to the immaterial value of the local production and could entail a reduction of v because public opinion is highly sensitive to food crises caused by toxicity problems.

DISCUSSION AND CONCLUSIONS

Local producer weakness within the value chain is the fundamental cause of the Spanish agricultural crisis. Through the cases analysed, we aimed to gain a deeper understanding of the reasons for this weakness and the failure of the strategies developed to face it.

As observed in Table 2, following Rullani's model, a comparative analysis of the value creation processes in León and Carril reveals that the starting point was radically different in each case.

In the past decades, the establishment of a DO was expected to improve the farmer's position. However, we may conclude from the analysis that food valorization in a post-industrial economy necessarily demands more complex management (Pasquinelli, 2008). Thus, an excessively rigid scheme of local rent-seeking (p_i) may have very negative consequences on the capacity for the common immaterial resources' dissemination (n) and the potential increment of v. In León, the DO regulation regarding the conditions under which quality should be managed is too rigid for the changing tastes of global consumers, and thus hinders an increase of v. Some wineries, such as Leyenda del Páramo, have been forced to launch new products without having a geographical indication. On the other hand, the DO has very limited commercial promotion activity, and is focused on traditional markets. There is a paradox in the fact that, while wineries have stopped attending the events organized by the DO, they are willingly participating in other commercial events with the objective of increasing n.

These problems are not only related to local producers' lack of understanding of the post-industrial economy value creation process, but they also encourage the opportunistic behaviour of

TABLE 2 Comparative analysis of the creation of value in Carril and León

	Carril	León
Consumers' interpretation capacity (v)	Initially high, with a tendency to decrease, due to a decline in quality of the product caused by crop intensification (reduction in size, sanitary crises), poaching and fraudulent imports	Initially low, with a tendency to stagnate, due to the failure of various initiatives to improve it (Margón), and the poor performance of the mediators with an interpretative role (restaurant and hotel industry)
Dissemination capacity (n)	Initially high, and maintained at that level over time, despite the fact that much foreign production is presented as 'Carril clams' by the most powerful actors in the value chain (depuration firms and wholesalers)	Initially low, with a tendency to stagnate provoked by the DO, despite a successful collective management linked with wine tourism, the appreciation of the winemaking heritage (Valdevimbre) and promising experiences with organic wines and exports (Leyenda del Páramo y Pardevalles)
Capacity for local appropriation of the value created (p_i)	Absence of legal instruments to protect the rents, predatory dynamic of the most powerful actors in the value chain (including industrial aquaculture) and negative influence of the regional authorities	Existence of a DO since 2007 working under a rigid scheme to increase v and n

Source: Own elaboration.

other agents involved in the value chain. In Léon, local actors are perfectly aware that they need to legally protect their rent and advance the development of new commercialization channels. They may have an outdated view of those transformations, they may feel lost in the whirlpool of accelerated changes affecting the global markets, but they are willing to experiment and correct their mistakes along the way.

In Carril, the predatory dynamic of the depuration companies, wholesalers and/or transnational aquaculture corporations is not only fuelled by the weakness of local producers, but also by explicit support from regional authorities. This support is probably justified by the modernizing logic of rural development. In other words, it is based on the idea that local producers are a backward, inefficient group, while transnational corporations and wholesalers are modern and efficient and capable of firmly fostering the production activity. However, these modern actors are not the ones creating value in post-industrial economies based on the management of common immaterial resources. In fact, they appropriate the value created by resources that have been historically produced by local communities (Hanlon, 2014). Consequently, as analysed in Carril's case, the predatory dynamic promoted by the regional authorities results in a no-win situation. Environmental issues, crop intensification and the proliferation of plagues caused by the fraudulent shellfish imports are causing such decline in product quality that the reduction of v can already be felt in all stages of the value chain and not only among local actors, who in principle should be the ones most harmed by the absence of legal instruments to protect their rent.

In summary, it is necessary to understand the rural environment as a complex combination of production processes, power relations, representations, discourses and institutional networks (Cloke, 2006; Dewsbury, 2003). In the two cases analysed, we have confirmed that several configurations of knowledge, power and value distribution define the ways in which extra-territorial and local actors interact. Following the literature on cultural political economy (Jessop & Oosterlynck, 2008; Sayer, 2001), we believe that, in order to understand contemporary societies, it is essential to combine the interest of classical political economy in issues of value, exchange, distribution and power in the rural environment (Jones, 2008) with elements of the cultural shift focused on the social construction of values, knowledge and culture (Cloke, 1997) and their connection with state apparatuses and the 'cultural circuits of capital' described by Thrift (2005). Likewise, it would be interesting to critically reflect on Ray's 'culture economy approach' (1998) to rural development, which is based on an 'entrepreneurial' conception according to which all territories have economic opportunities because they all have cultural particularities that can be valorized on the market, including their languages, know-how, heritage, landscapes and traditional cuisines.

In the Spanish agricultural sector, there have been some successful experiences in terms of food quality, which have led to local producers occupying a better position within the value chain. For instance, Carril could initially be considered a successful case. However, our intention with this study was to underline its vulnerability and precarious nature. In fact, the downturn is also affecting other production, the food quality of which has been widely acknowledged (v), disseminated (n) and protected (p_1), as is the case of Iberian ham (Del Arco Fernández, 2017). It is a general trend that, in addition to evidencing the exhaustion of the food quality organization model (as in León), reveals the impact of a problematic economic and institutional context.

In Spain, failures in rural development experiences are often re-signified as successes, which ends up reinforcing the opportunist behaviours analysed before. Real social problems are not taken into account and modernization is expected to solve them automatically. It is impossible to understand this evolution without taking into consideration that the greater commercialization of rural areas has come together with the strengthening of networks of patronage, producing a specific type of economic and institutional structure: 'corporate neo-liberalism' (Alonso González & Macías Vázquez, 2014). In the last few decades, the neo-liberal rhetoric of entrepreneurship and competitiveness has not had a real and positive effect on Spanish rural areas. This rhetoric does not intend to create value for the common good, but to legitimize the corporate capture of the value created by other actors, resulting in a general decline of food quality and a no-win situation.

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ENDNOTES

[1] The DO's specifications specify that the *madreo* technique consists of the winemaker's or oenologist's adding of whole, perfectly healthy bunches of *prieto picudo* grapes to the tanks of rosé wine during fermentation. The number of bunches added must account for between 5% and 10% of the capacity of the tank where the fermentation takes place.

[2] *Galicia Confidencial*, July 9th, 2014.

ACKNOWLEDGMENT

Ministry of Science and Innovation. Ref. CSO2017-85188-R.

Open access funding provided by IReL.

CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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How to cite this article: Macías Vázquez, A. (2021). Food quality in a post-industrial economy: Alternatives to the crisis of the Spanish agricultural sector. *Sociologia Ruralis*, 61, 623–637. https://doi.org/10.1111/soru.12340