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The Red Gold of Basilicata

The Senise Pepper PGI as a tool of rural development

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1: Introduction

The increasing difficulty that territories face in being competitive and attracting the necessary economic resources for their development is becoming more and more well-known. All of this is further amplified when considering the challenges they encounter in dealing with a complexity and speed of economic and technological changes that are decidedly greater than in the past (Castellet M., D'Acunto M., 2008). Precisely for this reason, they can and must play a fundamental role in creating development and countering ever-increasing competition among local entities, as well as the various specificities that characterize a territory, whether they be works of art, architecture, or agricultural products.

Geographical indications (GIs) have emerged relatively recently in the field of intellectual property rights (IPRs) when compared to more traditional concepts like trademarks, patents, and copyright. While various terms and definitions existed in national and international legal frameworks, the World Trade Organization's Trade-Related Intellectual Property Rights (TRIPS) Agreement, adopted in 1994, provides the broader reference for the definition of GIs. According to Article 22 of the TRIPS Agreement, GIs are described as:

"...indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin."

The economic rationale behind GIs stems from the need to rectify a market failure caused by two key characteristics. The first is the problem of asymmetric information between sellers and buyers. When it's uncertain whether the quality of product A is superior to that of good B, consumers may be unwilling to pay a higher price for product A. The second reason relates to the fact that a GI, without any legal protection, functions as a public good. Anyone can freely use the regional brand and its reputation as a free rider, even if they have no affiliation with the corresponding region or its typical goods. However, by introducing the possibility of protecting GIs as intellectual property, both problems can be solved. Consumers can have confidence that a product bearing the GI will possess the expected quality and that they can trust the product's origin indicated on the labelling, as the quality and origin are intrinsically linked (Beletti et al., 2011).

Studies have shown that consumers tend to highly regard the quality, authenticity, ethical standards, country of origin and sustainable production of food products, prior to purchasing them (Herrera and Blanco, 2011; Aprile et al., 2012). EU certification schemes range from compliance with

mandatory production standards, to compliance with additional requirements relating to environmental protection, animal welfare, organoleptic qualities, worker protection, fair trade, the implications of climate change, ethical, religious, cultural considerations, production methods and origin.

The goal of this dissertation is to analyse the level of added value, differentiation and competitiveness that the PGI label gives to the area of interest. The Senise Pepper PGI has been taken as a case study due to its peculiar characteristics that have awarded it with protected geographical indications (PGI) from the European Union. Senise pepper PGI has found a peculiar habitat in specific areas of south of Basilicata, a region located in southern Italy. It has been chosen to study this product's market due to the low impact that PGI has had on the development of Basilicata under an economic and social point of view. The study has been based on the consultation of literature review and on field research through semi-structured interviews to farms and firms. The qualitative and quantitative data collected have been useful to identify the market and the variables that affect in a positive or negative way the product and its position in it.

The dissertation is divided in four chapters, the first two focus on the theoretical insight of the dissertation topic, the last two are strictly based on the case study of the Senise pepper PGI. The opening chapter, after the introduction, is based on the literature reviews and in particular, on the principal economic theories that interprets the quality certifications as an "invisible asset". An analysis of the differentiation and cost strategy has been conducted, then there has been done a focus on the regulations of the GI labels in EU and in Italy to finish with the new look at the GI in the PNRR.

The third chapter is on data and methods, at first the research on the pepper background has been conducted and it finishes with the firms 'analysis. The fourth chapter is about the analysis of the market with the cost-benefits analysis, industry-based model, resource-based model and the evolution of the market over time.

2: Literature review

2.1 The quality as a way of competitiveness

The International Organization for Standardization (ISO) defines quality as the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs (ISO 8402). The concept of quality has evolved over the past five decades. The concept was broadened by integrating quality into all of the different functional areas that may be associated with the production process, including suppliers, sales, production and services. This approach is known as process-control-oriented quality assurance. Quality can therefore be identified as a management function because it needs to be planned, implemented, monitored and improved.

Total Quality Management (TQM) is a management philosophy that involves all aspects of quality that are of interest to both the consumer and the organization. Globally, the TQM approach has shown to be a viable way of cutting costs, increasing productivity and improving quality. It involves all levels of an organization's management, including human resources management, leadership, policy and strategy formation, management of processes and material resources management. It also reflects enterprise results and the satisfaction of interested parties such as employees, consumers and society.

TQM organizations develop a wide range of indicators to measure and improve their performance with regard to the above parameters. The main objectives of TQM are associated with consumer satisfaction and continuous improvement, both of which are crucial for favourable enterprise results. By measuring tendencies in relevant consumer markets, an organization attempts to internalize consumer satisfaction in their production system. However, as the organization's environment changes continuously, consumer satisfaction and profitability can only be maintained if products, processes and human resources are continuously improved.

EU competition law aims at protecting competition and consumer welfare by preventing anticompetitive market outcomes. The benchmarks that are relied upon in that regard are parameters of competition such as price, output, innovation, product variety, and product quality.

Quality is a factor both in antitrust and mergers analyses. It is relevant not only for the assessment of competitive harm and in the examination of efficiencies, but also for market definition. In the area of antitrust, Article 101 of the Treaty on the Functioning of the European Union ('TFEU') foresees that agreements that have as their object or effect a restriction of competition are prohibited unless the restriction of competition is, inter alia, offset by efficiencies that are to a sufficient degree passed on to the consumers harmed by the agreement. Agreements that limit the quality of products

or services fall within the prohibition of anti-competitive agreements. At the same time, otherwise anti-competitive agreements may fall outside that prohibition, where they, inter alia, give rise to quality improvements that offset the anti-competitive effects.

Quality can also be a relevant factor in the context of Article 102 TFEU, which prohibits abuses of a dominant position. Conduct may be considered abusive where it is likely to negatively affect product quality. Even though the wording of Article 102 TFEU does not contain an efficiency defence, the Court of Justice of the European has recently confirmed that dominant companies are entitled to raise efficiency arguments in order to justify conduct that may otherwise be regarded as abusive.

2.1.1 Cost leadership strategy

From a consumer point of view can be a common thought that the agricultural products are just raw materials coming from the soil, hence the origin of the product is not so relevant for the composition and the quality of the product is the only sweet pepper with the PGI label in Italy (Ismea,2006).

This mis concept, obviously wrong, worries the producers because of the possibility to face more competitors and broader market that offers similar products at a lower price.

However, there are two faces of a same coin, if from one point of view there is the increase of market competition, on the other hand producers are pushing forward the implementation of the quality label to differentiate the product and justify the higher price.

Based on these statements, looks like the firms adopt a manufacturing strategy that would imply a generic focusing on either quality or cost reduction, hence the impossibility of succeeding with a combined strategy.

This orientation fits nicely with the traditional manufacturing notion that "quality is expensive", which assumes that improving product quality must raise the costs of the manufacturing process. Perhaps the most widely used model of competitive strategy is the generic strategy model developed by Porter (1980).

Porter's model has the primary virtue of being easy to understand, but it does not fully reflect the complexity of strategic behaviour among real organizations. Porter states that there exist two alternative strategic positions, common to all industries, which will provide competitive advantage and supernormal rates of return. These are Product Differentiation and Cost Leadership. Porter

proposes that successful firms must follow one of these inherently incompatible strategies, and that firms cannot achieve above normal performance if they attempt to pursue a balanced strategy. An "in between" strategy forces the firm to compromise in making critical strategic choices and therefore creates a disadvantage in comparison to the firm which is dedicated to a single objective. These strategic positions are modelled as opposite ends of a single strategic dimension. Performance levels are highest at either end of the continuum, lowest in the middle. Therefore, a firm with a cost leader strategy should be expected to seek an economic level of quality where the total cost of added quality and of lost customers is minimized. A product differentiator should be expected to invest in quality, along with product characteristics which will raise margins. So long as the added quality can be covered by higher prices, investment in improving quality should continue.

Contrary to Porter's model, from a total quality perspective, however, the possibility of providing both improved quality and lower costs exists. This condition suggests the possibility not that quality is free, but that the customer can be offered both a better product and a better price. Investments and commitment of resources joint to a well matched market strategy brings success, even if the market strategy is not a narrowly defined generic approach.

This perspective provides the potential for a more flexible strategic scheme than that of Porter. If all firms have unique resource pools, then some firms should have the resources to provide a strategic balance of quality and cost control. The total quality movement goes further to suggest that all firms can cut costs by investing in the proper management of quality through continuous improvement, training, worker involvement, etc.

Phillips et al. (1983) conclude in an empirical study that quality and cost control interact to generate above average ROI. While the competitive advantage of a product differentiation strategy is indeed based on the product's characteristics, cost leadership advantage is more concerned with process efficiency. Comparing these very different orientations along a single dimension implies a homogeneity that may not exist. Two critical issues for firm strategy are the need for process efficiency (focus on efficient operation of the value-added chain for a product) which leads to lower costs, and the need for product effectiveness or differentiation (a focus on the market positioning of the product itself) which is often manifested as higher quality.

These two concerns are best treated as orthogonal dimensions, rather than as opposite ends of one strategy axis (Bangert and Tallman 1991). Each of these dimensions, at its extreme, matches one of Porter's generic strategies. The extreme of the process efficiency strategic direction would be cost leadership. The ultimate of product effectiveness would be a totally differentiated product.

Some products gain or lose effectiveness and raise or lower costs in specific portions of the firm's value-added chain. Identifying the source of strategic advantage can be a complex activity.

2.1.2 Differentiation strategy

The firm's choice to adopt a differentiation strategy is based on the qualitative characteristics of the product that the firm is putting on the market. In case a product, for the territory morphology, soil composition and microclimate in which is cultivated or for the particular production process, results in owning qualitative characteristics that differentiate it from its own category to which the consumers give a value, the differentiation strategy can result a winning option because it allows to have that value adding in order to reach the premium price. Obviously, it is necessary to adopt a supporting marketing strategy before adopting the differentiation strategy because the path can be different considering the product, the firm and the market (Ismea, 2006),

The elements and the characteristics that define a product must be perfectly recognizable from the consumers in order for the firm to obtain a positive result, furthermore, there must be a good data collection from all the different parties that allows to analyse the material and immaterial characteristics of the product. The most common tools used are the quality label but are not always sufficient to reach the premium price linked to the wiliness of the consumers to pay more, "it's necessary that all the production phases are coordinated to create, sustain and valorise all those differential elements on which the quality perception of the consumers is based" (Ismea, 2006).

Product Differentiation provides excess returns by permitting higher prices for a unique product offering. Although differentiation may have many sources, it is most often characterized by superior quality of the product (Phillips et al. 1983). An extremely high level of quality provides a defensible market position as loyal customers willingly pay more for this desirable feature.

The derived assumption is that the focus on low cost production supports a cost leadership grand strategy when other activities and relatively few costs. The factors associated with costs leadership--inexpensive inputs, process efficiency, economies of scale are closely associated with manufacturing. Likewise, factors associated with product effectiveness or quality, such as specialized inputs, skilled labor-intensive processes, or new technologies are also closely related to manufacturing. A manufacturing strategy which can reduce costs and improve quality will generate improved performance, both in the manufacturing area and to the firm in general.

2.1.3 Costs of the quality in the differentiation strategy

Nowadays, the quality seems to represent the key tool to sustain the agrifood system, fundamental sector of the Italian economy, that is facing several issues regarding the protection and the promotion of “made in Italy” abroad, and the food counterfeiting.

The quality can be considered as two faces of a same coin, one sees the quality as a fundamental competitive leverage for the realization of a differentiation strategy, the other one sees the quality as an expenses, a cost and a firm investment. In order to produce major quality products there is a need of a higher attention of the inputs utilised for the final product, the raw materials and a more precise control of the intern production process. During this path there is a need to invest in the infrastructures to ensure the stability of the product quality during the long period, furthermore there is an incurrence of higher cost for the maintenance of the competitive advantage gained during the long period, last but not least there will be higher costs to keep the trust of the consumers.

The creation of "superior" products in terms of quality content undoubtedly involves greater attention to all the inputs used to obtain the finished product, if it is not a raw material, a tighter control of the internal production process, and, in most cases, a reduction in economies of scale that can lower production costs. From a cost perspective, a quality-focused approach entails: higher costs for structural adjustments necessary to achieve certain stable quality standards over time; increased expenses related to maintaining a competitive advantage that delivers better performance, primarily in terms of profitability, compared to competitors; and, finally, it is essential to incur higher monitoring costs to maintain the trust that end consumers place in the company's offerings.

In light of the above, a company must carefully assess whether the distinctive character that sets its productions apart actually meets the demands coming from the market, as only in this case, and through proper policies of valorization and information, it will be possible to create that added value that induces consumers to pay a higher price compared to competing products.

From a company's perspective, it is possible to identify the concept of commercial quality of a product, which can be defined as "the set of tangible and intangible properties and characteristics of a product (including incorporated or added services) that allow it to meet the needs, requirements, and tastes of the user, for which the user pays a price for its acquisition" (INDICOD Report, 2003). It can be understood how in this case the concept of quality also includes all those intangible elements of the product that, through adequate commercial and marketing strategies (price, image, promotion, chosen distribution channels, etc.), allow differentiation in the perception of consumers and therefore determine the company's competitive positioning in the target market.

On the other hand, when referring to codified quality, "only the tangible characteristics of a product are taken into consideration, meaning those attributes of a food product that can be defined by a legal/technical standard, a specification, or a production/distribution protocol" (INDICOD Report, 2003).

2.2 The CAP path to face quality

Starting from the 90'the Common Agricultural Policy (CAP) has been characterized by the adoption of the "quality strategy" linked to the territory of the agrifood products. The idea was to valorise through a quality product the rural area (around 80% of the EU territory) leading to a positive impact on the environment, on the agricultural production and on the balance of the social structure. Furthermore, thanks to the quality certifications, a more competitive and segmented market has been granted; the image and the production traceability have created an added value that reward the product and its origin.

In the 21st century, the demand of the agrifood products has changed due to the changes in the consumption patterns, a better lifestyle, a technological improvement, a higher knowledge level and a strong attention to the environmental issues, all this have changed the habits and the choices of the consumers.

Climate change poses significant risks to human society with adverse effects on biodiversity, forest regeneration, and biomass production. Additional effects will be felt on human production activities, especially the agricultural sector. In addition to the increasingly fierce market competition, the prices of agricultural products have generally shown a declining trend (Xue et al., 2020). Commodities having a strong association with a particular culture or geographical origin may hold the opportunity to realize value addition through differentiation.

Based on all these elements, from the 90' there have been the first regulations act to promote the production of quality:

- Regulation EC 2081/92 issues the Protected Designation of Origin (PDO), label given in the case in which the entire product has been made traditionally and entirely manufactured (prepared, processed and produced) within the specific region and thus acquire unique properties; and issues the Protected Geographical Indication (PGI) which indicates a product that originates in a specific place, region or country, whose given quality, reputation or other characteristics are essentially

attributable to its geographical origin, and for which at least one of the production steps takes place in the defined geographical area

- Regulation EC 2082/92 issues the Traditional speciality guaranteed (TSG) which highlights the traditional aspects, such as the way the product is made or its composition, without being linked to a specific geographical area. The name of a product being registered as a TSG protects it against falsification and misuse.

- Regulation EC 2092/91 issues the biologic production method, its main goal was to protect the environment.

These regulations adopted by the European Commission are important because for the first time it was recognised the importance of the land origin and of the methods of production to ensure the quality of the agrifood products. The result was the necessity to develop and valorise the quality labels.

The introduction of these regulations have been field of debate for a long time between the member countries. The regions centre/nord Europe, characterised by few or none of typical products were against these regulations because for them was unuseful. On the other hand, the Mediterranean regions, were full of products closely linked with the region and the territory so for them recognising these products and giving them a legal protection, was an added value and a way to protect, keep and valorise such product (Trevisani G.,2000).

These food quality schemes are an alternative to cost minimizing strategies and are expected to especially benefit small farms and farms in disadvantaged areas that have difficulties to compete with larger and more efficient producers (Hajdukiewicz, 2014).

Moreover, in the following years other reforms concerning the products quality were put in place, the most important ones are the Mac Sherry Reform in 1992 and the Fischer reform in 2003 which introduced decoupled payments in form of single farm payments (SFPs), farmers were now able to receive SFPs by activating entitlements. The State gave the possibility to activate funds to promote the commercialization of the agrifood products with high quality standards and with non-invasive production processes and environmentally respectful.

Important is the Council Regulation (EC) No. 1234/2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation), The Regulation lays down, for each agricultural market, provisions concerning the granting of aid and market support measures. Further provisions deal with (i) setting up and official

recognition of producers' organizations and interbranch organizations; (ii) trade with third countries, giving particular regard to the issue of import and export licences as well as management of import quotas; and (iii) supply of food from intervention stocks to designated organizations for distribution to the most deprived persons in the European Community.

Regarding the second pillar of the CAP, it is possible to state that the major focus on a political strategy based on the quality of the agrifood products, has been sanctioned with the second European Conference on the rural development of Salisbury in 2003 (Gencarelli F.,2009). From this Conference it has been evident the need to invest the common resources in the development of the agricultural and forestry sector, that is to say the type of sectors able to preserve the welfare of the rural environment and to keep the same local communities. Moreover, this improvement must be in conjunction with a diversification mindset within the same sectors since the development of the rural areas cannot depend only from agriculture.

Milestone is the Council Regulation (EC) 1290/2005 which issues the European Agricultural Fund for Rural Development (EAFRD). It is one of the European Structural and Investment Founds which was set up for the financing of Rural Development (RDPs).

RDPs consist of measures and projects that contribute to the EU-wide objectives of:

- improving the competitiveness of agriculture
- encouraging sustainable management of natural resources and climate action
- achieving a balanced territorial development of rural economies and communities

Programmes are prepared on a national or regional basis and must work towards specific targets relating to the EU's rural development objectives.

This path has brought to the implementation of the "Quality Package 2010", it is a policy on certification schemes, value-adding terms for agricultural product qualities, and product standards, covering the different facets of quality, the package comprises:

- Agricultural Product Quality Schemes Regulation

- New general base-line Marketing Standard

- New Guidelines of best practices on voluntary certification schemes and on the labelling of products.

2.3 Regulation 1151\2012

As part of its food quality policy, the European Union (EU) promotes three types of quality labels for agricultural products and foodstuffs: Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Speciality Guaranteed (TSG).

PDO covers agricultural products or foodstuffs that are produced, processed and prepared in a specific geographical area, using recognized know-how. PGI covers agricultural products or foodstuffs closely linked to a geographical area; at least one of the stages of production, processing or preparation occurs in that area, while the raw material used in production can come from another region. Finally, TSG covers agricultural products and foodstuffs that are produced using traditional raw material or traditional production methods, or that have a traditional composition, with no restriction as to the product's geographical origin.

The PDO, PGI and TSG schemes were introduced, not only as a way to support consumers' decisions, but also as a mean of food control (Grunert & Aachmann, 2016; Hajdukiewicz, 2014). European producers are aware of these schemes and consumers are showing renewed interest in traditional food.

In 1992, the first European legislation for agricultural products and foodstuffs was adopted, covering PGI and PDO labels. Those legislation was inspired on existing national systems, such as the French AOC (Appellation d'Origine Contrôlée) and Italian DOC (Denominazione d'Origine Controllata) (European Commission, 2011). The French AOC system is closely linked to the concept of terroir, since a terroir product is characterised by a specific geographical origin, developed over a long period of interaction with local traditions, the local environment and know-how.

In 2006, Regulation (EU) N° 509/2006 was adopted, creating a regulatory framework of the TSG label for agricultural products and foodstuffs. The latest regulation on agro-food quality certification schemes came into force on 3 January 2013 – Regulation (EU) N° 1151/ 2012. Applications to use any of those schemes are generally managed by a group of producers, through the national food authority's communication with the European Commission. The Commission analyses applications, in order to guarantee the right to use the respective label.

It is of note that currently producers from countries outside the EU can join EU quality certification systems, according to the World Trade Organization's rules on international commerce. Since 2006, applications for registration of PDO, PGI and TSG labels by producers in other countries, and objections in relation to applications made individually in other countries, can be made directly to

the European Commission. However, the number of international registrations is very low (Hajdukiewicz, 2014). There is a need to protect high quality products with geographical indications and designations of origin from possible commercial fraud, since such products are related to higher retail price and bring in higher financial benefits to producers in comparison with other similar pro- ducts (Danezis et al., 2016). Methods for testing authenticity and providing analytical data on traceability require robust analytical techniques that can be used by the various regulatory authorities. So, it is not surprising that studies about food authentication cover more and more certified traditional products such as cheese, wine and vegetables.

Food authentication aims to identify unique markers or groups of markers to characterise the authenticity of food or their potential adulterants/contaminants and use them to resolve authenticity problems.

The Regulation 1151/2012 is born to facilitate and strengthen the protection system and quality control trough more explicit and transparent procedures. It has applied since 3 January 2013, although Article 12(3) and Article 23(3) have applied since 4 January 2016, without any negative effect on products already placed on the market before that date.

One of the fist point that this regulation has put in act was to clarify to the consumers the difference between PGI and PDO in order to better valorise the products and their link with the territory. It seeks to enhance the European Union's (EU) quality policy for agricultural products by increasing the coherence of various quality schemes. Furthermore, it includes measures to ensure fair competition for farmers and producers, to protect intellectual property rights and to support agricultural and processing activities.

New aspects were introduced, few of most relevant ones regard the option of having a PDO certification even if the raw materials are not from a narrow territory but from a broader geographical area. Furthermore, there is a rule strengthen on the "names, symbols and indications"; the possibility to specify on the product tag the symbol of the certification and the indication of the geographical origin was put in place. These new introductions underline the wiliness to make more explicit the important role of the product origin but on the other way around confirms the role of the communication trough images as a tool to strength the product marketing campaign.

The Europe 2020 policy priorities as set out in the Commission Communication entitled 'Europe 2020: A strategy for smart, sustainable and inclusive growth', include the aims of achieving a competitive economy based on knowledge and innovation and fostering a high-employment economy delivering social and territorial cohesion. Agricultural product quality policy should

therefore provide producers with the right tools to better identify and promote those of their products that have specific characteristics while protecting those producers against unfair practices.

2.4 GI in the UE and in Italy

The PGI framework is defined as the legal and institutional framework for the recognition, registration, protection and management of all GIs in a given territory, normally a State or a union of States (as in the case of the European Union). It is a set of laws, decrees and administrative procedures allowing stakeholders of each eligible product to apply for the registration of a GI and obtain protection against illegitimate or incorrect use of it. For exported products, the situation is more complex, and the effectiveness of the GI depends mainly on the recognition of the national GI system in foreign countries.

The TRIPS Agreement obliges all WTO member States to provide legal means to protect GIs. Member states, however, are free to choose the most appropriate implementation tool according to their own legal system and practice, provided that the aims of protection are attained.

Nevertheless, the GI framework is only a component of a wider GI policy that seeks to support GI systems and enhance positive impacts on local sustainable dynamics (economic, social and environmental), even while facing possible negative effects (Belletti and Marescotti, 2008). In particular, structural problems affecting agriculture, food industry and retail environments; problems of coordination among firms; access to credit and human capital and professional competencies; should be considered in an integrated way when creating a comprehensive and integrated GI policy.

In most national legal frameworks, the registration of a GI is based on a Code of Practice (CoP). The CoP is a document specifying the GI product's attributes in relation to its geographical origin. It also describes the product and its production methods, laying down requirements not only for modes of production but also, where applicable, for processing, packaging, and labelling, among others. Any party using the GI must meet the requirements established by stakeholder consensus in the respective GI's value chain and laid down in the CoP.

A control plan can lay out the checking procedure of the CoP's various rules of compliance. The plan is a management tool identifying the control points in the critical stages of production and the means of verifying conformity to CoP requirements.

A guarantee system can ensure the presence of attributes and compliance with specifications mentioned in the CoP (assessable criteria and critical points of the control plan: what is to be controlled, when and by whom, and the type of sanction). Finally, enforcement is the process through which norms have legal force and effect. The rules collectively established for the GI product by means of the CoP must be enforced against those misappropriating the GI.

The GI's producers can enforce these rules through a court, or national authorities may give the producers official standing. In addition, enforcement is often granted through ex officio actions by national authorities, who also may take some action concerning usurpations in third countries.

From the production side, OPs and GIPs are the end-result of local production systems and supply chains making use of specific local resources in the production process.

When the GI registration is obtained, a sub-system of firms, using the recognised GI according to specific rules, can be identified inside the OP production system. This sub-system is called the GI production system. The boundaries between the GI and the non-GI part of the OP system are very often not fixed and move over time (firms cannot use the GI outside the special protection scheme rules, and the same firm can make use of the registered GI for only a part of its OP production).

In the EU there are a total of 3091 of foods and wines certified PGI, PDO and TSG plus 245 of spirit drinks (like rum, whisky, liqueurs….) that gives a total of 3336 for the GI. From an economic point of view, according to recent estimations of the EU Commission, the GI sector is worth 72,736mln of euro, with a weight of 32% for the agrifood sector (22,971mln of euro), 54% for the wine sector (39,418mln of euro) and 14% for the spirit drink sector (10,347mln of euro).

The table 1 allows us to have an overview of the agrifood market, obviously this scenario is subject to rapid changes because there are still a lot of products that are in list to be recognised as GI while others will be removed. Despite this, it is difficult that in the short period there will be important changes that will completely modify the market assets and the podium of the "leaders" states

As is possible to notice *(Ismea 2021/2022),* at the end of 2022, Italy is the top player in Europe with 882 GI products asa demonstration of a strong link with the Italian agrifood excellences and its territory. On the podium at the second place there is France with 753 GI products and at Spain with 371 at the third place followed by Greece and Portugal.

Looking closer, it's possible to notice that France has a different position if considering only the GI spirits drinks that with 53 products beats Italy which passes at the second place with 35 products.

Some considerations have to be made to better understand why certain European States have a higher predisposition in producing high quality products. One of the causes can be the different social, cultural and economical environment that each State has but also the agrifood vocation and tradition of the territory. Furthermore studies have highlighted that the States on the Mediterranean Sea have a higher probability of having GI products due to the peculiar characteristics of the climate and of the environment (Nomisma,2009). This is the case of Italy, France, Spain and Greece that all together make the 63% of all the certified products.

The 2022 Report of |Qualivita states that in Italy the entire production of GI products worth 19,1 billion of euro with a growth level on annual base of 16.1%. On the agrifood sector the GI products occupies the 21% while by looking at the export the GI products generate a wealth of 10.7 millions of euro with an annual percental growth rate of 12.8%, the weight of the GI export on the agrifood system is of 21%. As already mentioned in the previous chapters, due to the high impact that these label have under an economic point of view, as a consequence they are also fundamental for the development and the welfare of a region, a geographical area or even a city; in 2023 the Italian city that is growth more thanks to the economic impact of the PGI and PDO is been Treviso with 2.209 millions of euro followed by Verona with 1.410 millions of euro and Parma with 1.380 million of euro. Analysing the Italian regions that have had a major impact, the leader region is Veneto with 3.946 million of euro followed by Emilia Romagna with 3.519 million of euro and Lombardia with 2.194 million of euro. In percentage the GI products are located by 55% at Nord-Est, 21% at Nord-West, 15% at South and Islands and 9% at Centre.

2.5 PNRR: a new look at the GI

Since the beginning of the Covid-19 Pandemic, Europe has been one of the most affected regions (Ismea 2022). To combat the negative consequences of the crisis, the European Union (EU), through the Next Generation EU (NGEU), the Multiannual Financial Framework (MFF), the Recovery and Resilience Facility (RRF), and other complementary initiatives, has committed around 1.8 trillion euros to sustain the post-pandemic social and economic recovery. In particular, the RRF aims to mitigate the economic and social impact of the Covid-19 pandemic and make European economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transitions.

To benefit from the support of the RRF, Member States have to submit their National Recovery and Resilience Plans (NRRPs) to the European Commission. Once submitted, the Commission assesses Member State's recovery and resilience plans within two months after submission and translates their content into legally binding acts. Based on a proposal by the Commission, the Council has four weeks to adopt the Commission proposal. The Council's approval paves the way for the disbursement of a 13% pre-financing. The program sets six main areas of intervention (Pillars) on which the NRRPs, should focus on. These are: • Green Transition; • Digital Transformation; • Smart, sustainable and inclusive growth; • Social and Territorial cohesion; • Health and economic, social and institutional resilience; • Policies for new generations, women, children and young people.

On April 28th 2021,following the European initiative, the Italian Parliament approved the so called 'Piano Nazionale di Ripresa e Resilienza' (PNRR) – "Italia Domani" (Italy Tomorrow), which foresees reforms and investments to be implemented in the span of the next five years in key sectors, articulated and structured according to the six Pillars mentioned above. In this regard, it is important to note that, pursuant to the art. 1 of the Italian Law Decree No. 77 of 2021, converted into Law No. 108 of 2021, "for the purposes of the present Decree and its implementation, the national interest in the prompt and timely execution of the actions included in the PNRR assumes predominant relevance".

Its core component is the abovementioned RRF, which has a duration of six years, from 2021 to 2026, and a total cap of 672.5 billion euros (312.5 of grants and the remaining 360 of low-interest loans).

The PNRR develops along six core missions:

A. "Digitalization, Innovation, Competitiveness, Culture and Tourism":

- 49 billion euros will be allocated to complete the digital transformation of the country, support the innovation of the industrial system, break down the regulatory instability and invest in tourism and culture.

B. “Green Revolution and Ecological Transition":

- 68.6 billion euros will be allocated to improve the sustainability and resilience of the economic system and ensure a fair and inclusive environmental transition.

C. "Infrastructures for sustainable mobility":

- 31.5 billion euros will be allocated to develop a modern, sustainable transport infrastructure extended to all areas of the country.

D. "Education and Research":

- 31.9 billion euros will be allocated to strengthen the education system and the research/technology transition.

E. "Inclusion and Cohesion":

- 22.6 billion euros will be allocated to facilitate and strengthen active policies of job placement and to promote social inclusion.

F. "Health":

- 18.5 billion euros will be allocated to enforce local prevention, modernize and digitalize the health system and ensure the access to equal care for all.

Summing up, the PNRR is expected to have a significant impact on the economic growth of the country with a GDP (Gross Domestic Product) 3.6% higher and the employment rate 3.2% higher by 2026.

Going more in deep in the “Green Revolution and Ecological Transition" that the PNRR wants to pursue, the director of Qualivita Foundation, Mauro Rosati, explains that Italy is going through some important challenges, from the ecological transition to the “Farm to Fork” that will have a relevant impact on the production sector. The goal is to allow the quality agrifood products to face and win these challenges keeping the leadership on the markets. The key point is to understand that the tools that have been adopted in the past and have determined the success of the GI economy, so the importance of the origin, the link with the territory, the history and the quality certified, are not enough anymore; there is the need of something else.

Regarding the GI, the PNRR has allocated funds of 500 billion of euro to develop projects in order to foster the continues growth of the quality agrifood products, leading the creation of at least 20.00 jobs and creating the positive externalities from an environmental point of view with an ecological transaction of the country.

Another strategy adopted is the Farm to Fork strategy, it is at the heart of the European Green Deal aiming to make food systems fair, healthy and environmentally friendly. It aims to accelerate the transition to a sustainable food system that should:

- have a neutral or positive environmental impact
- help to mitigate climate change and adapt to its impacts
- reverse the loss of biodiversity
- ensure food security, nutrition and public health, making sure that everyone has access to sufficient, safe, nutritious, sustainable food
- preserve affordability of food while generating fairer economic returns, fostering competitiveness of the EU supply sector and promoting fair trade

Figure 1 Farm to fork

The strategy sets out both regulatory and non-regulatory initiatives, with the common agricultural and fisheries policies as key tools to support a just transition.

3: Data and methods

3.1 Research background

3.1.1 History of the product

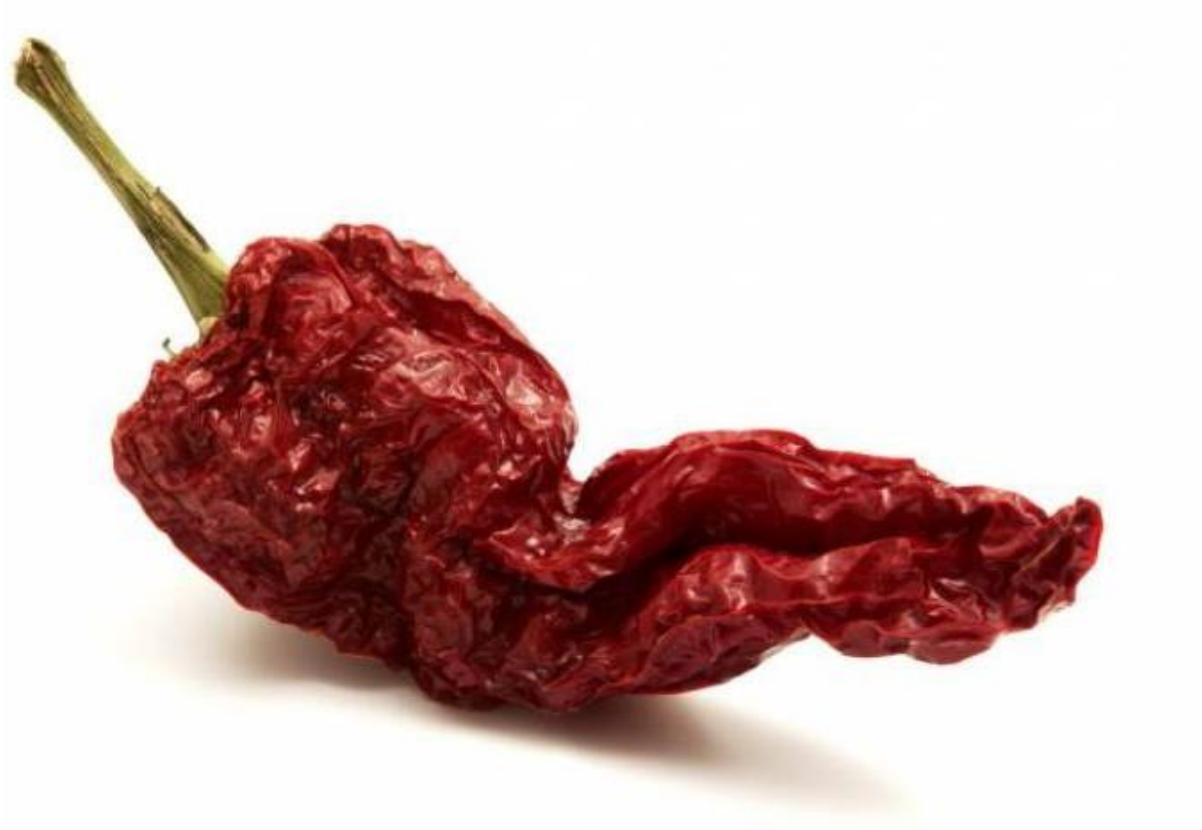


Figure 2 The Crusco pepper

Senise pepper origin is still today debated, the historians collocate it in America, in the Antilles; Christopher Columbus was credited with preserving large quantities of this vegetable for its healing properties on one of the three caravels. On the other hand, local legends collocate it in the Caribbean islands and then it was imported in Italy by the Aragonese, Spanish merchants traveling between the Americas and Europe in the 16th-17th century.

Since about 1500, this type of pepper found a perfect environment, favourable to its cultivation, in the Senise soil both because of the climatic conditions and the abundant water reserve. It is a fact that the "crusco" pepper, or crunchy pepper, has become a unique feature of Basilicata over the centuries.

The Senise pepper was produced autonomously by every family, the seeds were really cheap and easy to cultivate. During spring the pepper was cultivated and during the first weak of august the crop was harvested. The Senise pepper was, and it is the same nowadays, consumed exsiccated and

then fried. The exsiccation was considered a women job and is the longer part of the process. After the harvest was properly washed and dried, the women tied the peppers onto long strings (called serte), threading the string through the stalk of each pepper, then hanging them up to dry outside. Senise peppers have very thin skins and not very much flesh, so they take very little time to dry completely in the baking heat of the Basilicatan sun.

This is the process that transforms these peppers into cruschi – as they're known locally. Once the peppers are completely sun-dried, they're fried briefly in oil until they go crunchy.

Figure 3 The serte

Once the peppers have been picked in August, they're strung up in the streets of nearby towns and villages to dry out in the summer sun.

Figure 4 The exsiccation process

Every August long strings of peppers line the streets of Senise. These long, red, peppers will soon be crushed into ‘Basilicata gold’ – a spice powder that forms the base of many of the southern Italian region’s iconic dishes. They are purplish red in color, and despite the fact that they look like chilis, Senise peppers are sweet.

Figure 5 Senise

Once the product was completely dried out, it was for one part stored for the family personal use and the other part was sold.

The Senise pepper lends itself perfectly to the transport thanks its light weight so that with the use of a handcart the paterfamilias (the father of the family) was able to carry a large quantity of product to be sold in the villages nearby.

The construction of the Monte Cotugno dam in the 1980s, brought a substantial change in the surrounded environment from both climate and society point of view. The dam with his 530 million cubic meters of maximum capacity, is the biggest dam in Europe in day. It has been built between 1970 and 1982 blocking the course of the Sinni River, the barrier wall is 1850 meters long, 60 meters high and 260 meters wide. The realization of the Monte Codugno dam has caused a loss of 700 hectares of fertile land, cultivated with vegetables of various kinds, first among all the Senise pepper. The Senise inhabitants have fight with all the legal methods to avoid the construction of the dam to do not lose important fertile plots of land which are one of the few economic sustain for lots of families. Fortunately farmers relocated most of the peppers to new terrain, and Senise peppers have since been awarded IGP status, meaning that their cultivation in the area is now protected by law.

Figure 6 The Monte Cotugno dam

The society has adapted to this change, the pepper production has become more difficult due to the numerous pathogens that the plant can incur so nowadays it's cultivated by experts and firms and no longer by the normal farmers.

3.1.2 Analysis of the territory

Figure 7 Italy *Figure 8 Basilicata*

Basilicata covers an extensive part of the southern Apennines, between the river Ofanto in the north and the Monte Pollino massif in the south. It is bordered on the east by a large part of the Bradano depression which is traversed by numerous streams and declines to the coastal plains on the Ionian Sea. The region has a short coastline on the Tyrrhenian side of the peninsula.

Basilicata is the most mountainous region in the south of Italy, with 47% of its area of 9 992 km2 covered by mountains, whereas 45% is hilly and 8% is made up of plains.

Geological features of the region include the volcanic Monte Vulture and the seismic faults in the Melfi and Potenza areas in the north and around Monte Pollino in the south. There is also a problem of landslides, which are caused not only by the lithological structure of the substratum and its chaotic tectonic deformation, but also by the lack of forested land.

The variable climate is influenced by three coastlines (Adriatic, Ionian and Tyrrhenian) and the complexity of the region's physical features. The climate is continental in the mountains and Mediterranean along the coasts.

A natural environment almost still unpolluted it’s one of the biggest strength of Basilicata, furthermore there are very interesting historical and archaeological remains, with some sites of world-wide renown, like Matera stones; a low standard of organised criminality, which has favoured the installation of big firms (Parmalat, Ferrero, FIAT, Natuzzi); agriculture, no longer used for subsistence farming (especially in the 'key' areas) but geared towards the market;

On the other hand Basilicata is characterized by having a low level of sharing in the working market and unemployment rates above the national average; the subdivision of landholdings, particularly in the interior; difficulty of access caused by the hilly relief of the region; a weak productive system because of lacking infrastructures.

Basilicata comprises two provinces, Potenza and Matera, which for historical reasons have different dialects. The dialect in the villages close to Apulia, from Matera to Melfi, is generally Pugliese while in the western part of the region the dialect is closer to that of Campania. The dialect along the Tyrrhenian coast is different from that spoken in the villages of the Sinni basin. Other dialects are found in the villages of the middle Basente valley, in the valley of Camastra and among the Albanian communities.

In the same way as its language, the economic structure of the villages in the region is geared to Apulia in the east and to Campania in the west.

Figure 9 Senise skyline

Senise is located in south-west of Basilicata in province of Potenza, it's a village of 73,8 /km² with 7127 inhabitants. The socio-economical tissue of the village is mostly based on agriculture and livestock.

Figure 10 Pollino National Park

Most of the region's peppers are grown in and around the beautiful Pollino National Park, pictured above.

3.1.3 Biochemical analysis of the pepper

Sweet peppers (genus Capsicum) are an excellent source of health-related compounds, such as ascorbic acid (vitamin C), carotenoids (provitamin A), tocopherols (vitamin E), flavonoids and capsaicinoids. These compounds are known for their biological activities, including antioxidant, anti-inflammatory and anticarcinogenic properties.

Among fatty acids found in Peperoni di Senise PGI peppers, there are species like [C16H31O2]-, [C18H33O2]- and [C18H31O2]-, probably corresponding to the most abundant fatty acids in red pepper, i.e. palmitic, oleic and linoleic acids, respectively, whose everyone is connected to other spots by different building blocks, such as H2 (hydrogenation), CH2 (methylene addition) and C6H10O5 (hexose addition), thus suggesting there is more to discover about fatty acid profile of this kind of sample.

Senise Pepper PGI show common features to other red pepper cultivars too, but there is the presence of a higher number of derivatives belonging to identified metabolite classes, supporting the idea that red pepper metabolites could undergo to unexplored biochemical pathway.

Overproduction of oxidants in the human body is responsible for oxidative stress, which is associated with several diseases. High intake of vegetables and fruits can reduce the risk of chronic diseases, as they are sources of bioactive compounds capable of contrasting the free radical effects involved in cancer, obesity, diabetes, and neurodegenerative and cardiovascular diseases.

Capsicum annuum L. cv Senise is an important source of polyphenols, carotenoids, and capsinoids and can play a key role in human health. Fruits of *C. annuum* cv Senise were extracted by exhaustive maceration with absolute ethanol achieving an extraction yield of 11.70% *w*/*w*, similar

to that reported by Loizzo et al. who showed that ethanol improved the yield of pepper extract compared to exane (9.8 ± 0.8% vs. 0.5 ± 0.06%) .

The potential health benefits of *C. annuum* L. cv Senise dried pepper have been demonstrated by Loizzo et al.. In particular, the authors demonstrated the good radical scavenging activity of an ethanol extract against two synthetic radicals, DPPH and ABTS (IC_{50} = 55.0 ± 1.8 μg/mL, TEAC value = 12.6 ± 1.1, respectively). These components protect cells from oxidative stress, reducing intracellular ROS, by activating transcription factors that induce the expression of antioxidant enzymes. These beneficial effects could be ascribed to the presence of health-promoting compounds that were evaluated for the first time in Senise dried pepper. In particular, qualitative analysis performed with LC-MS/MS identified 24 compounds belonging to polyphenols, carotenoids, capsinoids, and vitamins.

3.1.4 Preparation phase

The production process is carried out entirely by hand: from transplanting to harvesting, to the stringing phase (where the peppers are tied into strings), and drying, which is done using natural methods to ensure greater quality and authenticity of the product. The harvest begins between late July and early August (depending on the progress of the summer season); during this period, the product reaches its maximum ripeness. Subsequently, there is the drying phase, performed in well-ventilated areas that comply with current sanitary regulations, indirectly exposing the typical strings called "serte" to the sun. All these stages are carried out in accordance with the controls specified in the production regulations of Senise Pepper PGI. Once the proper drying is achieved, the peppers are selected and fried in extra virgin olive oil to become Crusco pepper, which means "crispy" in the Senise dialect.

The “disciplinare” of the production of the Senise Pepper PGI sets rules of sowing technique and cultivation practices to follow.

- Sowing:

  Timing: third decade of February - second decade of March;

  Sowing methods:

  - Manual broadcasting on seedbeds in "cold" or "warm" beds;
  - Mechanical sowing in cell trays;

- Transplanting:

  Timing: second decade of May - first decade of June;

  Transplanting methods:

  - Planting in pre-prepared holes;
  - Planting in holes made with wooden stakes;

  Plant size: Seedlings with 3rd to 5th leaf and height of 10-15 cm.

  Planting spacing:

  - Single row: 25-30 cm along the row and 70-80 cm between rows;
  - Double row: 35 cm along the row, 35 cm between the two double rows, 120 cm between two double rows;
  - Raised beds: 35 cm along the row and 40 cm between rows.

- Treatments:

Scheduled treatments are excluded.

- Irrigation:
  Irrigation interventions: variable depending on the climatic conditions;
  Irrigation systems:
  - Surface irrigation;
  - Sprinkler irrigation;
  - Drip irrigation.

- Harvest:
  Harvest timing: starting from the first decade of August when the berries reach the typical reddish-purple color;
  Harvest methods: due to staggered ripening, the harvest is done manually.
  The seeds used for reproduction must come from healthy mother plants, selected within fields located in the municipalities mentioned in Article 3.

- Processing Practice:

1. The product must be harvested when fully ripe.
2. The berries must be laid on fabric sheets or nets in dry and well-ventilated areas for at least 2-3 days, away from light.
3. The peduncles (stems) must be threaded in a series using fine twine, arranging the berries in a spiraled angle of approximately 120 degrees from one another. This will create the characteristic "collane" or "serte" (strings).
4. The strings must be exposed to the sun until the water content reaches 10-12%. Afterwards, they should be stored in well-ventilated areas.
5. After the drying phase, the peppers must undergo an oven treatment to eliminate residual moisture and facilitate subsequent grinding.
6. The product must be transformed into powder through grinding.

3.1.5 Recipes: user manual

Their sweetish flavour makes them a perfect starter dressed with just a drizzle of extra virgin olive oil, but cruschi peppers are also an ideal ingredient for first and main courses.

Also special with salt cod, a must in the local cuisine. And again, fried with egg and sausage, combined with boiled potatoes and sautéed vegetables, combined with cold meats and cheeses, the "cruschi" are the pride of Lucanian cuisine.

In August he the protagonist of the festival "Le giornate del Peperone di Senise. U Strittul ru Zafaran" in his numerous culinary variations.

Not just fresh or dried, this pepper can also be used in powder form. In that case it is known as "Zafaran p'sat" (a word in dialect for saffron) because it looks like normal saffron, and is used in aged salami to add flavor and a pleasant color. This red saffron is used to season pasta: the traditional dish "Rasccatell cu Zifft" is made with cavatelli, a typical local pasta rolled by hand, with oil and Senise pepper powder. Another recipe is "Strascinato mollicato", which is fresh pasta with bits of pepper and sprinkled with toasted breadcrumbs. Then there's also salted ricotta with diced dried peppers. These peppers are rich in health benefits and contain a lot of vitamin C – 30% more than other types.

It is important to never wash Senise peppers before eating them–just wipe them with a dry cloth.

Instead of fiery heat they boast a wonderful sweetness, along with a pronounced smoky, nutty flavour when dried.

3.2 Semi-structured interviews

The drafting of a questionnaire represents the crucial phase for every type of survey since it is a primary source of data to analyse. A good questionnaire must be clearly formulated, easy to understand and direct to the point in order for the candidates to do not have misunderstanding, furthermore it must be objective and as shorth as possible coherent to the type of analysis to conduct. It is fundament to inform the interviewed that their privacy will be protected, so they can feel free to express themselves freely.

There are 20 firms in the consortium and the sample that has been taken in consideration is composed of 14 firms that have the production of the Senise pepper PGI as their primary source of profit. All these firms have small dimensions, just 3 of them have bigger dimensions and so it has been possible to report their structure.

The collection of data has been made through a semi-structured interview during local meeting with each farmer, the method used has been to make common questions to each farmer of the sample. This has made feasible the accessibility of qualitative and quantitative data.

At the beginning of the interview general questions have been asked like the history of the pepper, the production phases and tools, the reason why they have decided to invest in this market and so on. Later more economic questions have been asked like the selling price of the product, the costs of production, the percentage of loss during the production and the productivity per hectare.

3.3 Firms' analysis

Company name	Azienda agricola vivai di Pennella Giuseppe
Registered address	Senise (PZ) Contrada Sicileo CAP 85038
Legal form	Sole proprietorship
NACE economic activity code	a) Main economic activity of the company Code: 01.13 – Growing of vegetables and melons, roots and tubers b) Secondary activity Code: 81.3 – Landscape service activities
Company officials	Pennella Giuseppe – owner with power of signature
Employees	1st quarter: 8 employees, 1 free-lance 2nd quarter: 8 employees, 1 free-lance 3rd quarter: 21 employees, 1 free-lance 4th quarter :14 employees, 1 free-lance Average value: 13 employees and 1 free-lance
Latest deposited	31/12/2022

balancesheet	

Company name	Società agricola Tenuta Dipal SRL
Registered address	Francavilla in Sinni (PZ) contrada san domenico snc CAP 85034
Legal form	Limited Liability Company
Share Capital	10000.00 £
Economic activity	a) Main economic activity of the company Growing of vegetables and melons, roots and tubers b) Secondary activity Growing animal feeding
Company officials	Daniele Di Nubila – sole director and partner Palermo Marilena - partener
Employees	1st quarter: 4 employees, 0 free-lance 2nd quarter: 4 employees, 0 free-lance 3rd quarter: 4 employees, 0 free-lance 4th quarter: 4 employees, 0 free-lance Average value: 4 employees and 0 free-lance
Latest deposited balancesheet	31/12/2018

Company name	Azienda agricola Casata del Lago SRL
Registered address	Senise (PZ) Contrada Pianizzi SNC CAP 85038
Legal form	Limited Liability Company
Share Capital	10000.00 £
Economic activity	a) Main economic activity of the company Growing of vegetables and melons, roots and tubers
Company officials	Armentano Guglielmo – sole director and 80% shareholding Armentano Maria Francesca – 20% shareholding
Employees	1st quarter: 5 employees, 0 free-lance 2nd quarter: 10 employees, 0 free-lance 3rd quarter: 15 employees, 0 free-lance 4th quarter :7 employees, 0 free-lance Average value: 9 employees and 0 free-lance
Latest deposited balancesheet	31/12/2022

4: Results and discussion

4.1 Evolution of the market over time

The goal of this thesis is to study the impact that the PGI label has on the market from an economic, social and cultural point of view. At this point of the thesis, it is possible to state that for sure the PGI has bring a development for the Basilicata region.

The Senise pepper was in the origin produced by common farmers just for their personal need. Low effort was put in the harvest of this product because it was easy to cultivate it since the ideal climate conditions. After few decades, the locals realized that it was possible to commercialise the pepper since it was light and so easy transportable. At the time the market was completely different from the current one, the pepper costs of production were really low since no machines and workers, the fertilizers were the only costs that they had, this implies a really low selling price and sometimes it did not even covered the costs since the consumers demand was low because almost everyone had his own production of pepper at home. Things started to change when the society itself started to change and the needs were different. The turnover point occurred during the post-World War II and the Feminist Movement; after the wars, many women left the workforce as men returned from military service. However, the feminist movement of the 1960s and 1970s called for gender equality and equal opportunities for women in employment. This period sparked increased female labour force participation as more women pursued careers and entered professional fields.

In the decades following the feminist movement, women's participation in the workforce has continued to rise. Cultural shifts, changes in family dynamics, improved access to education, and legal protections against gender-based discrimination have all contributed to women's increased presence in various industries and professions.

With both partners working, household dynamics have evolved. There has been an increased demand for convenience-oriented products and services that help manage busy lifestyles. This includes ready-to-eat meals, meal delivery services, cleaning services, and online shopping. The women no longer had time to grow their own pepper so the need of buying the product leading to an increase in demand.

The prevalence of dual-income families has increased, leading to higher household incomes. This has influenced spending patterns, with an emphasis on quality products, luxury goods, travel, and experiences.

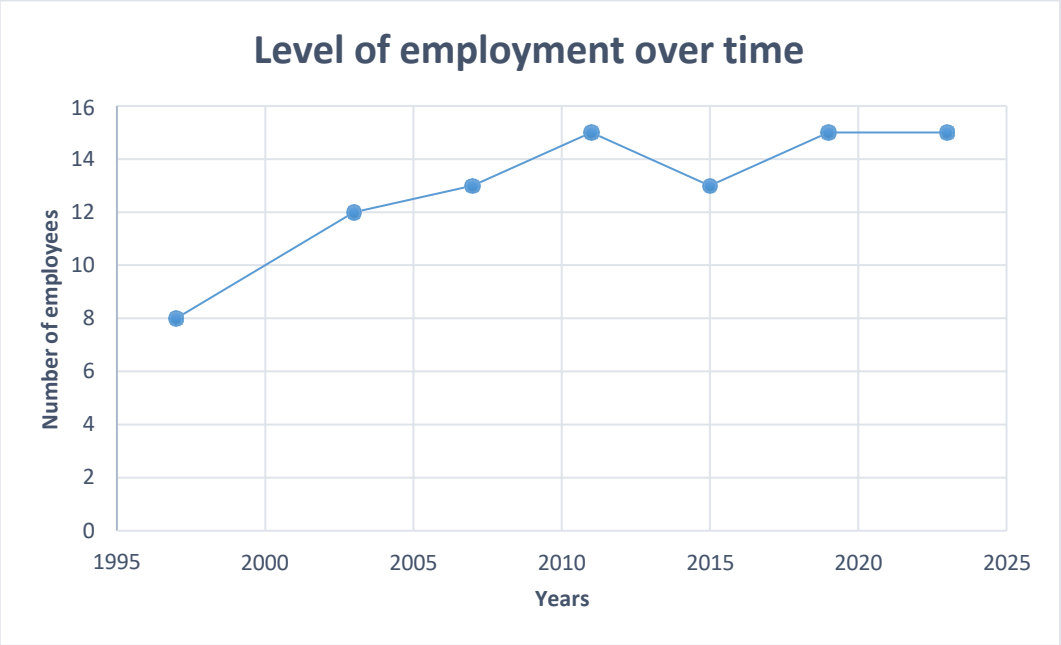
The production of the Senise pepper become a real job, the farmers become entrepreneurs, so the need of employees, knowledge of the product, the costs of the machines and the increase in price.

The 1983 was a milestone for the Senise pepper market since the construction of the Diga di Montecotugno changed the microclimate of the Senise area making hostile the natural growth of the pepper. Agronomi and other professional figures were called to help with the production and avoid the loss, the farmers entrepreneurs started to understand the real importance and the unique characteristics of the Senise pepper since it is in Italy the only sweet pepper with those physical and chemical characteristics. The 18 of December 2003 the Senise Pepper got officially recognised as a PGI product, but the consortium did not start to operate right away, it took 8 years, so till the 2011, for it to organise and put theory in practice.

What is been recorded highlights the importance of the PGI label to boost the price and the development of the area and region. The region has issued founds for young under 30 years old to invest in the market, this has led in and increased of employment and product production. Nowadays the Senise pepper PGI has become the symbol of the Basilicata region, the product is sponsored during fair and trough important restaurants.

Crucial is the designation of Matera as the European Capital of Culture in 2019. This prestigious title is awarded to a European city every year to showcase its cultural richness, promote intercultural dialogue, and foster social and economic development. Matera was chosen for its extraordinary history, unique cultural heritage, and its capacity for transformation and revitalization. As the Capital of Culture, Matera hosted a diverse range of events, performances, exhibitions, and cultural projects throughout the designated year. These activities aimed to engage the local community, attract visitors from around the world, and highlight the city's cultural offerings. Matera's designation as the Capital of Culture helped to raise international awareness of the city and its cultural, artistic, and architectural heritage. It also provided opportunities for collaborations, cultural exchange, and the development of sustainable cultural initiatives. The designation of Matera as the European Capital of Culture has left a lasting impact on the city, contributing to its ongoing cultural development, tourism growth, and its reputation as a center of artistic and cultural excellence. Since the importance Matera has achieved during these last few years, the Senise pepper PGI market has used it as a springboard to sponsor its product and spread its market. Nowadays the major regions in which the pepper is exported and consumed is Basilicata and Lazio.

A critical point that obstacle the growth of the Senise pepper PGI market is the availability of employees.



Graph 2 Level of employment over time

Analysing the graph changes during the key years is it possible to notice that after 1997 there has been a boot in the number of employees from 8 to 12, the major factor affecting this change it is been the change in society. Another boost has occurred after 2003 so when the Senise pepper received the PGI label, during this period there has been a change in the firm structure, the farmers have become an entrepreneurs and more hectares were produced. The peak year is 2011 during which the consortium really starts to operate, an increase in demand is registered so more product it is produced therefore the need of having more employees. Looking at this graph what is important to notice is date since 2011 the number of employees is not increased over time even though the demand has risen. The reason behind it is to search it in the difficulty of the owners to find the workforce especially during the harvest this is because Italians prefer to have a more stable job they have a low level of switching point, on the other hand the foreign workers are difficult to be found and they rarely stick in on city till the next year harvest. This situation explains why the demand is growing but the production is not.

4.2 Costs\Benefits analysis

Accounts	Average	Mode	Minimum	Maximum	Standard Deviation
Variable costs					
Depr. Costs (machinary)	3,333.33	2,857.14	4,000.00	2,500.00	150.58
Sesonals workers cost p/year	14,400.00	15,000.00	9,000.00	18,000.00	3,011.98
Fixed costs					
Loss of product	1,500.00	1,500.00	1,000.00	2,000.00	316.23
Employees costs	23,400.00	24,000.00	22,000.00	25,000.00	1,024.07
Water costs	290.00	300.00	200.00	350.00	132.66
fertilizers p/hectar	4,900.00	5,000.00	4,000.00	5,500.00	489.90
quantity seeds p /hectar	45,000.00	54,000.00	30,000.00	57,000.00	12,296.34
price for seed p/unit	0.24	0.24	0.20	0.32	0.04
Cost p/hectar	10,800.00	12,960.00	6,000.00	18,240.00	4,298.61
Total Costs					
	58,623.33	61,617.14	45,201.00	71,590.00	
Benefits					
Selling price p/hectar	97,200.00	99,900.00	86,400.00	108,000.00	
Total Profit*					
	38,576.67	38,282.86	41,199.00	36,410.00	

Table 2 Costs-Benefits Analysis Senise Pepper PGI

Accounts	Average	Mode	Minimum	Maximum	Standard Deviation
Variable costs					
Depr. Costs (machinary)	3,333.33	2,857.14	4,000.00	2,500.00	150.58
Sesonals workers cost p/year	14,400.00	15,000.00	9,000.00	18,000.00	3,011.98
Fixed costs					
Loss of product	1,500.00	1,500.00	1,000.00	2,000.00	316.23
Employees costs	23,400.00	24,000.00	22,000.00	25,000.00	1,024.07
Water costs	290.00	300.00	200.00	350.00	132.66
fertilizers p/hectar	4,900.00	5,000.00	4,000.00	5,500.00	489.90
quantity seeds p /hectar	45,000.00	54,000.00	30,000.00	57,000.00	12,296.34
price for seed p/unit	0.13	0.13	0.12	0.15	0.01
Cost p/hectar	5,850.00	7,020.00	3,600.00	8,550.00	5282.72
Total Costs					
	53,673.33	55,677.14	43,800.00	61,900.00	
Benefits					
Selling price p/hectar	64,400.00	65,960.00	61,600.00	67,200.00	
Total Profit*					
	10,726.67	9,282.86	17,800.00	5,300.00	

Table 3 Costs-Benefits Analysis Senise Pepper

*gross of depreciation, mortgage and taxes

What is evident from this analysis is that the total profits of the Senise Pepper PGI over its competitors are three times higher, on average the PGI product has 38576.67€ total profit while the product without the label has only 10726.67€ total profits. The variable and fixed costs are the same with the exception of the price for seed p/unit that is obviously lower for the pepper without PGI since the certification of the seed adds value on the final product making the price higher.

Regarding the Senise Pepper without PGI the total profits p/year are low but is important to take into consideration that usually the firms in this market are large scale retail trade and organized distribution, they are able to face lower prices by increasing the level of production due to the high demand. Opposite is the situation for the peppers with PGI, they face lower demand because of the high cost, leading the ordinary customer to consume the product at a lower price. This market is composed by farmers with 1 maximum 1.5 hectares so the production quantity is low but it is compensated by the value that the PGI label brings to the product making feasible this increase in the selling price, these are the common characteristics of a niche market.

The selling price of both products refer to the dry Senise pepper that for the PGI is on average of 37€/kg while for the dry Senise pepper without PGI certification is on average of 23€/kg.

Going more in deep in the study of the impact of PGI on the increase in prices, samples on the Burrata of Andria PGI and Nuts of Piemonte PGI have been collected. The end goal is to compare the percentual variation of these three products and understand by how much the Senise pepper PGI prices can grow in the future. All these three PGI products have in common the presence on the market of competitors that sell almost the same product, with very small variations, with the same name and origin without label.

The Burrata of Andria PGI costs on average 22€/kg while the Burrata produced in Andria costs on average 14.36€/kg, the percentual variation is 53,2% so the PGI gives an added value considering that the Burrata of Andria has received the PGI label in 2022.

The Nuts of Piemonte PGI cost on average 7.60€/kg while the Nuts produced in Piemonte cost on average 3.50€/kg, therefore the percentual variation is 117.14% so even in this case is possible to notice the boost in price that the PGI has given in such long period of time since the Nuts of Piemonte have become PGI in 1993, hence the more the PGI catches on in the market the more the product value and price rise.

A similar consideration can be made for the Senise pepper PGI which has a percentual variation of 60.87%, therefore can be assumed that there could be the possibility of increasing the price over time.

4.3 The Industry-based model

In the realm of strategic management, Porter's Five Forces framework has emerged as a vital tool for assessing the competitive forces that shape industries. Developed by Michael E. Porter, this model provides a holistic understanding of industry dynamics and helps organizations make informed decisions regarding their competitive strategy. He states that there are five forces that could affect the positioning of a firm in a particular industry, The Bargaining power of Buyers; The Bargaining power of Sellers; The Threat of Substitutes; The Threat of Potential Entrants and The Threat of Existing Competition. The relative importance of a threat depends from industry to industry.

1) Bargaining power of buyers:

The farmers' major buyers are the restaurants who purchase large volumes, this makes them particularly powerful when facing industries with high fixed costs. The restaurants' impact, expressed in quantitative data, on these farmers profit is up to the 75% . Furthermore, Ho.Re.Ca face a high switching costs because even though the prices of the Senise pepper PGI are more or less homogeneous and the product is homogeneous, most of the farmers act a fidelity price to the buyer so in order to do not loss the costumer and create fidelity relationships with the buyer, thus increasing the value-added and shifting the purchase decision to a product instead of a price-based decision. (Recklies, 2015).

On the other hand, opposite is the situation for the costumers buying a small amount of product. If the restaurant cares more about the quality of the product, the PGI label and the external beauty of the pepper; the common buyer focuses more on the packaging, because, due to its high price, the Senise pepper PGI is usually bought as a present, so the box is important. Another point of contrast that differentiate the two types of buyers is that the average consumer has a low switching cost have with the restaurants is that they have a low switch price because even though the Senise pepper PGI is more controlled, the quality is

higher and the product is authentic, on the supermarket there are bags of peperone crusco at a cheaper price. At the supermarket the buyer finds it at around 5.20 € while on internet the labelled product is sold at 13€

2) Bargaining Power of Suppliers:

Suppliers in the Senise pepper PGI market consist of firms within the Basilicata region. The production of this product implies a limited number of suppliers, almost all the production phases are internalized apart from the packaging and for some firms the frying stage. The suppliers are not able to differentiate their service so for the Senise firms have low switching costs. However, if the demand for Senise peppers exceeds the supply, suppliers may have increased bargaining power to negotiate higher prices. Overall, the bargaining power of suppliers is low.

3) Threat of Substitutes:

While there are other varieties of chili peppers available in the market, the unique flavor and characteristics of the Senise pepper make it difficult to directly substitute. The Senise pepper PGI holds a distinct position in the market, and consumers specifically seek it out for its culinary uses. The competitive advantage that the PGI brings is the determinant factor that makes the threat of substitutes very low. Despite the presence in the market of crusco pepper without PGI denomination at a lower price, it can be considered a real substitute of the real and certified product since the taste

and the consistency of the pepper is completely different and the locals are able to distinguish it. This issue is not present on the international level since is commercialised only the PGI product.

4) Threat of New Entrants:

The Senise pepper PGI enjoys a protected geographical indication, which means that it can only be produced in a specific region (Basilicata, Italy) under specific conditions. This creates a barrier to entry for new competitors, as they cannot replicate the unique qualities and characteristics of the Senise pepper outside of the designated region. Therefore, the farmer that wants to enter in this market could be a local or someone who lives in the neighbouring regions. The cumulative experience and knowledge are another key factor that discourage the entrance of possible competitors. The know-how and the trade secrets of this pepper production are kept and handed down from father to son and between the locals. Despite all these barriers and the high capital requirements, it is not possible to classify the threat of new entrants relatively low because from 2021 the region has allocated substantial funds for young employees under 30 to finance the enter in the market and so increase the production of the Senise pepper PGI. As previewed, there has been an increase in certified farmers from 7 to 14.

5) Competitive Rivalry:

The Senise pepper PGI may face competition from other chili pepper varieties and no PGI crusco pepper both domestically and internationally. The rivalry among existing competitors is mostly internal, the market has a low level of industry growth and concentration, and the brand loyalty is not felt from the consumers. Furthermore, the number of competitors is very low since in the market

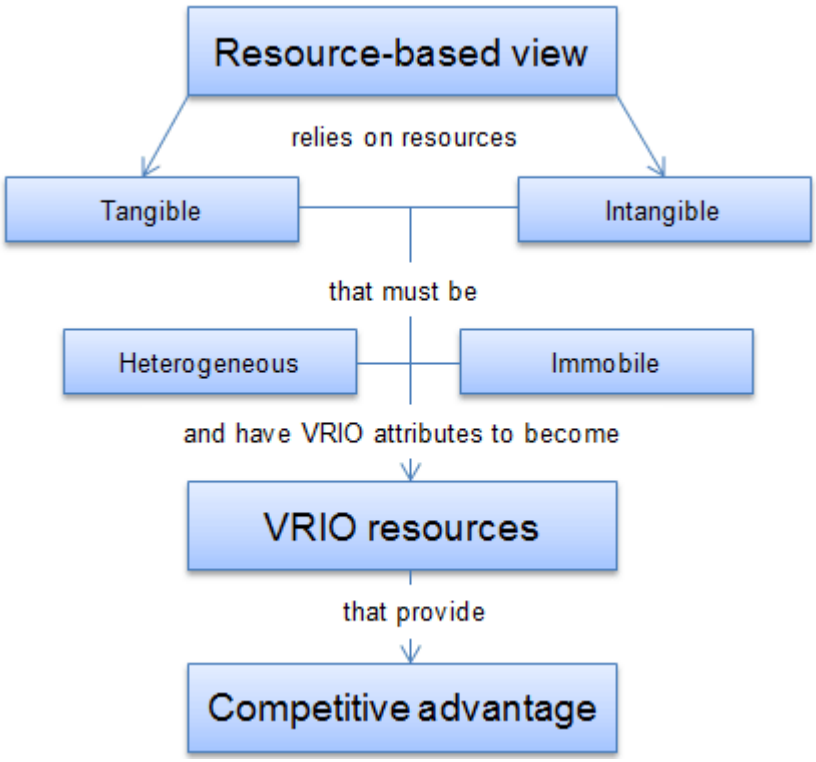
there are only 14 firms. The competitive rivalry within the Senise pepper PGI market is relatively low.

Overall, the Senise pepper PGI benefits from its protected geographical indication, which limits the threat of substitutes, the bargaining power of suppliers and buyers is moderate, the competitive rivalry within the designated region is relatively low but the barriers to entry for new competitors is high because of state intervention. This knowledge enables companies to develop effective strategies, identify opportunities, mitigate risks, and enhance their competitive position. Moreover, the framework encourages businesses to take a holistic approach, analyzing the interplay between external forces and their internal capabilities to achieve sustainable success in a dynamic business environment. Porter's Five Forces analysis remains a fundamental tool in strategic management, guiding organizations toward proactive decision-making and ensuring their long-term viability in a highly competitive marketplace.

4.4 The Resource-based model

The resource-based model is a strategic framework that emphasizes the significance of internal resources and capabilities in achieving sustainable competitive advantage. This model emerged in 1980s and 1990s after the major works published by Wernerfelt, B. ("The Resource-Based View of the Firm"), Prahalad and Hamel ("The Core Competence of The Corporation"), Barney, J. ("Firm resources and sustained competitive advantage") and others. The supporters of this view sustain that a firm's unique bundle of resources can serve as a source of competitive advantage and long-term success. Thus, according to the Resource-based model, a company's resources and capabilities are more critical to determining the appropriateness of strategic actions than are the conditions and characteristics of external environment. By leveraging unique and valuable resources, firms can differentiate themselves, innovate, and create superior value for customers. Core competencies, dynamic capabilities, and a strong organizational culture are vital for successful resource utilization. Sustainable competitive advantage is achieved when firms possess resources and capabilities that meet the VRIN criteria: valuable, rare, difficult to imitate, and non-substitutable. The resource-based model provides valuable insights for strategic decision-making, enabling organizations to assess their internal strengths, develop strategies to capitalize on their unique resources, and create a sustainable position in the marketplace.

The five-step model describes the linkages between resource identification and strategy selection that will lead to above average returns.



Graph 3 Resource based model

Resources:

Resources are the tangible and intangible assets that a firm possesses and can leverage to create value. They can be classified into two main categories:

a. Tangible Resources:

In the case of the Senise pepper PGI the tangible assets are the pepper itself, the land, the machineries (mostly tractors) and the necessary equipment for the cleaning of the product.

b. Intangible Resources:

For this specific case study, the human resources level are very low due to the workforce high turnover level so the time and money spent for training the employees can be considered almost every year a waste.

The two critical assumptions of Resource-based model are that resources must also be heterogeneous and immobile. Heterogeneity of resources refers to the fact that resources and capabilities differ across organizations. For example, in the case of Senise Pepper PGI, the unique geographical location, fertile land, and traditional knowledge possessed by producers in the

Basilicata region provide a distinct resource configuration that sets them apart from other pepper producers. This heterogeneity allows them to offer a product with unique characteristics and command a premium price in the market.

The immobility of resources is the second critical assumption of the resource-based view. In the context of Senise Pepper PGI, the immobility of resources can be observed in the specific knowledge and expertise of the farmers in the Basilicata region. The traditional cultivation and processing techniques, handed down through generations, are not easily transferred to the new firms operating in the same market, The latter are ruled young CEO, that entered the market during the

last few years thanks to the funds under 30 years old issued by the region. This immobility of knowledge and expertise acts as a barrier to entry, protecting the competitive advantage of old Senise Pepper PGI producers.

Overall, the resource-based view assumes that heterogeneity and immobility of resources are critical for organizations to achieve and sustain a competitive advantage. By leveraging their unique bundle of resources, companies can differentiate themselves, outperform competitors, and create value for customers. The heterogeneity of resources allows companies to adopt different strategies, while the immobility of resources prevents easy replication by competitors, reinforcing the competitive advantage.

The last step to analyse the Senise pepper PGI competitive advantage is to study competition according the VRIO framework. It is an extension of the resource-based view (RBV) model and provides a systematic approach for assessing the competitive potential of a firm's resources and capabilities. VRIO stands for Value, Rarity, Imitability, and Organization.

V VALUABLE	R RARE	I INIMITABLE	O ORGANIZED	
NO				COMPETITIVE DISADVANTAGE
YES	NO			COMPETITIVE PARITY
YES	YES	NO		TEMPORARY COMPETITIVE ADVANTAGE
YES	YES	YES	NO	UNUSED COMPETITIVE ADVANTAGE
YES	YES	YES	YES	SUSTAINABLE COMPETITIVE ADVANTAGE

Table 3 VRIO

1. Valuable: The first criterion in the VRIO framework is determining whether a resource or capability provides value to the organization. The resources and capabilities associated with

Senise Pepper PGI are undoubtedly valuable. The PGI designation itself adds value by certifying the origin and quality of Senise peppers, providing reassurance to customers. The unique resources possessed by Senise Pepper PGI producers enable them to create value for customers and differentiate themselves in the market exploiting opportunities. Being a PGI product, the risks are mitigated since the price cannot go down because is under the state control, furthermore the market is composed of just few firms and set the rage of the price during the Consortium meeting.

Considering the entire market of Senise pepper, the product without label does not constitute an obstacle in terms of value for the PGI, therefore the Senise pepper PGI has competitive advantage.

2. Rarity: The rarity criterion examines whether the resource or capability is scarce or unique within the industry or market. In the context of Senise Pepper PGI, even though the product is the same for all the firms in the market, each firm has developed a resource not readily available to competitors. Therefore the Senise pepper PGI has competitive parity.

3. Imitability: Imitability refers to the degree of difficulty in replicating or imitating a firm's resources or capabilities by competitors. In the case of Senise Pepper PGI, the specific knowledge, traditional cultivation techniques, and processing methods are not easily imitated due to their complexity and cultural embeddedness, providing a barrier to competitors. Additionally, the PGI designation provides legal protection against imitation, further safeguarding the uniqueness of Senise peppers.

4. Organization: The organization criterion evaluates whether a firm has the necessary organization and structure to exploit and leverage its resources effectively. In

the context of Senise Pepper PGI, the producers' strong supply chain integration, relationships with local suppliers, and effective distribution networks exemplify the organization criterion.

By applying the VRIO framework to the resource-based model, organizations can systematically analyze their resources and capabilities to identify potential sources of competitive advantage. The Senise pepper PGI meets the VRIO criteria (value, rarity, difficulty of imitation, and effective organization) therefore firms have sustainable competitive advantage.

Understanding the VRIO characteristics of resources allows firms to focus on leveraging their unique and valuable resources, enabling them to differentiate themselves, outperform competitors, and create value in the marketplace.

4.5 From management marketing to agri-food marketing

Although the initial developments of marketing thinking were observed in the early twentieth century in the United States, it took a long time for agricultural products to become the subject of discussion. Over time, the theme of agricultural marketing has been increasingly appreciated by both public and private operators in the sector, precisely because they have recognized in this discipline a real possibility to increase the value of agri-food offerings and improve relationships with the market itself (Prestamburgo S., Torquati B., 2004).

The growing attention to the application of marketing to the agricultural sector is also due to the significant changes in the political and economic environment that were affecting the sector, calling on companies to quickly change their business strategies. Consider the profound evolution that the Common Agricultural Policy underwent first through the Mac Sharry Reform in 1992 and even more so through the reforms introduced by Agenda 2000, through which the European Community intelligently oriented its agricultural policy for the future, implying a significant and progressive reduction in public support for the agricultural sector. In addition to this shift in the European direction, other factors such as changing consumption patterns, dietary lifestyles, and the progressive liberalization of international trade in agri-food products have led companies in this sector to recognize the need, in order to remain competitive in the domestic and international markets, to use a series of tools that allow them to conduct in-depth market and consumer analyses, thus initiating a true marketing approach.

Understanding the motivations that led agricultural enterprises to begin orienting themselves towards marketing, it is important to explain why it was not possible to adopt the same principles

and methodologies of marketing management for the discipline of agri-food marketing. As highlighted by Ritson in 1997, "the concept of agricultural marketing is not configured as an application of the principles and methodologies of marketing management to agricultural products, but rather as a branch of applied agricultural economics, whose areas of analysis concern the issues of the agricultural product market, price trends, public intervention policies, distribution system efficiency, etc."

The need to adopt a dedicated and specific approach to agri-food marketing finds its explanation in two additional factors of utmost relevance (Prestamburgo S., Torquati B., 2004):

1. The consumption process of agri-food products: Unlike other products, food products have a much closer impact on consumer sensitivity since they are ingested, and their consumption is essential for human survival. Furthermore, given the increasing consumer perception of the correlation between the sensory and nutritional characteristics of the product and individual health, there has been a significant increase in consumer attention to issues related to food consumption and safety. In such a context, agri-food marketing plays an important role in "increasing consumer confidence in agri-food offerings and reducing the perceived level of risk associated with food consumption," all through clear and adequate information regarding product quality and production processes used (Prestamburgo S., Torquati B., 2004). However, considering the importance of factors such as quality, perceived risk, and the need for greater trust in the agri-food system, using a traditional marketing approach does not seem to be the best method for understanding the complexity of agri-food consumers from a behavioral perspective, nor is it the best approach for agri-food companies to plan appropriate strategies.

2. The link frequently created between public regulation and marketing policies: This refers to the relationship established through collective community trademarks, such as Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), and organic production labels, which certify the particular quality and safety of certain productions. In this case, the use of a collective trademark allows consumers to be guaranteed in terms of quality, and through adequate marketing policies, it enables the transmission of genuine value signals.

Considering the reasons why the traditional marketing management approach could not be adopted for the agri-food sector, it is necessary to consider two additional fundamental elements that have contributed to the development of agri-food marketing over time: relational marketing and social marketing.

Relational marketing has played a significant role in the operational and conceptual development of agri-food marketing due to the need to manage and coordinate the dense network of relationships among different actors in the production chain. This approach, developed in Europe in the early 1980s, aims to "initiate, negotiate, and manage exchange relationships with key interest groups in order to pursue sustainable competitive advantages in specific markets, based on long-term agreements with customers and suppliers" (Bottinelli L., 2004). Unlike marketing management, which focuses on individual transactions (hence also called "transactional marketing"), relationship marketing is based on the need to create stable and long-lasting relationships with customers through policies that increase their loyalty. Relationship marketing, therefore, has a long-term orientation, and it is important to adopt all the necessary policies, such as communication, offered services, etc., to establish long-term relationships based on consumer trust.

Social marketing has also become significant for the development of agri-food marketing. According to the philosophy of societal marketing, a concept introduced by Philip Kotler in the early 1980s, a company has the task of satisfying various consumer needs better than competitors, but "in ways that preserve and enhance consumer and societal well-being" (Kotler P., Scott W.G., 1993). In this perspective, marketing should not aim to maximize consumption levels but to increase the well-being of individuals and society as a whole over time. Following this type of approach, it is possible to assert that agri-food marketing can contribute to improving societal well-being, considering the close relationships between agri-food products and individual health, as well as the environment and production techniques (Prestamburgo S., Torquati B., 2004).

The functions of agri-food marketing can be identified and summarized as follows (Foglio A., 2001):

1. Analysis and research: Before embarking on any marketing strategy, it is necessary for the company to research and gather all the necessary information regarding the market, competition, consumers, distribution channels, promotional and communication possibilities, etc., to achieve a positive outcome.
2. Animation and promotion: It is the task of marketing to stimulate market demand through the main elements of the marketing mix.
3. Planning: The marketing strategy should develop within a planning framework that takes into account the company as a whole.

4. Organization: To adopt a successful marketing strategy, all company functions must work towards a common goal. In this sense, marketing is defined as "order and coordination," capable of organizing and balancing the company's actions.

5. Control: Control is another fundamental aspect of marketing because only through constant monitoring of what is happening can deviations from the predetermined objectives be understood, allowing for appropriate corrections.

Through these marketing functions, an agri-food company is able to effectively deal with the real dynamics of an increasingly complex and dynamic market, as well as respond with greater awareness and decisiveness to the evolving needs of consumers.

4.6 Marketing Mix

Once a company has determined the market in which it operates, it is necessary to plan how to intervene in that market, implementing a comprehensive marketing mix program. The marketing mix can be considered as "the company's choice of how it intends to present itself to the market and to a specific segment, in practice, it is the intervention program developed to meet the needs of penetrating a market or consolidating within it" (Foglio A., 2001).

In various economic literature, the classic elements of the marketing mix are summarized as the "four Ps," namely Product, Price, Place, and Promotion:

1. Product: The product represents the central point around which all company activities revolve, including research, innovation, marketing, communication, etc. It is also the most crucial element of the marketing mix as all others are strongly dependent on it. A successful product must meet the needs of the market and consumers. Without this condition, leveraging the other elements of the mix, such as achieving a good selling price, effective distribution, and impactful communication and promotion, would be futile. Therefore, the product is the key to a company's success, serving as the foundation for developing the other elements of the marketing mix.

   In the agri-food sector, Antonio Foglio (2001) identified some important characteristics for a product's success in the market, such as quality and product presentation (packaging). Quality is an indispensable attribute for an agri-food product, especially considering the increasing consumer demands. Quality should be seen not only as safety, goodness, or authenticity but rather as excellence, manifested through naturalness, a particular production

process, and the origin of raw materials. Quality should be the cornerstone on which all marketing actions aiming for market penetration and successful company consolidation are based.

The Senise pepper PGI is a high-quality product, meeting the standards and characteristics defined by the PGI certification. This includes attributes such as unique flavour, aroma and colour particular emphasis is up on the traditional cultivation methods, authenticity, and regional heritage. It can be considered a niche product.

2. Price: Price is the element of the mix that determines the company's positioning in the market, as well as the perceived value of the product by consumers. It is essential to remember that price remains the primary discriminating factor within demand. For example, the consumption of certain food products is naturally correlated with consumers' standard of living. Price can also contribute to shaping the product's image and differentiate the company from competitors. Given equal quality, a higher price can better position an agri-food product in the market. Consumers often associate a higher price with higher quality, simplifying their purchasing decisions. However, this perception goes beyond the product's qualitative value and reflects a well-studied outcome that considers other significant aspects, such as the target market segment, product positioning, communication investments, promotions, etc. It is important to note that price can influence all other elements of the marketing mix. Therefore, it can be stated that only with an appropriate price can a successful marketing mix program be implemented. An adequate price refers to one that not only allows for the remuneration of production factors but also enables effective and efficient distribution, adequate product development over time, and suitable communication and promotion programs.

   The Senise pepper PGI price is high compared to an average pepper, since it is a niche product no discounts tools are use to face the competitors. Position it as a premium product due to its PGI status, quality, and distinctiveness. Consider offering different packaging options or sizes to cater to various consumer preferences and price points.

3. Place: The third element of the mix relates to distribution and sales, specifically the movement of the product from the company to the end consumer. Choosing how and where to distribute a product is neither simple nor straightforward, as it depends on factors such as the product's nature, the target market, and the company's structure. Extensive marketing studies are dedicated to developing a sound distribution strategy, as this phase represents the primary interaction between the company and the market. There is no single effective

solution for distribution in the market, but it is crucial for agri-food companies to meet consumer needs by "delivering their products in the best conditions and in the greatest number of retail outlets" (Foglio A., 2001). Only in this way will the distribution and sales element of the marketing mix become a fundamental factor and globally improve the entire marketing program developed. Regarding this aspect, another fundamental issue concerns the choice of the most suitable distribution channel to meet market needs. This choice depends heavily on the type of company, product, industry sector, and available distribution systems. From this perspective, the distribution choice can be divided into two possibilities: the short distribution channel or the long distribution channel. The first is characterized by a single intermediary between the producer and the consumer, namely the retailer. The second is a distribution channel that involves dual intermediation: the wholesaler, who purchases a large quantity of goods, and the retailer. The substantial difference between these two channels lies in the transportation, storage, and insurance costs borne by the producer, which are considerably lower in the second case due to the involvement of the wholesaler. However, a longer distribution channel does not allow the producer to have direct contact with the retailer, thus potentially delaying the receipt of consumer feedback or complaints.

Senise Pepper PGI is primarily available in markets and stores that value and showcase specialty or gourmet products. This can include upscale grocery stores, agrifood fairs, and online platforms. Establish partnerships with distributors and retailers who understand the significance of PGI products and can effectively communicate the story and value of Senise Pepper PGI to consumers.

4. Promotion: The last element of the marketing mix, but certainly not less important than the previous ones, that completes the company's marketing program is the communication and promotion of a product. In this case as well, in order to define a communication and promotion strategy that improves the product's image and the company itself, stimulates consumer interest, and convinces and supports the distribution system, it is necessary to thoroughly understand certain market situations. These situations mainly involve understanding the product under consideration and its differentiating elements, the current market situation and its potential evolution, the consumption habits of the target audience or potential customers, and, of course, the competitive landscape. Only in this way, by respecting the scenario outlined by various marketing research conducted by the company, can communication and promotion become an effective tool to support all the other elements of the marketing mix. It is important to note that in order to implement a

communication and promotion strategy that aims to achieve positive results within the predetermined time frame, the company must first understand who to target in the market, whether it's consumers, the trade, the sales force, or all simultaneously. Subsequently, through careful budgeting, timing, and appropriate means, the company can plan how to intervene to achieve the set objectives."

A promotional strategy to raise awareness and create demand for Senise Pepper PGI can include various tactics such as:

- Advertising: Utilize print media, online platforms, and food-focused publications to advertise the uniqueness and quality of Senise Pepper PGI. Highlight its PGI status, traditional cultivation methods, and regional heritage.
- Public Relations: Collaborate with food bloggers, influencers, and chefs to generate buzz and positive reviews. Arrange tastings, cooking demonstrations, and events to showcase the versatility and culinary uses of Senise Pepper PGI.
- Packaging and labeling: Design attractive and informative packaging that highlights the PGI certification, origin, and story of Senise Pepper PGI. Ensure clear labeling to differentiate it from other peppers and communicate its unique qualities.
- Online presence: Develop a dedicated website or online platform that provides information about Senise Pepper PGI, its history, recipes, and availability. Leverage social media channels to engage with consumers, share content, and promote the product.
- Collaborations: Partner with local restaurants, gourmet food producers, and culinary schools to create special menus, recipes, and cooking classes featuring Senise Pepper PGI. This can help expand its reach and educate consumers about its distinct characteristics.

An interesting aspect to consider involves all those elements that can complement, enrich, and perfect the marketing mix in the agri-food sector. In this sense, Antonio Foglio (2001) believes that the marketing mix should not be rigid in its composition since there are other relevant elements, known as "plus factors," on which a company can work to achieve a winning combination in the target market or a segment of it. These elements are four in number:

• Personal selling: Selling an agri-food product should not be limited to a simple negotiation between the seller and the buyer, whether they are consumers or intermediaries. Instead, it should strive for a kind of collaboration among market operators that can bring mutual benefits and satisfaction. The objective is to establish a lasting collaboration between those selling and

buying an agri-food product. However, to achieve this open and honest collaboration, it is not enough to have a good product. It is crucial for the seller to be skilled in presenting the product, engaging in effective dialogue to generate interest in the other party, communicating efficiently, and encouraging negotiations until a successful conclusion is reached. For this reason, Foglio A. believes that "the success of many agri-food companies' negotiations depends and will depend on the skills of those who know their own company and product" (Foglio A., 2001). This sales approach can be considered an excellent means for products that do not achieve much success through traditional promotional techniques.

• Brand: In the presence of products with similar sensory characteristics, which can equally meet consumers' needs, the brand can be a determining factor in product selection and identification. A well-established, communicated, and valued brand has the power to influence consumers' perception of a particular product and increase trust in the company, as it reduces the risks associated with consuming agri-food products. A well-developed brand that has acquired a set of positive attributes over time, such as safety, reliability, etc., also facilitates the introduction and acceptance of a new agri-food product or its variant in the market.

• Range: An agri-food company that offers a comprehensive and wide range of products can enjoy several advantages in terms of consumer and trade satisfaction. On one hand, it allows catering to the specific needs of consumer segments oriented towards consuming products belonging to a particular assortment. On the other hand, it enables the trade to achieve economies of scale in the supply chain by purchasing a complete range of products from a single agri-food company.

• Service: The last element among the "plus factors" of the marketing mix identified by Antonio Foglio is represented by the service offered. Service represents an additional differentiating element that, even with a similar product offering, can tilt the balance in favor of one company over another and is therefore crucial in terms of competitiveness. For an agri-food company, offering a range of additional services such as a good warranty, product shelf life, timely delivery, efficient transportation, etc., can be a significant strategic lever to achieve an impactful marketing mix."

4.7 The role of the image, communication and market channel in the valorisation of the PGI products

Recognizing the importance of attracting customers to consume the product directly in the production territory, particularly through an experiential marketing approach, it is necessary to emphasize the significance of the territory as an essential element for the enhancement of typical products. The production locations, with their own history, culture, and traditions, play a strategically important role in creating value in the agri-food product. Therefore, they should be conceived not only as productive areas but also as true experiential stages capable of increasing value for customers (Pencarelli T., Forlani F., Dini M., 2015).

Furthermore, the territorial value, in addition to shifting towards an approach where the typical product is not pushed towards consumers but vice versa, implies that strategic competition is no longer between individual agri-food companies but between territorial supply systems (Pencarelli T., Forlani F., 2006). Therefore, it is necessary to consider how to effectively integrate the enhancement of typical productions with the valorization of the territory itself in order to increase its competitiveness and overall value. To achieve this, a crucial step is understanding how to best utilize the different marketing tools that are essential for adequately enhancing local typical products and the territory, namely: the image and brand of the territory and the product, communication, and distribution channels.

The image of the territory, or the association of the territory's image with the product brand, offers several advantages for both parties. On one hand, the territory's image supports the sale or "revival" of a local agri-food product and facilitates its entry into specific distribution channels. On the other hand, when the image or name of a territory is associated with a local product that has a significant reputation in the target market, it can become a significant strategic lever for effectively enhancing the territory itself, especially in terms of enogastronomic tourism (Pencarelli T., Forlani F., 2006). Therefore, given the bidirectional relationship between the image and brand of the territory and that of local typical products, it is necessary to implement adequate and coordinated marketing and communication strategies aimed at properly enhancing both the typical productions and the originating territory.

Regarding the role of branding in enhancing typical productions, both in terms of conveying and communicating the values of typicality and being recognizable to consumers, it is interesting to highlight the results of a study conducted by Cardinali M. and Bellini S. (2014), two professors from the University of Parma. In summary, the study revealed that a brand best represents the typicality of a product when it is not overly invasive, conveys a sense of craftsmanship through simple and clean packaging, and provides sufficient information, especially about the origin of the ingredients. The research also showed that brands perceived by consumers as "more typical,"

capable of conveying the values associated with the concept of typicality in an agri-food product, are primarily collective brands developed by protection consortia, followed by distributor brands, and lastly, industrial brands. The latter are considered less typical because the brand itself seems to be excessively emphasized compared to the product's typicality.

Therefore, a communication campaign must be able to evoke in consumers "all the values of typicality that underlie the identity of a typical product," such as quality, authenticity, food safety, tradition, and the connection with the original territory (Cardinali M., Bellini S., 2014). However, this is not enough, as a good communication campaign must also be able to narrate the product's story in all its stages and throughout its production process, highlighting those distinctive characteristics that are crucial in shaping its differentiating character.

It is crucial for the company and the territory to closely collaborate in order to create an offering that meets the expectations of tourists/consumers and enables the achievement of mutual benefits in terms of economics and image. However, it is important to remember that achieving a fruitful collaboration between the company and the territory in terms of communication and commercialization is quite challenging, given the different goals of the entities managing these two aspects (Pencarelli T., Forlani F., 2006.)

	Territory	Firm
Juridical Asset	Administered by public entities and the political sphere.	Administered by entrepreneurs
Scope	Enhance the territory as a whole, uniformly and equally	Enhance the firm’s brand and of its own productions

Table 4 Collaboration between the territory and the company

5: Final considerations and future prospectives

This study sought to ascertain the role of the characteristics of PGI in the Senise pepper market in an attempt to describe a strategy that would maximize the impact that the PGI has on this market differentiating it from its competitor. The findings strongly suggest that PGI has achieved its goal of matching the product to its area identity, this has allowed the identity of the Senise pepper PGI to be enhanced in the eyes of the consumers and thus, facilitating market success. PGI certification scheme could represent a valuable marketing tool and could ensure greater participation of both small and large producers, if consumers' expectations are correctly met with a product that embodies consumers' preferred characteristics. Therefore, the indications obtained in this study express the impact of PGI under an economical point of view in presence of a high level of competition. The opening question of this study was to understand if it was profitable for the firms to produce a PGI product, considering all the pros and cons, or to stick to a non-labelled product with less restrictions.

The market analysed fits perfectly the definition of the Bertrand competition model. The Senise pepper market is an oligopoly composed of firms producing the Senise pepper PGI and of firms producing the pepper of Senise, both the two set of firms produce a homogeneous product and compete by setting prices.

There are several assumptions in the Bertrand model:

1. Firms are rational, and their objective is to maximize their profits,
2. Firms produce homogeneous products,
3. Firms compete by setting prices,
4. Each firm treats the price set by its competitor as given,
5. There is no cooperation between the firms,
6. Each firm can meet the entire market demand,
7. The firm that sets the lowest price captures the entire market

By definition the Bertrand equilibrium is in equilibrium in a duopoly where firms set their prices at marginal costs. The paradox is that it is normally assumed that a duopoly will not be competitive and will price above marginal cost. Each firm has an incentive to cheat on collusion because, given what the other firms where doing, cheating is profit maximizing.

The Bertrand competition model can be applied to the PGI market to explain why it is more profitable to invest in a PGI product than in one without the label.

What is evident from the cost benefits analysis is that the total profits of the Senise Pepper PGI over its competitors are three times higher. The variable and fixed costs are the same with the exception of the price for seed p/unit that is obviously lower for the pepper without PGI since the certification of the seed adds value on the final product making the price higher.

Regarding the Senise Pepper without PGI the total profits p/year are low but is important to take into consideration that usually the firms in this market are large scale retail trade and organized distribution, they are able to face lower prices by increasing the level of production due to the high demand. Opposite is the situation for the peppers with PGI, they face lower demand because of the high cost, leading the ordinary customer to consume the product at a lower price. This market is composed by farmers with 1 maximum 1.5 hectares so the production quantity is low but it is compensated by the value that the PGI label brings to the product making feasible this increase in the selling price, these are the common characteristics of a niche market.

Further researches can deepen the analysis of consumers' perception of Senise pepper PGI labels with the help of qualitative methods, as interviews to consumers in order to highlight some issues that have not yet recognized by previous studies, being the issue of the Senise pepper PGI relatively new for the Italian context. Also, a deeper analysis can be devoted to the sources of information that shape consumers' perception, due to joint effect on PGI reputation played by both the producer firm and both by the popularity of the territory of origin since this prior knowledge influences consumers' expectations (Dentoni et al., 2013), Furthermore, there is room to suppose that in the near future, due to the COVID-19 crisis, the relationship between consumers and local products will have a shift that can represent a further opportunity for stakeholders that needs to be investigated (Cavalio of ai., 2020)

6: Appendix

The questionnaire used for the analysis is the following:

• What is the history of Senise pepper PGI, it is an indigenous product?

• Production chain (HACCP), are there special fertilizers to utilize? Is it possible for the product to be organic?

• Analysis of the territory (where should the pepper be planted? Why can it only be planted in this specific geographic area and not in another part? What chemical characteristic of the territory gives the pepper its PGI designation?), and chemical analysis of the product.

• How is the company structured, number of employees? Do you produce the product or purchase it? Are there intermediaries involved at this stage?

• Are all the production phases internalized? Is the transformation process carried out by the same company?

• How does the purchasing and selling process take place?

• Product logistics, is there a specific department within the company responsible for this?

• As an IGP-regulated product, is there a pricing tariff that governs the purchase price at each stage of the supply chain?

• Does the company export to any countries? Which ones? Why those specific countries?

• How much of the product is destined for local production, and how much is exported? (cultivated surface area value, volume exported)

• Does the product have high production costs? Is it difficult and costly to comply with all the regulations to produce an IGP product?

• Why did you decide to invest in crusco pepper? Do you believe that the IGP designation actually provides the economic benefit that is often discussed?

• As an IGP product, is there higher demand, or are consumers not attentive to it?

• Is the consumer willing to pay the premium price?

• Does the production exceed the demand?

• In your opinion, has the IGP designation brought tourism and regional development?

• Why is the product relatively unknown and has not managed to excel like other IGP products? What, in your opinion, should be done to increase demand? If there is an increase in demand, can it be met?

• What marketing strategies are used to sell the product?

• How much is the percentage loss during the production, the harvest, the cleaning phase, and the exsiccation phase?

• How much is the depreciation cost for the machines and infrastructures?

• How much do you spend for the energy costs?

• How many liters of water do you need during the production phase? How much does it cost you?

• How much do you spend for the fertilizers?

• How much does it cost a seed? How many plants there are in one hectare?

• How many quintals of pepper does one hectare produce?

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