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THE RELATIONSHIP BETWEEN SOCIAL CAPITAL AND GEOGRAPHICAL INDICATIONS. A COMPARATIVE CASE STUDY OF PROSCIUTTO VENETO BERICO EUGANEO PDO (ITALY) AND JAMÓN DE TREVÉLEZ PGI (SPAIN)

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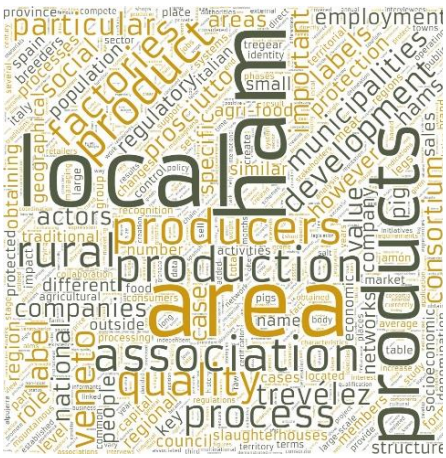

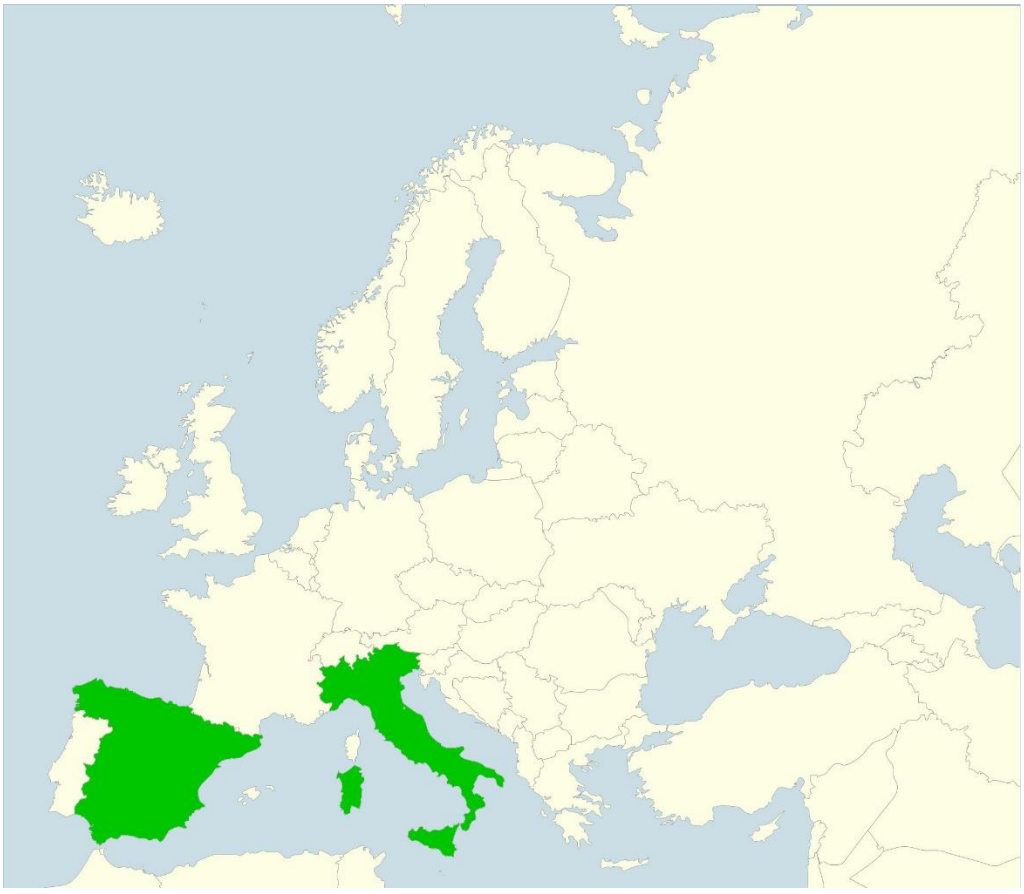

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Abstract: This study compares two EU quality-label schemes in Italy and Spain: *Prosciutto Veneto Berico Euganeo PDO* and *Jamón de Trevélez PGI*, respectively. It aims to demonstrate that social capital plays an important role in both establishing and managing geographical indications (GIs), and that obtaining this label reinforces existing networks, so boosting rural development. The research is based on semi-structured interviews with 7 key informants, the analysis of institutional information and legislation, and of statistical data on the socioeconomic structure of both geographical areas. The research reveals two quite different experiences in obtaining EU quality labels, regardless of the fact that the products, places and people involved in this process have various aspects in common. This study illustrates how the advantages resulting from these high-quality labels and their impact on rural development can vary in relation to the level of social capital and the strength of local networks.

Keywords: geographical indications, social capital, rural development, Veneto ham, Trevélez ham

Highlights:

- Social capital and local networks do matter in obtaining and managing meat-based GIs.
- GI labels can have a pronounced socioeconomic impact on rural territories and serve as a co-branding and storytelling tool.
- The existence of an ad-hoc entity operating at the meso-level is essential for balancing economic and territorial interests.

1. Introduction

The EU has various commercial and legal instruments in the form of agri-food quality schemes (Albuquerque et al., 2018), which help fulfil one of the broader long-term objectives of the Common Agricultural Policy (CAP), i.e., fostering the competitiveness of agriculture and forestry, a crucial factor in the sustainable socioeconomic development of rural areas. This policy is enacted through Regulation (EU) No. 1151/2012 (or "quality package"), which defines among others Geographical Indications (hereinafter GIs).

Currently, there are two types of GI which differ in terms of their degree of territorial embeddedness: Protected Designations of Origin (PDOs) and Protected Geographical Indications (PGIs). For PDOs, products must have quality or characteristics essentially due to the local area, whereas for PGIs, products have a specific quality or reputation attributable to the local area (Regulation 1151/2012: Article 5). Both labels protect GI products against imitation and misuse of tradenames, thanks to the existence of strict controls and Product Specifications (PS) regulating the traditional[3] food production processes with which these quality schemes are often associated.

As of December 31, 2021, 1,378 food products were registered as PDOs and PGIs in the EU, and this number is constantly increasing. Italy is the leader in the EU, with 312 food GIs, followed by France with 258, and Spain with 199 (ISMEA Qualivita. 2022). These numbers demonstrate a growing interest in GIs and a recognition of their importance, especially in Southern Europe.

In their defence of traditional products, GIs go beyond just protecting them against brand misuse, and contribute to the conservation and promotion of traditional knowledge among local communities (Sautier et al. (2011). In particular, GIs can play a crucial role in supporting rural development (Belletti et al., 2017): leveraging wider socioeconomic aspects within marginal rural communities (e.g., population growth and

[3] EU Regulation 1151/2012 establishes a threshold for 'traditional' as the proven usage on the domestic market for a period that allows transmission between generations, of at least 30 years (Art. 3).

economic reorganization, see Crescenzi et al., 2022); strengthening social cohesion (e.g., local living standards and identities, see Tregear et al., 2007); landscape protection (Flinzberger et al., 2022) and environmental stewardship (Belletti et al., 2015). However, the specific impact of GIs on rural development can be difficult to estimate (Vakoufaris, 2010) and is beyond the scope of this study.

By establishing a connection between the product and the name of a certain geographical region, GIs can generate value-added and support farmers' income (Dogan&Gokoval, 2012; Cei et al., 2018), as these labels can only be granted to products whose name, reputation and quality are intrinsically linked to a specific *terroir*, i.e., a delimited geographic area, with specific physical (e.g., elevation, soil, moisture and sunlight), and sociocultural characteristics (e.g., landscapes, local know-how and social structures) (Vaudour et al., 2015; Lamarque and Lambin, 2015).

Given that GIs are protected as collective intellectual property, they also often rely on cultural and social capital (SC) (Kokthi et al., 2021; Török et al., 2022), encompassing local economic and cultural networks (Bourdieu, 1980). However, what role does social capital (SC) play in obtaining and managing GI labels?

In order to answer this question, we compare two case studies in Italy and Spain: *Prosciutto Veneto Berico Euganeo* PDO (hereinafter PV) and *Jamón de Trevélez* PGI (hereinafter JT), respectively. This research intends to show the importance of SC in the obtaining and subsequent management of GI labels (Arfini & Mancini, 2018; Enthoven & Van den Broeck 2021). Although the products are similar, the contexts, actors, and processes followed to obtain the quality label are quite different, as are the associated advantages, which is why a comparative study of this kind is important.

The paper is structured as follows: Section 2 presents a review of the literature and defines a theoretical framework for the concept of SC to be used in this paper; Section 3 describes the adopted method, the data collection procedure and the analysis of the data; the results about PV and JT are presented in Sections 4 and 5, respectively. Section 6 discusses the results and provides some policy recommendations and Section 7 presents the conclusions.

2. Social capital and local food systems

There is a great deal of rich, varied literature on SC. However, its exact definition still remains a question for debate (Giovannetti et al., 2021) due to the ambiguity of the concept, so hinders multidisciplinary dialogue (Grootaert and Van Bastelaer, 2002). The main contributions to this debate can be divided into two main strands: structuralist and culturalist (i.e., cognitive) (Valentinov, 2004; Grootaert and Van Bastelaer, 2002; Saz-Gil et al., 2021). According to the former, SC is a sort of "resource" built on consolidated roles, social networks, and other social structures; according to the latter, it is a set of collective cognitive "resources", such as shared norms, values, trust, attitudes, and beliefs. However, neither of these strands defines the real "nature" of SC. This can lead to problems when using the indicators designed to measure it.

Given the aforementioned issues, in order to address SC properly, a change of perspective is required. It is necessary to set aside the definitions that view SC as an existing resource and focus instead on those that view SC as a "set of rights and duties on non-private assets that *generate* the resource itself" (Giovannetti et al., 2021: 4). It may also be argued that new investments in SC could be linked with collective decisions, for example, to implement a quality system covering the whole production chain, or to change the rules governing the sale of a particular product. In addition, Kothi et al. (2021) pointed out the need for a pre-existing sense of trust within the community and a shared narrative, as a social capital asset to foster GIs, and local and territorial development. The presence of well-educated actors who are willing to cooperate with each other is another key element for the successful introduction of a GI.

Within the framework of Local Agri-Food Systems (LAFSs), which often have strong roots and a specific identity related to a particular place (Belletti et al., 2012), Short Food Supply Chains (SFSCs) can provide a positive model that meets the new demands of consumers who are increasingly aware of how production processes can affect the environment, while at the same time giving producers a chance to increase their added value (Arfini & Mancini, 2018). Indeed, LAFSs are generally defined as a form of

cultural capital with the potential to leverage wider social and economic benefits to local rural areas (Tregear et al., 2007). Territorial reputation becomes an economic asset due to the particular characteristics of LAFSs, which use a mixture of industrial and artisan production systems. In a similar way, SFSCs give producers a much greater role in the sale and export of their products, so connecting them more directly with consumers (Enthoven & Van den Broeck, 2021). In these processes, GIs maintain, conserve, and improve LAFSs.

Similarly, PDOs – GIs with tighter links to a narrow terroir, and which are mostly sold in local markets – can be considered a form of SFSC. Protected status can help increase the price, preserve the traditional, local features of the product, and provide added value for the local area. It is clear that in comparison with other experiences aimed at enhancing the value of agri-food products, GI certification also requires a pre-existing social structure (e.g., an association or a consortium). Indeed, according to Article 13 of Regulation (EU) No 1151/2012, EU Member States shall designate specific authorities that are responsible for the protection of GIs against the misuse of brand names and fraud. Despite national specificities, it is clear that GI qualification processes can provide an important boost for pre-existing, new and/or future networks and community actions at the local level (Tregear et al., 2007), hence creating positive feedback loops for SC. Moreover, Reviron & Chappuis (2011) noted that successful PGI organizational models share a professional association made up of operators from one level of the supply chain, often the processors of the PGI product, and are piloted by a general assembly of delegates and a board. This assertion coincides with that of Quiñones-Ruiz et al. (2016), who argued that pre-existing producer organizations and the support of local public authorities are critical factors in the GI registration process. These organizations promote co-learning processes among stakeholders and develop collective strategies and initiatives that go beyond registration for the quality scheme.

Indeed, according to Lowe et al. (1995), product qualification is a mechanism for linking local and non-local actors, within the framework of a mixed exogenous/endogenous development model, where local actors can attract external assets from other actors and institutions (Requier-Derjardins et al., 2003). In this sense, and in a bid to closely define the process, Neumeier (2017) systematized the different phases involved in social innovation (SI) process, such as, in our case, the application for a GI quality label: i) Problematization: an initial person or group discover a need and seek a solution; ii) Expression of interest: other actors become involved, seeking further advantages; iii) Delineation and coordination: a new form of collaboration emerges. This sequence was applied by Belliggiano et al. (2018) to explain the process followed when Spanish Segureño lamb obtained the PGI label. For these authors, the organizational changes that took place as a result of this process led to the enhancement of the value and the activation of local assets. They also helped reinforce existing local identities and create new ones. Once the different phases in the GI application process have been systematized in this way, the stages identified by Quiñones-Ruiz et al. (2016) could also be incorporated. These include the conception of and consensus on a GI strategy; reaching an agreement on the PS; the national (and regional) stage of GI-registration (formal procedures); and finally, the stage during which the GI is registered at EU level.

As discussed above, when GIs are viewed as a form of LAFS, social capital can be defined through the products, places, people and process involved in these systems, as follows:

- Products. Thanks to the GI labels, farmers' and producers' incomes increase, so encouraging people to settle in rural areas and limiting depopulation. As Tregear et al. (2007, 13) stated: "qualification labels allow firms to capture the added value or economic rent derived from consumer confidence in the good reputation of a firm or producer group, via the controls they impose on product quality".
- Places. The geographic and socioeconomic context is perceived as an asset covering: the physical environment (e.g., landscapes, altitude), culture (e.g., tradition, heritage, local identity, techniques, know-how, history), and the local economy (e.g., skilled employment) (Tregear et al., 2007).
- People. GI application processes are often associated with the involvement of numerous internal and external actors (local area and agri-food system), who agree to comply with pre-determined

codes of practice, with a strong producer network (Tregear et al., 2007), and different levels of involvement in the innovation network (Esparcia, 2014).

- Process. Obtaining the label protects the reputational value of the regional food product, preventing competitors from usurping it (Tregear et al., 2007). When analysing the process, the three phases proposed by Neumeier (2017) – problematization, expression of interest, and delineation and coordination – were explored.

3. Method

This study is based on the comparative analysis of two case studies of meat products (ham) in Italy and Spain, both of which are protected under a GI scheme. To this end, we analysed a PDO in Italy (obtained in 1996), and a PGI in Spain (obtained in 2005). The two cases share similar traits: both are characterised by a narrow terroir (covering 15 and 8 municipalities, respectively) and represent niche products, tightly linked to local expertise. To the authors' best knowledge, no previous scientific research has been done on these products.

The research is based on semi-structured interviews with 7 key informants. In the case of JT, four key informants from three local entities were interviewed, while in the case of PV, interviews were held with three key informants (Table 1).

Tab 1. Interview participants. Source: the authors

Interview ID*	Interviewee	Type of entity	Date	Type of interview
IJT01	Manager	Trevélez Ham Consortium	12.04.2022	Video call
IJT02	Manager, producer	Trevélez Ham Association	22.04.2022	Telephone call
IJT03	President	Local Action Group (LAG) Alpujarra de Granada-Sierra	22.04.2022	Video call
IJT04	Manager	Local Action Group (LAG) Alpujarra de Granada-Sierra	13.04.2022	Telephone call
IPV05	Manager	Veneto Ham Consortium	14.04.2022	Face-to-face
IPV06	Employee	Prosciutto factory	14.04.2022	Face-to-face
IPV07	Employee	Prosciutto factory	14.04.2022	Face-to-face

Interview ID: I – Interview; JT – Jamón de Trevélez; PV – Prosciutto Veneto; 01 – ID of the interviewee.

The interviews had various objectives, seeking to find out more about: i) the reasons that led them to apply for the GI label; ii) the organisational structure of the Associations, Consortium and companies concerned, and the key stakeholders; iii) the current role played by the GIs in rural development initiatives in the geographical areas concerned.

The questionnaire-based survey was divided into several different topics: i) the phases of the process to obtain the GI; ii) current aims; iii) stakeholders and networks involved; iv) assets and resources of the initiative; v) innovative and successful components of the GI; vi) involvement of public institutions and public funds; vii) future expectations and forthcoming initiatives; and viii) some indicators of the importance of the experience. The transcripts of the interviews were analysed via thematic analysis.

After completing the surveys, we then analysed the relevant institutional information (websites, statutes etc.) and legislation (e.g., PSs and their amendments), together with statistical data on the socioeconomic structure of the two geographical areas.

The analysis follows the structure suggested by Tregear et al. (2007): context; key actors; qualification process; and qualification and rural development; but with new additions. In particular, the analysis of the two case studies revolves around the four "Ps": products, places, people, and process, involved in obtaining the GI label. The impacts of the GI on rural development trajectories as directly perceived by key informants are also discussed (Tregear et al., 2007).

4. Veneto ham

4.1 The product

PV (also known as *Prosciutto di Montagnana*, after the town in the Veneto Region from which it originates) is matured, dry-cured ham with a long history dating back to ancient times. Pig farming has always been a typical form of farming in Italy and various internationally-renowned hams (such as *San Daniele* ham, *Parma ham*) have traditionally been produced in the northern part of the country. Up until the turn of the 19th century, PV was produced at home by peasant families. This means that the product's identity is inextricably linked to this territory, its traditions and local *savoir-faire* (Consorzio di Tutela del Prosciutto Veneto DOP, 2021). The first modern prosciutto factory – where the processing and aging phases took place – began operating in the area as early as 1837. Later, in the first half of the 20th century, a large number of ham factories opened and thrived.

As regards the general characteristics of the product, it is worth noting that PV is one of the nine Italian hams protected by GI schemes, as either PDOs or PGIs. In comparison with the most famous Italian hams (e.g., San Daniele ham, Parma ham), PV has smaller production and turnover. As of 2020, it had an output of over 900,000 kg and total revenue of € 8.8 million.

The sales channels for PV mainly include large-scale retailers, restaurants, local delicatessens and butcher's shops, local wineries, small supermarkets, fairs, school canteens, as well as direct sales. However, the commercial networks vary greatly between the large producers (hereinafter, prosciutto factories), who rely on large-scale retailers, and the small ones, who normally deal with local shops and ho.re.ca. (Hotels, Restaurants and Cafés). Exports of PV are still quite low for several reasons (a small number of producers, weak product identity as compared to other Italian hams, high logistics costs).

4.2 The place

PV originates in the Po Valley, in the Veneto region (Northern Italy), between the *Berici* mountains and the Euganean Hills. The area is characterised by a specific microclimate – alternating drier and wetter periods throughout the year – ideal for curing ham (Consorzio di Tutela del Prosciutto Veneto DOP, 2021).

The PDO covers the area in which PV is processed, where 10 prosciutto factories are currently operating. This area includes just 15 municipalities, which fall within three different NUTS-3 regions (the provinces of Padova, Vicenza and Verona) within the Veneto Region, and cover a total area of around 355 km^2. The PDO area only covers the processing phase and the pigs used for the production of PV can be reared in a broader area including five of Italy's 21 NUTS-2 regions, most of which are located in the North and Centre of the country: Veneto, Lombardy, Emilia-Romagna, Lazio and Umbria. All pig farms and slaughterhouses must be physically located within these regions. However, not all the pigs from these regions can be used in the production of PV. Indeed, the PS impose numerous limitations regarding pig breeds, size, weight, age and feeding.

According to the PS approved in 1996, all the prosciutto factories, and the facilities for slicing and packaging the product must be located within the boundaries of the 15 municipalities in Veneto. However, as a result of non-minor amendments requested by the producers in 2016, the requirement for boning, cutting, slicing and pre-packaging of the product to take place in the same geographical production area was removed.

As regards the socioeconomic characteristics of these municipalities, they are mostly non-urban, although many of them have a population density of over 150 inhabitants/square km. However, according to the classification provided by the National Strategy for Inner Areas (Strategia Nazionale per le Aree Interne), launched by the Italian Government in 2014 in a bid to help revive remote rural municipalities suffering from chronic depopulation (Barca et al., 2014), most of the PV municipalities could be defined as "inner areas", in that they are located over 20 minute drive from the closest urban pole providing essential services (i.e., a medium-level hospital, the full set of high schools, a medium-level railway station).

If we turn to the local labour market, the manufacturing industry plays an important role, providing around 45% of local employment, according to the last census data (2011). These figures are significantly higher than for the Veneto region as a whole, where manufacturing accounts for 32.1% of jobs. With regard to per capita income, the latest available figures for the area are lower than the regional average. In 2017, the average per capita income in the 15 municipalities involved in the production of Veneto ham was €19,000, as compared to €20,400 in the Veneto Region as a whole.

Tab 2. Long-term changes in population, employment in local companies and utilized agricultural area. Source: Drawn up by the authors on the basis of ISTAT data

	Population		Employment in local companies		Utilized Agricultural Area	
	Δ 1971–2011	Δ 2001–2011	Δ 1971–2011	Δ 2001–2011	Δ 1982–2010	Δ 2000–2010
Municipalities	18%	7%	80%	8%	-3%	-2%
Verona	23%	9%	82%	12%	-7%	-2%
Vicenza	27%	8%	70%	2%	-26%	-17%
Padova	21%	8%	89%	14%	-2%	2%
Veneto	18%	7%	72%	7%	-11%	-5%

If we consider Census data over a longer timespan (1971–2011), comparing the 15 municipalities of the production area of Veneto ham with the provinces they belong to and the Veneto region, interesting differences emerge. Population and employment in local companies have both increased over the period 1971–2011, although the population increase has been slower than in the rest of the provinces. Conversely, the utilized agricultural area has steadily decreased, albeit more slowly than in the other provinces (Table 2).

As regards the level of SC in the municipalities involved in the production area. Despite the difficulties of measuring SC, especially at a territorial level (Glaeser et al., 2000), the results of the empirical analysis carried out by Pagliacci et al. (2020) for Italian municipalities are a valuable source. They rely on four main proxies of SC, each of which are collapsed into a synthetic SC indicator, which is computed as the arithmetic mean of their z-values. The four adopted proxies are: i) the electoral turnout, as measured by the average figure in the latest elections, considering both the 2014 and 2019 European Parliament elections and the 2018 Italian general election to the Chamber of Deputies; ii) the number of volunteers in not-for-profit associations per inhabitant; iii) the number of cooperative agricultural holdings as a percentage of the total number of farms; iv) the number of agricultural holdings with PDO and/or PGI production as a percentage of the total. It is worth highlighting that two of the four proxies are sector-specific for the agricultural and agri-food sectors (Dentoni et al., 2012).

According to the results by Pagliacci et al. (2020), which were computed for each Italian municipality, the 15 municipalities show a lower SC value (0.11, on average) than the regional average (0.22) and than the average for the provinces in which they are located (the only exception being the province of Padova). It is therefore possible to conclude that this area, although it has a higher SC value than the national average, could not be viewed as a hotspot for SC in the Veneto region.

4.3 The people

Fig. 1 shows the main stakeholders included in the PV value chain: pig breeders, slaughterhouses, prosciutto factories.

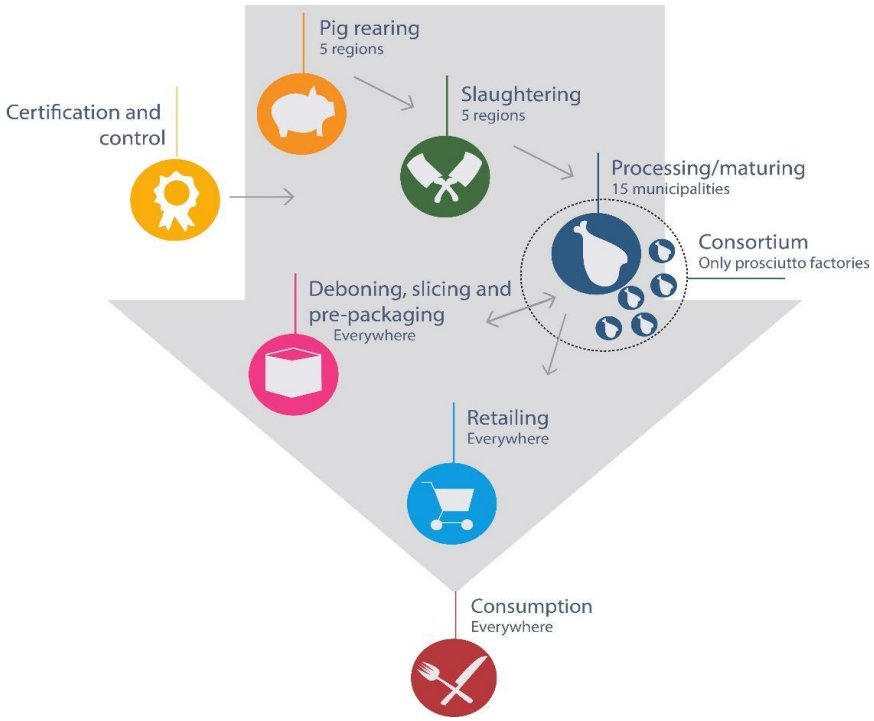

Fig 1. PV value chain. Source: the authors

Pig breeders. They provide raw material for the production of PV. Pig breeders can both be local and external, i.e., located outside the PDO area in one of the above-mentioned regions in Northern and Central Italy (in line with the PS). There are two types of pig breeders: 1) those who breed and fatten pigs and then sell them to slaughterhouses; 2) those who breed and slaughter their pigs.

Slaughterhouses. In the Italian meat system, slaughterhouses have always played a crucial role. Ham producers rarely have direct commercial relations with pig breeders, making slaughterhouses an essential link in the supply chain. This is also true for PV ham. When buying meat from the slaughterhouse, prosciutto factories can specifically order the meat from a particular pig breeder, although this is considered a premium service and is therefore more expensive. Although prosciutto factories could use raw materials from 5 regions in Italy, they often prefer to rely on producers closer to the PDO area. In the Po valley, a relatively small number of large-scale slaughterhouses (managing around 10–15 thousand pigs/week) can cover the demand from the prosciutto factories.

Prosciutto factories. These are the main actors in the processing part of the PV production network. Since the 1980s, the number of certified prosciutto factories has varied, but there have never been more than 14. At present, there are 10 factories, which vary greatly in terms of size and organisational structure. Seven are family-owned prosciutto factories with a potential annual production of around 10–15 thousand legs each. Only one specializes exclusively in PV production, whereas the rest have a diversified range of fresh and matured regional meat products. The other three factories are much larger (i.e., industrial), with the production potential ranging from 150 to 600 thousand legs. Some of them are owned by multinational slaughtering industries. It is important to highlight that most of the historic prosciutto factories used to combine pig-breeding, slaughtering and ham-making. However, with the increase in urbanisation and the socioeconomic changes that have characterised the Veneto region since the 1970s (Bagnasco, 1977), most of the PV producers gave up breeding and slaughtering their own pigs and decided to focus exclusively on ham production. Small-scale family-owned producers rely on slaughterhouses.

Control body. PV ham producers are subject to certification and inspection by a private body called *IFCQ Certificazioni*. Since 1996, all pig farms, slaughterhouses and prosciutto factories are inspected to ensure compliance with the PS, according to ad-hoc control plans. This body is also involved in the certification processes for other similar GIs.

Consortium of producers. The Consortium consists of the ten prosciutto companies certified for the production of PV. These are its only members. Although its main *de-jure* functions are limited to the promotion and protection of the product's brand name, it also acts *de facto* as a sort of hub where producers can reach joint decisions regarding the product, including its protection as a PDO. All members (i.e., prosciutto factories) must pay an annual quota to cover the Consortium's operating costs. The President, who coordinates all the promotional and protection activities, is elected by the managers/owners of the prosciutto factories participating in the Consortium. All significant GI-related decisions (such as those affecting the Consortium's budget, and primary marketing strategies) are decided in regular meetings that are open to all the members.

4.4 The process

Although the first prosciutto factories were established between 1837 and 1927, a key date in the evolution of PV from a homemade ham to a protected brand was 1971 when a Consortium of local producers was founded. The economic growth of these first prosciutto factories was the main premise for its foundation.

Problematization. The major socioeconomic changes that occurred during the period of steady economic growth after the end of WWII (the so-called *Boom Economico* in the 1960s) were the main stimulus behind the move to seek protection for the name. During that period, raw ham became accessible for mass consumption for the first time in history. In order to protect and differentiate a product based on centuries-old traditions, the owners, partners and managers of eight prosciutto factories decided *'to work as a team'* and *'to overcome parochialism'* (Consorzio di Tutela del Prosciutto Veneto *DOP*, 2021: p. 16) by forming a Consortium, which was created under Article 2602 of the Italian Civil Code as *'a legally recognized voluntary aggregation aimed at coordinating and regulating joint initiatives for the performance of specific business activities, by both private and public bodies'*[4]. In other words, ever since it was first established, the Consortium has acted as a sort of voluntary not-for-profit association, whose primary function is to coordinate activities aimed at promoting the common interests of the PV producers. Indeed, the first activities of the Consortium sought to promote the brand by taking part in trade fairs, holding press conferences and producing promotional materials (e.g., brochures, press releases).

Expression of interest. The 1980s were one of the most prosperous periods for the PV, when the Consortium reached its maximum of 14 producers/members. In this context, the Consortium gained another function (qualitative and quantitative control of the typical production of its member companies) with the passing of National Law n. 628/1981 on the norms for the protection of the Prosciutto Veneto-Berico Euganeo DOC (*Denominazione di Origine Protetta* or product of typical origin), although the regulations implementing the law did not come into force until 1988. Thus, prior to achieving recognition as a PDO product in 1996, the PV had been enjoying national protection for almost a decade[5]. In particular, Article 1 of the Regulations specified 23 municipalities as the Veneto ham production area, and 11 regions as the area for the production of raw materials (Art. 6). In theory, this large geographical scope opened the door to a large number of pig breeders and prosciutto factories. However, in the 1980s, some of the less well-structured prosciutto factories were forced to close or were taken over by multinational companies as a result of new national regulations on health and hygiene (GU n. 193/1980).

[4] Art. 2602 Codice civile, Ratio Legis: 'Il consorzio è un istituto giuridico che disciplina un'aggregazione volontaria legalmente riconosciuta volta a coordinare e regolare le iniziative comuni per lo svolgimento di determinate attività di impresa, sia da parte di enti privati che di enti pubblici'.

[5] It is important to highlight that the Italian system for the protection of products of typical origin was introduced back in 1963 with Law nº 930 and was mainly used for wines.

This is how multinational companies got involved in this area. The recognition and protection of the Prosciutto Veneto DOC was supported by the authorities of the Region of Veneto, who were interested in enhancing the identity of the newly established region (in the 1970s) by promoting agri-food products with the Veneto name. This is why PV was given a very long, generic name 'Prosciutto Veneto-Berico Euganeo', instead of its historic territorially-embedded name 'Prosciutto di Montagnana'. According to one of the interviewees, this change complicated the promotion of the brand and created unnecessary confusion among consumers: *'Our ham is called Veneto ham, although originally it was born and known as Montagnana ham. Indeed, people usually call it Montagnana ham. Last year, we did a research, which demonstrated that 48% of consumers still call it Montagnana ham… Actually, we should blame the politics for this error. You can imagine that having three names is too much for a single ham. It is also difficult for the foreign consumer to pronounce. Sometimes they confuse it with Iberico Ham' (i.e., the one from Spain) [IPV05].*

Delineation and coordination. With the passing of EU Regulation n. 1107/1996, PV became one of the first Italian products to be recognised as a PDO. The main reason for obtaining the EU protection was to give *'the brand maximum legal protection'* (Consorzio di Tutela del Prosciutto Veneto DOP, 2021: p. 47). However, the international quality label brought several substantial changes to the local production network for PV ham. One major change involved the reduction in the size of the PV production area to just 15 municipalities. The area from which the pigs could be sourced was also reduced to just 5 regions. As a result of the length of the production cycle and the reduced margins of the PV, by the end of 1990s, almost all the historic prosciutto factories had returned to Italian ownership. Changes in the ownership of some of the prosciutto factories has been a fairly common feature in recent decades: *'Unfortunately, it is a complex sector. As a result, many producers abandoned the Consortia. Almost all of them changed hands. Some of them became part of multinational companies. Some of them are specialized in the production of foreign pork legs'* [IPV05].

The organization and the functions of the managing body are also important. Following the enactment of the EU legislation, Italian Law n. 526/1999 gave the Consortia (*Consorzio di tutela*) an official role as the authorities responsible for the protection, promotion, and general care of the interests of the GIs[6]. However, this new role did not include the 'control' function that they had performed before. According to EU regulations, this role had to be delegated to an independent third party. Therefore, in the case of Veneto ham, the control function was transferred to a private entity *Istituto Nord Est Qualità* (the former name of *IFCQ Certificazioni*), which focuses above all on the control of some of the meat-based GIs in Italy (e.g., Modena ham, Mortadella Bologna). Similarly, the Consortia accounts had to be approved by a Board of accountants and auditors. In recent years, the Consortium has been focusing above all on the protection of the GI label against fraud and misuse, in collaboration with the Central Inspectorate and the *Carabinieri* (Italian Police). The role of the Consortium remains crucial in establishing synergies within the local production network, and outside it, by collaborating with stakeholders from other regions and with actors who are not directly involved in agri-food production (e.g., OriGIn Italia) (Table 3).

[6] Art. 14 Legge 21 dicembre 1999, n. 526 'Disposizioni per l'adempimento di obblighi derivanti dall'appartenenza dell'Italia alle Comunità europee – legge comunitaria 1999'

Tab 3. Actors involved in PV. Adapted from Arfini and Mancini (2018), and Vandecandeaere et al. (2010). Source: The authors

		Agri-food chain	
		Within agri-food system	Outside agri-food system
Territory	Internal/local (located within the ham production area, see Fig.1)	Pig breeders Prosciutto factories and their Consortia Slaughterhouses Local consumers Local retailers and wineries Horeca	Local public administration Strada del Vino Pro Loco Montagnana Progetto Verde di Padova (EU funds)
	External (located outside the ham production area)	Pig breeders and forage producers Large-scale retailers Consumers	Regional policy makers (Veneto Region) Public control body University of Padova (Dafnae) Private control and certification body (IFCQ) Provincial Chambers of Commerce (*Cammere di Comercio*) OriGIin Italia and AICIG – Associazione Italiana Consorzi Indicazioni Geografiche (policy lobbying)

4.5 Impacts on rural development

The recognition of PV as a PDO product resulted in an increase, to some extent, in the attention paid to the production area and various events were organized. Indeed, in 1997, soon after recognition, the Consortium began collaborating with the local Chambers of Commerce. One of the most important results of this collaboration was the 'Prosciutto Veneto Festival', which according to one interviewee is still considered a major local event, attracting a considerable number of visitors to the area every year (around 130–140,000). However, due to the lack of tourist accommodation and infrastructure, these are mainly day trippers [IPV05].

During this event, most of the prosciutto factories organize guided tours. For some of them, these tours are more than just an occasional activity linked to the festival. They have become a tool for product branding, and an additional source of income. Indeed, one of the prosciutto factories has reached agreements with local and foreign tour operators [IPV06]. The development of touristic activities linked to local agri-food production and rural life is particularly important in this post-pandemic period, as a means of providing new income sources for local ham producers.

Another major initiative is *'Strada del vino Colli Euganei'*, a wine route (Arfini et al., 2003) operating in the Euganei hills promoted by an eponymous association. The association is composed of local farms, wineries, artisans, hospitality and catering companies, delicatessens, and travel agencies. The Regional Park, and the municipal and provincial administrations are also members. Despite its wine-specific name, it aims to promote all local products, including food, by creating a sort of twinning between agri-food products and villages: *'The Euganean Hills wine route is perhaps the most active route after the Trentino wine route. We are very happy to collaborate with them. It is a spontaneous but fruitful collaboration. Local wineries have now become important customers for us [IPV07]'.*

All these initiatives are particularly important given the relatively low levels of SC in the area, at least in comparison with other parts of the region. Capitalising on an increased SC can also be a way to enhance tourism activities.

Another important benefit of PDO is that it helps attract EU funds for innovation and collaboration with research bodies. Indeed in 2018, one of the prosciutto factories, some pig breeders and the University of Padova established a partnership, as part of a project funded by the rural development programme, which aims to find innovative managerial and genetic strategies for pig breeding.

In terms of SFSC, there is an important difference between large-scale prosciutto factories relying on large retailers and small ones that use local shops and restaurants as their main sales channel. In addition,

small-scale prosciutto factories normally work with the closest slaughterhouses, so avoiding the higher transportation costs associated with the meat imported from other regions, a possibility permitted by the Product Specifications. For some producers, the use of raw materials from local breeders is a prerequisite for higher quality and authenticity, and is actively plugged in promotional campaigns. In 2016, the restrictions regarding the geographical area for deboning, slicing and packaging of Veneto ham were lifted, allowing this stage of the production process to be conducted anywhere in the world.

5. Trevélez ham

5.1 The product

Jamón de Trevélez (JT) or Trevélez ham is a PGI of matured, dry-cured ham with a long history and tradition in the Alpujarras, a mountainous region in the province of Granada (Spain). It is named after Trevélez, the town where most of the production is centred. The product is closely related to the area, its traditions and local know-how. Historically, in the month of November, the inhabitants of rural and mountainous areas of southern Spain used to celebrate the "matanza" of pigs, a custom in which domestically-reared pigs were slaughtered to provide meat for the long winter months ahead.

JT is obtained from castrated male or female pigs belonging to the landrace, large white and duroc-jersey breeds, which arrive cut up. The fresh hams covered by the PGI must weigh between 11.3 and 13.5 kilos. The only additive used during processing is salt (i.e., the natural traditional preservative).

According to the Regulations of the Specific Denomination Trevélez ham and its Regulatory Council, the process for transforming the pork into ham has two phases: in the first phase, the ham is covered in salt to ensure its conservation in optimum conditions, while the second involves the drying and maturing of the ham during which it acquires its special aromas and flavours due to a biochemical process which, together with the intrinsic properties of the raw material, determines the quality of the end product. This process takes between 14 and 20 months and is carried out in *secaderos*, buildings specially designed for drying hams (González, 2001). The first phase is the salting phase, when the pieces are covered with a layer of salt. After about six months, the salt is washed off with water. The legs of the ham are then covered with a layer of fat, which prevents any unusual flavours from appearing. After that, the legs are hung on strings for the drying process, which takes between 6 and 8 months depending on the temperature. During this period, the hams must lose about 33% of their initial weight.

JT hams have a rounded shape and include both the hoof and rind. When cut, they have a red, shiny colour, with some of the fat infiltrated into the muscle mass. The meat has a delicate flavour, and the fat is buttery, shiny, yellowish white, with a pleasant, slightly salty flavour, and low levels of salt (less than 5%). Each ham receives a quality label from the Regulatory Council. There are three different labels according to the different weights and curing/drying time of the hams: blue (14–17 months, weight 7.4–8 kg); red (17–20 months, weight 8–9 kg); and black (20–24 months, weight over 9 kg) (González, 2015).

JT is one of seven Spanish hams protected with GI schemes, PDO or PGI. There are 5 PDOs and 2 PGI. All of them are situated in rural areas, and one covers an entire province (Teruel). Some specific figures about JT include: a lower price (8.38 €/kg) compared to the Italian ham (9.70€/kg), a turnover of € 12.5 million, and a total annual output of 1,491.5 tonnes. Most of the sales are to Spanish consumers (95%, of the total 185,045 pieces) and the rest is exported, above all to EU countries.

The total annual output of JT comes to about 240,000 legs of ham, and it accounts for over 210 direct jobs (IJT01).

5.2 The place

JT is produced in the Andalusia region of Southern Spain, in the province of Granada, in Las Alpujarras on the southwestern side of the Sierra Nevada mountains. The production phases that must be performed in the PGI area are: salting, washing, post-salting, and drying-maturing. The area has its own particular microclimate, with a great deal of sunshine – alternating cold, wet winters with dry, hot summers –

favouring the cool temperatures and altitude, that develops a specific microbial flora, and the natural curing of the ham. When installing their factories, some producers even choose specific places where the continuous air streams and low humidity enhance the drying process (González, 2015).

The other advantage enjoyed by the PGI area is its altitude, above 1,200 metres, the highest part of the Alpujarras. The PGI covers a total area of 287 km^2 within which all the producers must be located. This area falls within the Sierra Nevada National Park.

The production of cured ham is one of the main business activities in the area, together with tourism (natural and rural). In 2021, the PGI produced 248,000 pieces of ham, with sales of € 16.7 million, providing 210 direct jobs. JT also attracts tourists and visitors to the towns and villages within the PGI, wishing to try the ham and other local cuisine.

There are no geographical restrictions on the boning, cutting, slicing and pre-packaging of the product. In fact, some producers engage other companies from outside the area to prepare the ham in other formats, such as packets of sliced ham.

As regards the socioeconomic characteristics of the PGI area, most of it can be classified as rural, in terms of its population density, number of inhabitants, and the presence of a Local Action Group (LAG) for rural development. Granada, the nearest large city, is about 1 hour 20 minutes' drive away from the closest municipality in the PGI area.

If we compare the population of the municipalities in the PGI area with other municipalities in the same area (Eastern and High Alpujarra of Granada province), interesting differences emerge. Although the population of the PGI is falling, it is happening at a much slower rate than in the nearby municipalities outside the area. Similar results can be seen in the employment rate (% of the total population in work), which is higher in all the municipalities in the PGI area. However, the figures for population growth and the employment rate are always lower than the average figures for the province or for the Andalusia region as a whole. By contrast, the utilized agricultural area has fallen considerably between 1999 and 2009, while remaining strong in other municipalities outside the PGI area (Table 4). The fact that the PGI area falls within the Sierra Nevada National Park (set up in 1999) has been an important factor driving these trends.

Tab 4. Long-term changes in population, employment in local companies and utilized agricultural area. Source: Drawn up by the authors on the basis of information from the ADMS (Andalusian Multi-territorial Data System)

	Population		Employment rate		Utilized Agricultural Area
	Δ 1991–2005	Δ 2005–2021	2001	2011	Δ 1999–2009
Municipalities	-9%	-10%	69%	49%	-11
Other nearby municipalities outside the PGI area	-21%	-11%	40%	41%	42
Granada	9%	7%	–	50%	-4
Andalusia	13%	8%	–	51%	-11

5.3 The people

The main stakeholders and networks included in the JT value chain are represented by the following groups: ham producers and slaughterhouses (Figure 2).

Fig 2. JT Value chain. Source: the authors

Producers of JT and their Association. These producers share the particularity of making just one product: cured ham. They grouped together in the 1980s to protect and defend the quality and reputation of JT, and an Association was created to initiate the process to obtain the GI label. The first generation of producers thought that coming together to form the association would be the best way to ensure the survival of ham production in this area. As individual competing producers, they were all in danger of going out of business. With this in mind, in 1989, several producers decided to create the association as a means of protecting and defending ham production in the area against other producers, who were using the JT label while operating from outside the area using non-traditional production methods.

The Trevélez Ham Producers Association is an active group, leading initiatives to develop the ham sector, and to improve and protect the environment of the area, its traditions and history. The President of this Association, and the Association itself, play an important political role as a lobby group to defend and expand the PGI, not only in terms of sales, but also by increasing the membership of the Association and the GI.

Some of these producers are quite young (aged from 20–30 years old) and belong to the second or even third generations of association members, the grandchildren of those who created the association. These producers are normally small and medium-sized companies, with a strong record in terms of traceability. Currently, the JT Association has seven members, and there are seven producers working within the PGI group (only five are members of both). The seven producers in the PGI group are all members of the Regulatory Council, which manages the PGI and takes the necessary decisions. Right from the beginning, the member companies have taken an active role in the entire process.

These producers control the ham salting and curing process, which has been handed down through the generations, from fathers to sons.

All production companies located within the PGI production area are invited to join the PGI, on condition that they comply with the requirements and controls.

Most of the jobs are created in the towns and villages in the PGI area. As this is an isolated mountainous, rural territory, the PGI makes an important contribution to ensuring that people can continue to live and work in this area. In fact, ham production is the main economic activity in this area.

Today, JT combines the skills and knowledge of different generations (Esparcia, 2014): the know-how of the *maestros jamoneros* (ham masters), the people who have spent their entire working lives in this sector. The older generation who have the necessary patience and know the secrets involved in making good ham, and the young people who provide a modern education and knowledge of the new technologies that are required to be competitive in an increasingly globalized market. Together, they are capable of adapting to the requirements in terms of health and food safety without losing sight of tradition or being afraid to implement new tools for the management, promotion and marketing of the product, in both domestic and international markets. These producers also take great care to ensure the traceability of their products.

The facilities where the hams are processed combine both the salting and drying functions, and the artisanal and more industrial tasks. One emblematic example of the producers is IJT02, the biggest company in the area, which produces more than 60% of hams and employs 55 people in eight curing-salting factories. For the last 30 years, most of their hams with the PGI label have been sold through the Mercadona supermarket chain. Relationships with this buyer are handled directly by the company's chief executive and sales manager. International sales are handled by his brother (and some collaborators for Europe). They have just one salesman responsible for sales in Spain, making traditional, direct sales to small customers such as delicatessens or butcher's shops. Other companies sell to other large retailers, such as El Corte Inglés, Carrefour and Alcampo. Within the Association, there is an agreement between the producers, whereby each large retailer is allocated to a particular producer.

In this way, the seven members of the Association avoid competing with each other. They buy and sell the legs at the same price, and buy the salt jointly. For these companies, the philosophy is to collaborate rather than to compete. This is because there is a big market for a relatively small number of competitors and products. The Association also set up a company to jointly handle the sale of its members' hams. They also have a common brand and marketing strategy centred around the GI.

PGI Regulatory Council. In 1992, the Association organized the campaign for JT to be recognized as a PGI, which finally took form in 1998 with the creation of the Regulatory Consortium and the publication of the first set of Regulations. The body responsible for managing the PGI is the Regulatory Council of PGI, which deals, among other things, with the established specifications, the quality and homogeneity of the product, the promotion of the PGI, and defends and ensures the correct use of the JT name. According to IJT01 and IJT02, an important role within the Council was played by an independent, external expert, an agronomist, who, at the beginning of the process, drew up the specifications and requirements for producers wishing to obtain the different GI labels. He participated in this process for 15 years, and was the first President of the Regulatory Consortium of the PGI. He helped solve the technical problems and even started the company responsible for the sale and marketing of the ham. Once the producers themselves were better trained and prepared, they took on the leadership of the Consortium.

The Association and Regulatory Council of the PGI are currently managed by two experts (both women). They act as "independent" technicians, and have no direct participation in any of the companies. One of them is the President of the Regulatory Consortium. The fact that she has no stake in any of the individual companies means she can take impartial, independent decisions, so earning the trust of all the producers. She began as the secretary of the Regulatory Consortium. In short, the Jamón de Trevélez Regulatory Consortium and Association, and in particular their Presidents, play significant roles in the promotion and protection of the PGI. The members of both organizations also share similar aims, shaping the social networks of the GI.

JT Sales Company. In 2000, in order to deal with new exports of the product and the associated requirements, the producers, through their Association, decided that the best option was to join together

to sell the product under a single common brand. This new company mainly handled exports of the ham made by the members of the Association, under the common trademark, "Tradición 1962". This company also promotes the GI in other countries.

Processing company. With rising market demand for new product presentations and food formats, a processing company close to the producers was created in 2001. This company transforms the legs of ham into different product formats such as boneless, chopped or sliced. This company provides their services to all the companies in the PGI area. Its proximity keeps product preparation and delivery times to a minimum, so reducing additional transport costs. However, it is too small to handle the entire production of all the producers, and some of them have to engage other processers outside the PGI's geographic boundaries.

Suppliers, slaughterhouses and pig breeders. In general, the ham producers in the area purchase the meat in the Spanish domestic market, basically from Murcia and Catalonia. This meat must meet specific requirements, which makes it more expensive. There is a certain loyalty to these suppliers, who in return offer minimum oscillations in the price of the meat. This can result in excessive dependence with the possibility of supply drying up at any given time. The producers of JT make joint purchases from the same suppliers, so increasing their negotiating power.

Tab 5. JT Actors. Adapted from Arfini and Mancini (2018), and Vandecandeaere et al. (2010). Source: the authors

		Agri-food chain	
		Inside agri-food system	Outside agri-food system
Territory	Internal/local (located within production area, see Fig.1)	Producers (ham makers)/Association PGI Regulatory Council Processing company Distribution company Local retailers/restaurants Local consumers	Initial work done by agronomist Local public administration LAG
	External (located outside the territory of production)	Pig breeders Transformation company Large-scale retailers Small shops and stores Consumers Private control and certification body Provincial Chamber of Commerce (Camera de Comercio) (policy lobbying) Spanish Association of GI (Origen España) (policy lobbying)	Provincial Administration Regional policymakers (Andalusian Region) Public control body

The role of the public sector. Regional and national institutions, and the Local Action Group. These public bodies helped the Association obtain the PGI, but according to the producers, they provided only limited support. According to IJT01, "*government grants are available to fund the creation and operation of PDO and IGP quality schemes. However, in our case, the PDO was created without these grants. At present, we do not apply for the promotion grants, although they are available*". For IJT02, there is a *"bittersweet feeling*" about public support, which is provided: "*more at a local level, with a "healthy breakfast for schoolchildren", but at a national or regional level, not much*". Little support was received from the Local Action Group either, except in the creation of the meat processing company, leaving some producers feeling that they had been abandoned: "*LEADER grants are directed towards other activities*" *[IJT02]* and are not awarded to ham producers, even though they are members of the LAG association (Table 5).

5.4 The process

Trevélez ham, which originated in Roman times, and continued through the medieval era, has been famous for a very long time. In the 19th century, the municipality of Trevélez put a seal on their hams to differentiate them from those produced outside the area. Eugenia de Montijo, the wife of Napoleon III, had them included on the menus of the French court. Isabel II of Spain awarded Trevélez Hams the right to bear the royal crown. Later, in the 1960s, the first ham industries emerged in the area. This was the first generation of large-scale ham producers, some of whom could be described as local visionaries (García et al., 2015).

Problematization. The initial idea to create an association of ham producers appeared in the 1980s. In 1989, a group of producers in the La Alpujarra area created the Association of JT Industries, the main aim of which was the protection and recognition of the product and its manufacturing process, in a bid to prevent producers from other areas selling fake JT ham. They also sought to increase collaboration between the producers in the JT area. The Association was at the root of all the progress achieved later. According to IJT02, "*the Association is the mother of everything*". Currently, the Association has seven partners, some of them are the grandsons, the third generation, of the original creators of the Association. These producers do not compete, they buy and sell the legs of ham at the same price, and buy the salt jointly. An essential part of their philosophy is to work together rather than to compete, because there is a big market for ham with relatively few competitors and producers. To this end, the Association set up a sales company to sell the hams produced by all the producers, and a common brand/marketing strategy, based on the GI.

Expression of interest. In 1992, this Association, now run by the second generation of ham producers, lobbied hard to create the Specific Denomination Trevélez ham. To this end, an Order was issued by the Andalusian Regional Government to create the Denomination (Denominación Específica JT) and its Regulatory Council, in order to highlight the quality and specificity of the process, and to eliminate unfair competition from producers from outside the area. However, this regulation was not recognised at a national level in Spain, because there were various problems with the legislation and the Trevélez trademark. There was also a conflict with the suppliers of pig legs, which paralysed the process of setting up the GI at a national level for several years. The producers eventually solved this problem by leaving out the pig breeders. The Regulatory Council of the Trevélez Ham Specific Denomination was formed in 1997, and was officially recognized by the Regional Government of Andalusia the following year. Its aims were the protection of the product under a national GI scheme, which defended the quality of the product and its name. The Regional Order of May 19th 1998 approved the Regulation of the Trevélez Ham Specific Denomination and its Regulatory Council, so creating a GI that did not require the involvement of the pig breeders. In the year 2000, a sales company (*Sociedad Comercializadora del Jamón de Trevelez* SL) was formed, once again by the Association, to promote joint international sales. A year later, in 2001, the Association set up a processing company (*Deshuesadora Araicel*), which carried out the boning, slicing and final presentation of the ham. In 2004, the Regulations of the Trevélez Ham Specific Denomination and its Regulatory Council were ratified by Regional Order APA/2859/2004.

Delineation and coordination. Under EU Regulation n. 1855/2005, the JT PGI was included in the Registry of Protected Designations of Origin and Protected Geographical Indications. In 2007, the Trevélez Ham Association changed its name to the Trevélez Ham Producers Association, citing as a new aim the drawing-up and implementation of a strategy for the development of the sector, and the protection of its ethical principles. In 2005, the Trevélez Ham Producers Association started a long process aimed at guaranteeing the protection of the ham made in the Alpujarra. In 2017, the "Jamón de la Alpujarra" Guarantee Mark (Marca de Garantía Jamòn de la Alpujarra) was created. Products wishing to be certified under this scheme had to fulfill certain criteria relating to quality, components, geographical origin, technical conditions and production methods. In recent years, the Regulatory Council has been focusing its efforts on protecting the GI label from fraud and misuse, and on maintaining and improving the quality of the product. To this end, the Qualytech Alimentación Foundation was created as an independent entity to control and certify compliance with the requirements of the GI and quality brands: i.e., JT and the Jamón de la Alpujarra Guarantee Mark. The latest campaign promoted by the Regulatory Council and the Association has been

the fight against the proposal to create a Spanish national PGI Jamón Serrano (mountain ham), which they view as a predatory, "unfair" PGI that would endanger JT.

5.5 Impact on rural development

Thanks to the PGI, a network of small and medium-sized cured ham businesses has been consolidated, selling to large-scale retailers. As one of the interviewees argued: *"my hams would not be in Mercadona supermarkets, without the GI …"* or even "*… I would not be a ham producer/entrepreneur without the GI"* [IJT02]. The GI is also responsible for the continued survival and indeed the prosperity of the sector in this area. Producers sell directly to large-scale retailers. This has helped reduce the seasonal nature of the product, keeping production peaks lower. The Christmas campaign is now a much less important part of annual sales.

Additionally, the JT trademark helped differentiate the product and protect it from frauds involving other producers and types of ham. As IJT01 said, "*the fraudulent use of the trademark was radically eliminated*" in the region. It also enables them to sell the ham at a higher price. The producers are satisfied with the PGI. However, on the part of consumers, there is a generalized lack of knowledge as to what quality schemes of this kind actually entail.

The creation and regulation of this specific PGI could therefore be regarded as an innovative project, in that it enabled the producers to add value to these unique products made in rural areas with traditional methods. It gave the producers a tool that allowed consumers to recognize the quality of their products and helped protect them, allowing producers from a remote, mountainous region to compete in the market under more equal conditions. The JT model could be extrapolated to other rural areas with similar traditional products, as occurred with the cherries in the Valle del Jerte and the artisan bread made in Alfacar, where some of the leaders of the JT project shared their experiences.

Another advantage and impact of the introduction of the GI is the development of this isolated, mountainous, rural area, and the maintenance of direct and indirect employment, so reducing the risk of depopulation. As one of the interviewees stated: *"the PGI has led to the creation of jobs that allow young people to stay in their home towns, and other people to settle in the area. Other indirect jobs are also generated to provide services to this population, which supports social development"* [IJT01]. There is no unemployment in this area; on the contrary, it even attracts workers from neighbouring towns and villages. This has important knock-on effects. For example, there are more children in the primary school in Trevélez than in other municipalities in the area; the entire town survives thanks to the ham.

The problem is that this isolated, mountainous area is not attractive for immigrants or for highly-skilled workers. Also, when they reach secondary school age, children have to attend school in another town, which is a 55-minute' drive away. Another issue is the fact that the PGI area is inside a National Park, which limits the size of the ham factories, the production, and the location of the factories, which must always be situated within existing urban areas.

Finally, the product is always promoted by the PGI, both nationally and internationally, in association with the territory where it is produced, in this case Trevélez and Las Alpujarras, so promoting this area. This provides an indirect boost to other sectors such as tourism (rural hotels, B&Bs, restaurants). This high-quality ham also complements the attractiveness of this natural and rural area for arriving visitors and tourists.

In short, JT has been a successful project, which has helped maintain a traditional local product (cured ham) and extensive human capital (long-standing knowledge of cured ham in the area, and a feeling of pride in the producers). It has also created SC, in the form of a network of producers and workers united in support of a common project, and in the recognition achieved on the national and international market. Throughout its various stages and over many years, this project has become a radical process of social innovation promoted by local people, and in particular by local ham producers, who are key actors in the Association (Vercher, 2022), promoting a local resource and local identity.

6. Discussion

The aim of this paper was to highlight the importance of SC in obtaining of GI quality labels. In particular, SC was assessed through the 4Ps – products, places, people and process – involved in GI systems. The cases of Prosciutto Veneto and Jamón de Trevélez highlight quite different experiences in the process by which EU quality labels were obtained, regardless of certain similarities in the products, places and people (Table 6).

Tab 6. Comparative analysis. Source: the authors

	Veneto ham	**Trevélez ham**
Product		
● *Quality scheme*	PDO	PGI
● *Year of registration*	1996	2005
● *Production volume (2020)*	900,000 kg	1,491,465 kg
Place		
● *Production area*	355 km^2	287 km^2
● *Average population density (2018)*	234 inhabitants/km^2	12 inhabitants/km^2
People		
● *Key stakeholders in the value chain*	pig breeders, slaughterhouses, prosciutto factories, private control body, Consortium of producers.	ham producers, Association, Regulatory Council
● *N of certified producers*	10	7
Process		
● *Problematization*	Need for protection from competitors usurping its name. GI label was requested by the already existing Consortium of producers, in order to obtain maximum legal protection.	Need for the maintenance of traditional local product and its differentiation from industrial hams, protection from misuse of the name, so increasing its competitiveness (international markets, higher prices). The Trevélez Ham Producers Association was established.
● *Expression of interest*	Involvement of the regional authorities seeking to enhance the regional identity. Changes in ownership and involvement of multinational companies	Creation of the Regulatory Council of the Specific Denomination JT
● *Delineation and coordination*	No new collaborative forms emerged, but structural changes occurred within the Consortia.	Creation of the Trevélez Ham Producers Association
Innovations and impact	Enhancing the value of local resources using thematic methods (twinning with other local agri-food products) and festivals	Consolidation of the network of small and medium-sized entrepreneurs; increase in local employment, maintenance of local economy and identity

The product. Both dry-cured hams are niche products in their national markets, based on traditional agri-food systems established within precisely bounded production areas, with centuries-long traditions and local know-how. PV and JT are protected by two different EU quality schemes (PGI and PDO), although the geographic scope of their production areas is similar – i.e., a small, delimited area for the production of ham and a vast area for the production of the raw materials. The fact that these two quite similar products with similar production processes were awarded different quality labels is due to the 9-year time-gap between their registration. Indeed, according to Belletti et al. (2015), the year of registration is an important variable influencing the rigidity of Product Specifications. Another difference is the degree

of specialization of the producers: the Spanish producers only produce legs of ham, while the Italians make a much wider variety of products. Both GI products help reinforce SFSCs, by adding value, keeping local agri-food systems within their corresponding local areas (Belletti et al., 2012), and reinforcing local identities (more important in the Spanish case) (Belliggiano et al., 2018). Moreover, both GIs are the result of a hybrid combination of external, scientific knowledge and traditional local know-how, which together create interwoven, neo-endogenous products (Esparcia, 2014).

The place. Although the average population density is considerably higher in the PV municipalities, the JT production area has experienced a positive trend in terms of population growth and employment rate, which can be considered as indicators of SC (Ciommi et al., 2021) and positive consequences of this local product. In this case, the place of production (an isolated area with a small population), which could in theory be a weak point, in practice becomes a strength (traditional know-how, natural mountainous area, national park).

The people. Given their similar production processes, both production systems also share similar categories of actors involved in the value chains and similar numbers of ham producers. In both cases, there is limited interaction between the ham producers and the pig breeders regardless of their strong interdependence. The reason for these poor links is due to the physical distance between the pig farms and the ham production area (especially in the case of JT). In addition, the existence of intermediate actors such as slaughterhouses (as it happens in PV) makes such interaction even more difficult. Another issue for PV is the heterogeneous nature of the companies involved in ham production, i.e., large multinationals and small-scale family-owned prosciutto factories, which creates a degree of tension in the local production network. In the case of JT, the tension comes mainly from outside the area, from competing producers who wrongfully appropriate the "Trevélez" and "Alpujarras" labels. Inside the JT Association and the GI, the partners collaborate and participate in the same sales and marketing policy, so eliminating any kind of competition, and giving rise to a network that shares similar territorial, social and economic objectives, and promotes social innovation. In both cases, these networks play a key role in the obtaining and continued success of the GIs (Quiñones-Ruiz et al., 2016). Organisational changes in these local networks aimed at activating local assets and enhancing their value can help reinforce existing local identities and create new ones (Belliggiano et al., 2018). In short, SC and neo-endogenous practices are interlinked and interdependent (Lowe et al., 1995).

On the negative side, in both cases, there is a surprisingly low -or almost non-existent- input from universities, who, in theory should be key actors in the quadruple helix framework (Nordberg et al., 2020). Lastly, also the GI processes received minimum support from rural development funds (such as LEADER).

In both cases, LAFSs are understood as a form of cultural and SC. The existence of local networks, and of a pre-existing shared trust and narrative, were important in obtaining the GI labels (Reviron & Chappuis, 2011; Quiñones-Ruiz et al., 2016; Arfini & Mancini, 2018; Enthoven & Van der Broeck, 2021; Kothi et al., 2021). Once in place, the GI labels in turn helped sustain these producers and networks.

The process. The various phases for the obtaining of GIs can be regarded as SI processes (Neumeier, 2017), and radical SI processes (Vercher et al., 2022), which require long adoption periods and critical conflicts between the key actors involved. In both cases, the ham producers – and in particular their Associations – sought to seize the opportunities arising from EU quality schemes, and dominated the whole process, from the expression of interest (e.g., drafting the application) to the registration of the GI and the subsequent changes in the PS. However, the processes by which the EU quality labels were obtained varied considerably in each case. In the case of PV, the ham producers were following what could be deemed a 'defensive' strategy: the product was already enjoying the added value provided by the national quality label (i.e., DOC) several years before EU recognition. The main problem that pushed producers to acquire the EU label was the usurping of its name, 'Veneto ham', which was considered too generic. For their part, the JT producers followed both 'defensive' and 'offensive' strategies (Durand, 2022): on the one hand, similar to PV, they wanted to differentiate their product from emerging industrial hams, while on the other, they were seeking to create added value for the product, which until then had had no legal protection, in what at that time was a strongly competitive market.

In the case of PV, the introduction of the EU and national quality schemes were accompanied by a change in ownership in most of the prosciutto factories when multinational companies entered the stage. In both applications, the regional authorities became involved in a bid to use the GI to enhance regional identity. In the Spanish case, the EU and national quality brands have boosted the size and turnover of these companies, which before were traditional family-based companies serving the local market, and have since become medium-sized enterprises operating in the Spanish national market and beyond.

There are also several dissimilarities in the delineation and coordination of the GI systems since obtaining EU protected status. For PV, the PDO label has brought substantial changes in the local production network, due to tighter restrictions on the production area. No new collaborative forms have emerged since the introduction of the GI label, although structural and functional changes have taken place within the Consortia, with a private control body being introduced. In the case of JT, the Trevélez Ham Producers Association was set up specifically to manage the PGI label. These processes helped to link local and non-local actors, hence creating experiences of neo-endogenous rural development (Lowe et al, 1995).

Impacts on rural development. The introduction of the GIs had a clear, albeit differing impact on rural development in the two cases studied. In Veneto, it is difficult to evaluate the extent to which PDO certification has contributed to the rural development of the 15 municipalities. At present, although the product is a fundamental part of the identity of this territory (particularly the Montagnana ham), it is not the only important business sector in the area, which hosts other agricultural and industrial activities. The PDO label has a major impact by enhancing the value of local resources through the networks established with other actors inside and outside the agri-food chain and the territory.

By contrast, in the case of JT, introducing a GI label had a much more obvious socioeconomic impact, fulfilling the wider objectives of the rural municipalities involved. These included the consolidation of the network of small and medium-sized businesses, the continued survival and prosperity of the ham sector, the maintenance and creation of jobs to help retain population levels in an isolated, mountainous rural area, and the consolidation of local identity (Belliggiano et al., 2018) (Table 6).

Lessons learned. If we consider the experience of PV and JT in obtaining EU quality labels, several recommendations could be made that might be useful for agri-food systems that are currently applying for EU quality labels or wondering how to improve their management (e.g., regional authorities, producers and their Consortia):

- *The name matters.* Regardless of the possible economic or political interests that may emerge during the application process, the case of PV shows that it is better to retain the product's long-standing traditional name, which can convey its history, traditions and territorial embeddedness more effectively.
- *The physical and cultural proximity of local actors is a key factor.* A strong link to a specific territory is claimed to be the main reason for the success of GIs as drivers of rural development. If the Product Specifications are too broad in terms of geographic scope and do not restrict production to a relatively small area, this can have a negative effect on the cohesion between the different actors in the value chain. By contrast, in smaller areas, it is easy to build collaboration among all the actors in the value chain (Tregear et al., 2007). In addition, although one could argue that the larger the number of economic actors the better, a small, physically – and culturally – close group of producers can enable direct, informal interaction, so avoiding misunderstandings, poor communication and the potential emergence of conflicts among key stakeholders (Belletti et al., 2017)
- *The GI label is important in co-branding and storytelling.* As demonstrated in both cases, the GI label can serve as a good tool in co-branding with other local productions (e.g., wine in combination with food) or activities, so helping foster local development on a wider level, and the territorial identities of local areas. The GI label can also be used to promote the brand and/or image of a company involved in the production of the GI product.
- *Importance of the governance structure.* In both cases, the EU quality label was obtained thanks to the establishment of a network among ham producers, in the form of an Association,

Consortium or Regulatory Council (depending on the legal framework in each country). Although the support of such an institution is a mandatory prerequisite for obtaining official recognition of a GI, the existence of an ad-hoc institution operating at the meso-level can serve as a balancing factor for the various economic and territorial interests, depending on the specific governance structure that is implemented.

7. Conclusion

The aim of this paper was to understand and demonstrate the important role played by SC in obtaining GI quality labels. By analysing and comparing the cases of Prosciutto Veneto (Italy) and Jamón de Trevélez (Spain), this study confirmed that SC does matter when it comes to obtaining and subsequently managing GIs. In both cases, the ham producers – and in particular their network in the form of a Consortium or Association – were the ones who took the initiative in the initial application for the EU quality label and who led the entire, lengthy process. The study also illustrated how the advantages arising from these high-quality labels (i.e., added value, consolidation of producer networks, new tourism activities) and their impact on rural development can differ in line with the level of SC in the area. In the case of PV*,* it is difficult to evaluate the extent to which PDO certification contributed to rural development because it is not the only industry/business sector in the area. By contrast, in the case of JT, the introduction of the GI label had a clear socioeconomic impact on the rural territories concerned because of the minimal contribution to the local economy made by other business sectors, and the crucial role played by the social network that has developed around the ham industry (Association and Consortium) in these municipalities. In the case of PV, regardless of the low level of SC that seems to characterise its protected area, new forms of networks are emerging in the field of tourism and innovations thanks to the Consortium and other local entities.

Due to the fact that this case-study comparison covered just two GIs, these results cannot be generalized. However, similar studies for other processed-meat GIs could follow the same analytical approach applied here to study the role of SC: places (geographical and socioeconomic context); products (GIs); people (key actors and ways of collaboration, -relational dynamics-); process/phases; and territorial impacts (transformative dynamics). This would provide a more complete picture of the impact of GI labels on the development of rural areas.

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