PDO supply chains in Greece: empirical evidence from two regional products

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PDO supply chains in Greece: empirical evidence from two regional products

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Abstract

In this paper, an attempt is made to describe the supply chains of two Greek PDO products, namely Peza olive oil and Zagara apples. Both products are produced in regional areas and constitute a major source of income for the local economies. Still, the differences noticed in their chain management underline the role of an industrial processor actor's participation: Peza olive oil is marketed in a highly competitive market in which many large private firms are operating, whereas Zagara apples, being marketed in the fresh product market, have a less typical and organised supply chain.

The purpose of the paper is to analyse the structure of the two supply chains and to determine the relative importance of the PDO scheme on each product market performance. Thus, the whole set of participating actors is examined and the interrelations and the economic coordination between farmers, processors and retailers are highlighted. In addition, the competitive position of each product in the relevant market is investigated and compared to other competitive non-PDO products.

The revealed strengths and weaknesses and the economic performance of the overall supply chains can provide some guidance, notably regarding the question whether, and when, it is worth to market a product under the PDO scheme.

Keywords: supply chain management, protected designation of origin products, olive oil, apples, Greece
INTRODUCTION

Agricultural products and foodstuffs with Protected Designation of Origin (PDO) or Protected Geographical Indication (PGI) represent an interesting and possibly positive answer to the new market environment for agricultural and food products that has been emerging in the last decades in all developed countries, in particular in the EU (Canali, 1997). On the other hand, these products are faced with a number of marketing problems, mainly due to the need of managing a collective brand.

Traditional and typical products seem to benefit from a renewed interest by the consumer. They constitute an excellent opportunity to develop and re-launch farms and medium and small agro-industrial firms, because they enable such firms to partly escape an increasingly global competition (Belletti and Marescotti, 1997).

The PDO/PGI scheme has drawn considerable attention among producers in Greece and a large number of Producer Organisations (POs) and Agricultural Cooperatives has applied – or is preparing applications – for the recognition of their products. In most cases, submitted applications are based more on an intuitive belief that such a recognition will immediately lead to increased producer income, than on a concrete determination of all possible implications (compliance with EU regulations, uniform production, strict control on production and/or processing methods, etc).

This study examines the role of a PDO recognition and its effect on the product market performance, by analysing two particular cases, namely Zagora apples and Peza olive oil. The results may be helpful into understanding the positive and negative implications of the PDO scheme on a supply chain of a local product. Hence, they may provide some guidance on which products can achieve added value due to the scheme.

1. APPLES

Apples are a major fruit cultivation in Greece – second only to peaches in terms of output – with an annual production of around 340,000 tonnes. Nevertheless, in the last decade, there has been a decline in its cultivation essentially due to the fact that the market is more or less saturated, demand is stagnant and certain varieties are becoming non-marketable.

Apples are cultivated in certain regions of Greece, as almost 80% of the total output are produced in only five prefectures. The prefecture of Magnissia (where Zagora is situated) accounts for 9%, but this share increases to 16% if only the produce of the variety Starking (Red) Delicious is taken into consideration. This variety is the most popular in Greece (42% of total apple production) because its market penetration potentials (in domestic as well as in foreign markets) are much greater than that of other varieties.

1.1. Zagora apples

Zagora is a village with a population of 8,000 people, situated in the eastern side of the mountain Pilio (1200 m) in the prefecture of Magnissia at an altitude of 600 m., with the sea being only 8 km away. It is situated 53 km from Volos, the prefecture's capital and a major port, 350 km north of Athens and 250 south of Thessaloniki, the two major domestic markets for Zagora apples. The Zagora area also includes two smaller villages, namely Makrirahi and Pouri, and thus the range of the altitude of the whole area under consideration varies from 150-950 m. and is either mountainous or semi-mountainous (Galanopoulos et al 1997).

1.1.1. Characteristics and typicality of the product

One way to measure the characteristics of a product is the specifications made under its Code of Practice. In the case of Zagora apples, the existing code is more a description of the production methods rather than a strict and detailed framework. However, it does set down the exact geographic area in which the apples produced can be marketed under the PDO "label" of Zagora apples. This area is comprised of three villages : Zagora, Pouri and Makrirachi, all situated in the mountain Pilio at the prefecture of Magnissia.

The appearance of the fruit is perhaps the most important criteria for a consumer to purchase apples (Vassilakakis 1995). Zagora apples are large apples with an elongated shape that have at their base five pods, a characteristic representative only of the Starking Delicious variety when grown on high altitudes. The colour of the fruit is intensely red, due to the altitude and the high humidity during the summer. These characteristics are highly appreciated by Greek consumers who generally prefer red and large apples over green and smaller-sized ones.
In general, higher quality apples are considered the ones that are produced in mountainous areas, have been pruned and are stored in controlled air atmosphere ULO (Ultra Low Oxygen) refrigerator compartments which reduce incidence of scald in the fruit. All these prerequisites are existent for Zagora apples.

Combined with the favourable climate and soil conditions that prevail in the area of Zagora, local practices during the production, processing and preserving phases also play a significant role into yielding a fruit whose quality is widely recognised. The cultivation of apples in this region is more labour intensive and farmers often apply techniques that are not often used elsewhere in order to overcome problems regarding the morphology of the ground, the soil or the weather. Due to the morphology of the area, it is impossible to employ any sophisticated mechanisation that could industrialise the production. The lack of machinery has forced producers to rely on traditional practices and place heavy emphasis on hand-work, actions that are not as common in other more "advanced" or "developed" areas. Thus, they have gained increased expertise on employing alternative production techniques that can be diffused from generation to generation.

1.1.2. Zagora apples supply chain

The supply chain of Zagora apples can be divided in three levels: the producers, the packers and the distributors. The first two levels are the most active in the supply chain and can therefore be considered as the most important ones, bearing also in mind that Zagora apples can only be marketed as fresh products and hence, there are no food processing industries involved.

This particular supply chain is dominated by the Agricultural Co-operative of Zagora, one of the oldest in Greece (founded in 1916). Ever since the 1950s and the widespread increase in the cultivation of Starking Delicious apples, it has been growing rapidly and today apples are the co-operative's prime marketing product. Its growth and its expertise are broadly recognised, so that about 95% of local producers have joined it, resulting to 740 members and the marketing of practically all the local production (around 13,000 tonnes annually). It is one of the three largest first-degree co-operatives in Greece, accounting for 10% of domestic apples (Starking Delicious) production and is the greatest exporter of apples in the country.

The Agricultural Co-operative of Zagora is the only packing enterprise active in the supply chain of Zagora apples. It does not merely act as a packer but it performs multiple marketing tasks, from providing technical assistance and information feedback to the producers to owning sales-rooms at the two main Fruit and Vegetables Markets in Athens and in Thessaloniki. Producers are paid upon delivery and after grading classification of their produce only an advancement as final reimbursement occurs after conclusion of the marketing year. Vertical relations with the producers should be considered quite harmonic.

At the final level, there are a large number of wholesalers and retailers who participate in this supply chain. Their typology is quite divergent, unlike the homogeneity noticed at the up-stream actors. They are either exclusive sales agents in certain cities, or independent intermediaries. Some wholesalers act as both distributors as well as retailers. Up to now involvement of large retail outlets has been negligible, but their importance will increase in the future, and already in the 1997-1998 marketing period Zagora apples are sold in Continent, one of the largest multinational retail chains operating in Greece. Despite the large number of enterprises, the differences in their sizes, operation locations and objectives, one common characteristic is still apparent, namely that Zagora apples represent neither their major marketable commodity nor their principle source of income. Their co-operation with the Agricultural Co-operative of Zagora is based on contracting (mainly written) in which quantities, prices and transportation means are agreed.

It should be stressed that there is no involvement of food processing industries in the supply chain of Zagora apples because varieties that are rich in juice are not popular among producers. Consequently, industries have to absorb table varieties, which however, are low in juice concentration, and thus they increase the industry costs, which in turn are forced into paying producers much lower prices.

The market power within the supply chain appears to be at the second level, the Agricultural Co-operative of Zagora. It benefits from being the only reliable outlet for the producers to deliver their output (monopsony) and also the only source for other merchandisers to be supplied with Zagora apples (monopoly). The co-operative's position is expected to further strengthen in the future, especially after the implementation of the
new Common Market Organisation (CMO) as independent producers will lose certain privileges which are allocated directly to Producer Organisations (POs). It is also the most active actor within the supply chain and due to its position, it has a large negotiating power. However, this can be altered as large retail outlets that are more capable to dictate most terms of trade are entering the supply chain.

1.1.3. Market of Zagora apples

Zagora apples are quite famous in the domestic market and enjoy a reputation of high-quality apples that are purchased even though they are more expensive than other apples of the same variety. This reputation can be attributed to the fact that they possess most of the desirable characteristics, and most importantly, the intense red colour, the size and the taste, and also to the fact that they come from a region (the Pilio mountain) that is not only generally considered an ideal production location of apples, but a renowned holiday resort as well. It is true to argue that the production area contributes to the product image.

The Agricultural Co-operative of Zagora markets each year about 10,000 - 13,000t. About 2,000t are exported to other countries and the rest is absorbed in the domestic market. Out of these, 4,000t are sold directly at the co-operative’s establishments in Zagora to wholesalers who may buy apples from there any time during the marketing period. Half of this quantity is sold at the beginning of the period. Another 5,000t are transported to the co-operative’s privately owned outlets, one in Athens (3,000) and one in Thessaloniki (2,000) and are sold only to traders who buy quantities in bulk and sell them either in other rural cities or at the street markets that take place in these two cities. In addition, local representatives in most major cities in Greece act as both wholesalers and retailers. They account for another 2,000 tonnes. The co-operative does not act as a retailer and only in the last years the management has begun to make deals directly with large retail outlets in Athens and Thessaloniki. This particular chain (co-operative → retail hypermarkets) is for the moment small but there is a significant upward trend, following the general shift of consumer purchases from traditional outlets to major retail outlets.

The distribution channel of Zagora apples has changed considerably over the last thirty years. Originally, there were no exports and all of the production was distributed in the domestic market until 1979. Ever since, the co-operative had to integrate its distribution channel, contacting and signing deals with traders abroad (in most case one in each country), as well as with transportation agencies (apples exported to continental Europe are transported via freight trucks and in Cyprus and Israel via cargo ships).

However, even in the domestic market has the distribution channel changed. Big wholesalers used to negotiate and buy apples from individual producers in the farm-gate, transport and sell them by their own means. This had negative effects not only for producers, who due to their small bargaining power could not get high prices, but also for the traders in terms of time and resource waste. The last decade, the co-operative has grown and it represents now virtually all producers. Today, it is undoubtedly the chain leader and traders are dealing only with it. The co-operative’s expansion has led to the acquisition of private transportation means (5 trucks with a capacity of 100 tonnes) and private outlets, a fact that significantly altered the way Zagora apples were to be marketed. The co-operative has managed to perform a vertical integration within the distribution channel, increasing the quantities that are marketed by it.

1.1.4. Performance of Zagora apples

The product, Zagora apples, has certain strengths and weaknesses (Table 1) that affect its performance in the market. Zagora apples are considered high quality apples that are preferred by consumers despite their higher price. Although the number of direct substitutes is quite large, Zagora apples have managed to be differentiated up to a certain point, even though that the absence of promotion or advertising disallows for the brand name to become more widely known among consumers.

Main competitors are apples from Kastoria, Pella and Imathia (regions in N. Greece) all of which mainly produce Starking Delicious apples as well. Zagora apples are sold throughout Greece but the bulk is absorbed in the two largest cities of Greece, Athens and Thessaloniki. There are rarely any market disposal problems for Zagora and in some cases, demand may exceed the supplied quantities. It is therefore not strange that the selling price of Zagora apples can be as much as 20-50
GrDrchs higher than that of other red apples. Significant contribution to this is provided by the Agricultural Co-operative of Zagora, which is not only one of the largest co-operatives in Greece, but also one of the most efficient. Its market conduct is profitable (in 1995, the turnover reached 2.3 billion drachmas and the sales cost 437 million drachmas, thus resulting to a gross revenue of 1.8 billion drachmas) and returns to its producer-members are quite high (Galanopoulos et al. 1998).

Producers in Zagora appear to be on a more advantageous position over producers in other regions bearing in mind that producer prices for Zagora apples are higher than the national average, as can be seen in the following figure. It is apparent that the producer price for Zagora apples has increased substantially over the last few years, at a much greater pace than the national average price.

2. OLIVE OIL

Greece is the third largest olive oil producing country, after Spain and Italy. There are 122 million olive trees that produce annually 300 thousand tonnes of olive oil and 80 thousand tonnes of edible olives (Zampounis and Patsis, 1997). Olive oil cultivation covers over 708,700ha, land which accounts for 15% of the total cultivated land and 75% of the land used for tree crops. All around Greece employed in this cultivation accounting 9.9% of the total Greek agricultural production 450 thousand families. Olive oil contribution to the Gross Domestic Product is 12.5% and 46.5% to Gross Agricultural Income. The structure of olive oil production is especially important since the olive trees are grown in areas where no other cultivation can be developed. Olive trees are, most frequently, grown in the coastal areas and the islands, as these offer the ideal climate for growing (Kiritsakis, 1993). Crete with 33% of the production and Peloponnisos with 33% are the main producer areas (in period from 1984 to 1996), and their product is famous for its quality. Production does not extend north of Macedonia and the low-lying coastal and southern areas of Central Greece.

2.1. PDO -PGI olive oils

In 1992, EU Regulation 2081/14-7-92 (L 208/24-7-92) on the protection of geographical indications and destinations of origin for agricultural products and foodstuffs came into force. So far, Greek authorities and interested parties have prepared application files for sixty olive oils for designation under Reg. 2081/92. The sign PDO can be given only to extra-virgin olive oil and not to products of olive oil, which come from mixing of high and low quality. As a result, the producers' interests will be protected along with those of the consumers who will be able to choose the specific named product. From these files, only eight have been recognised as PDO and eight more got the PGI resignation. PDO and PGI olive oils have to follow specifications, which are described in detail in the corresponding designation law. Therefore, the sign PDO is identical to a guarantee of the high quality and creates a standard, positive image in both domestic and export markets.

2.2. PDO Peza olive oil

PDO Peza olive oil is produced and processed in Crete, in the specific region of Iraklio prefecture, which is around the valley of Peza. Peza is situated near the archaeological area of Knossos, 18km away from Iraklio -the prefecture's capital- which is the major commercial centre of the island. The valley of Peza is mainly cultivated by olive trees and grapes. The technique of olive tree culture passes from generation to generation. Olive tree cultivation is the main source of income in the area.

2.2.1. Characteristics and typicality of the product

Product characteristics can be measured using the specifications made under its Code of Practice. The existing code for Peza olive oil is a description of factors that affect the quality of the Extra Virgin Olive Oil. These factors referred to the cultivar of origin, but also to a series of delicate operations, starting from the harvest of the olives up to the conservation of the bottled product. The exact product specifications for PDO Peza Olive oil have been described in detail in PDO-Peza designation law (Gov. Gazette N. 574/B/2 Aug. 1993).

Peza olive oil is extra virgin olive oil with yellow-green colour and absolutely perfect flavour. The variety of olives, the soil (hilly-semi mountainous), the mild Mediterranean climate, the sunny period, the traditional way of production, collection, processing and preservation of the product are important factors which define the specific quality characteristics to the Peza olive oil.
2.2.2. Supply chain of PDO Peza olive oil

The supply chain of Peza olive oil can be divided into three levels: the producers, the Union of Peza and the distributors (wholesalers, retailers, foreign exporters, and sales-rooms of the Union) (Tzouramani et al, 1997). In the supply chain, there are many actors with more or less power.

In the Peza area, 3,556 producers benefit from olive tree cultivation, an important activity for the region. The olive oil production varies from year to year because of the biennial cycle of olive tree and weather conditions. In the last decade, the average annual production of the olive oil ranged from 1,300 tones to 3,500 tones. Olive oil production has increased the last ten years by 28.74%. The main reasons are either the incremental number of olive trees and the improvement of olive tree yield.

In 1933, producers - members of 19 first-degree co-operatives - from the wider Peza area, created the Union of Peza, a second-degree co-operative. The main activity of the Union is olive oil and wine production. There is a vertical integration between producers and the Union. Through this operation, producers seek to increase their competitive position in the market, and reduce production and distribution costs. In this way, they promote with greater efficiency their products in the market and gain more. Therefore, there is a strong relation between Peza olive oil farmers and the Peza Union. The Union of Peza is the main actor within the supply chain as it is responsible for the most important management functions of PDO Peza olive oil product such as planning, organising, staffing, directing, controlling and negotiating.

The third level of Peza olive oil supply chain, the distributors, play a very important role as their power has increased rapidly. The retailers, in the internal market, direct Peza olive oil packed sales and the foreign exporters the bulk sales. It is interesting to mention that Peza olive oil faces problems in the greater Greek olive oil market due to the rapid changes in the retail market. Food retailers are very demanding when it comes to placing a product on their shelves and wholesalers that were traditionally distributing PDO Peza Olive Oil are losing their market power. Thus, the majority of the production is directed as bulk product to the export market (70%), mainly in Italy. Only 30% of the sales represent packed product placed in the internal market. The total average amount of marketed quantity of Peza olive oil is about 3,000 tones. Total sales of the Peza Union have decreased significantly during the last years with the exception of 1991 and 1992, when demand was high due to low international olive oil production (especially in Spain). These were the years that created scepticism on concerning the insecurity of sales in bulk. After 1994, bulk sales have a negative annual growth rate of 25-30%. In contrary, packed sales have had a better performance, as their average growth has been positive.

2.2.3. PDO Peza Olive oil market

PDO Peza Olive oil is a new differentiated product in the market. Peza olive oil has both strengths and weaknesses (Tzouramani et al, 1998). It is undoubtedly a natural product, obtained without any chemical processing: it is the pure juice of olives. The absolute perfect fruity flavour, yellow-green colour and its specific taste differentiate it from all other substitute products. The existing code of practice has set out the main points correctly, but in some cases, this is not detailed enough in describing and harmonising production practices. However, the production methods of olive tree cultivation do not differ substantially among producers as long tradition, specialisation and close relationship of producers with the olive tree, lead to a compact product. A major factor that affects the product is the weather conditions, which are unpredictable each year and can affect quality.

The Union of Peza is believed not to have other alternatives for business development. As already mentioned, olive tree cultivation is a major activity in the area. The income of the area is based on olive oil production. There are many substitutes and imitations of the product, as Greece is the third country in world in olive oil production, thus there are many competitors in the market. The only factors that could help differentiate its position are its natural and the organoleptic characteristics. The Union of Peza has to differentiate its product in the market exploiting the PDO sign and to do so, it has to invest in branding and marketing communication.

2.2.4. Performance of Peza olive oil on the market

Today, Peza olive oil is being in a very competitive market, from many directions. At first, in the producer
level, there are many olive oil producers in the national market, but also they have to compete and olive oil producers in the EU market where the olive tree cultivation is concentrated. The major advantages of Peza olive oil are its high quality, the strong image of both healthy product and Cretan traditional product. Therefore, in order to survive in the market has to decrease its production cost, as it is possible to be competitive in the market. The price for olive oil is not directed from the producers but form the market forces and especially from the international olive oil situation. The price for extra virgin olive oil is the higher in the market. If producers try always to improve its olive oil quality, they will merit a high price and a high income. However, as the majority of the olive oil production in Peza area is extra virgin, the producers receive the highest price of the market. Peza area belongs to the region of Crete, and the prices for producers are higher than in other areas of Greece. The producer price for Peza area follows the same trend as Greek olive oil producers.

The production of olive oil has an upward increasing tendency in the international level with an annual average growth rate of 7.33%, in the national market with 10.41% and in Peza are with 3.32%. Until now the consumption has not follow the same annual trend. On the international market, the annual average growth rate is only 1.01%. However, the perspectives for the future are good, as the Mediterranean diet and its health advantages of olive oil consuming direct to a development of one more attractive market. The national consumption of olive follows a small and not significant at this time decrease of olive oil consumption. It is important to mention that Greece has the largest olive oil consumption in the world and there is a small substitution from seed oil and fat market but olive oil will remain as the main product of use.

It is also important to mention one major characteristic of the national olive oil market. The percentage of the packed sales is very low. In the crop period 1996/97, the total production of olive oil was 340 thousand tonnes, only 15.71% (53.4 thousand tonnes) was in packed form. The majority of Greeks prefer the bulk olive oil sales. Peza packed sales follow the same trend as the national market. In the internal market, the Union of Peza has a slow decreasing tendency in its sales with a mean annual growth rate of -0.19% in contrast with the national market which has a -14.34% (Tzouramani et al, 1998). In the external market, the packed sales have a stable tendency and the mean annual growth rate is +15.46%, but the total quantity of these sales are only 1-2% of total Peza sales. In contrast, the bulk sales face a slow decreasing trend after 1994 with a mean annual growth rate of -0.63%. More than 70% of the total sales is directed to the export market through bulk sales. Today, the low demand of bulk sales (mainly from Italian exporters) creates big problems for many firms of the sector. Therefore, Union of Peza, in order to protect its product, has only one solution: to increase its market share though packed sales. Peza believes that through the problems of the bulk olive oil market have to promote more effectively its product as soon as possible as a differentiate product in the market. The Union has to exploit the PDO label and its positive image as a Cretan natural product to gain a bigger share of the market.

CONCLUSION

In this paper, an attempt was made to describe the supply chains of two Greek PDO products. These two products have many differences. Peza olive oil is marketed in a highly competitive market with a lot of substitutes. Moreover, Peza olive oil supply chain is characterised by lack of control, of well-organised distribution and flexible decision making. In addition, financial problems of the Union, high degree of bureaucracy and weak promotion is doing Peza olive oil less competitive in the market. So, Peza olive oil supply chain has to improve its structure and an appropriate tool will be the PDO label.

On the other hand, Zagora apples are marketed in the fresh product market and they have a less typical and organised supply chain. Contrary to the Agricultural Cooperative of Peza, the Cooperative of Zagora can be recognised as a market leader, a fact, which enables imposing of contact terms in favour of the producers. In addition, Zagora apples have already established a clear position in the market. They are widely known by the consumers and hold a significant market share. Consequently, capitalisation of the PDO scheme appears to be easier in the case of Zagora apples, provided that further emphasis will be placed on promoting the PDO label.

Summarising, the PDO/PGI designation may provide the means for an efficient way of promoting specific
local food products. Since consumers prefer foodstuffs that are of guaranteed origin, brand names and the place of origin are key elements of today’s effective marketing strategies (Mattas & Galanopoulos 1997). However, not all local products should be expected to gain significant benefits from this scheme. It seems reasonable to argue that only those products that have already established a clear market position or are known by the consumers can easily gain higher added value. All other products should place heavy emphasis on promoting the recognition (i.e. by extensive use of the PDO logo), achieving greater market penetration (i.e. through contracts with large retail chains) and establishing a clear product differentiation.

In any case, the PDO/PGI designation can prove to be very helpful for local products, but producers should not expect immediate benefits. The supply chains of such products needs to be highly coordinated so that in the long-term market performance is increased.

Figure 1: The supply chain of Zagora apples
Figure 2: Producer prices in Greece and in Zagora (GrDrch/kg)

Note: The two categories represent around 90-95% of all Starking Delicious production in Greece

Source: Compiled with data from FAO and the Agricultural Co-operative of Zagora

Figure 3: The supply chain of Peza Olive oil

Peza Olive Oil Producers

- Self Consumption (15-20%)
- Direct Bulk Sales (7%)
- Union of Peza

Private Mills (10%)

Peza Union Mills (90%)

PEZA OLIVE OIL

Wholesalers
Regional Sales Dept. (17-20%)
Retailers (10%)
Exports (1-2%)
Merchants (10%)
Greek Exporters (10%)
Foreign Exporters (80%)

Olive oil in Bulk 70%

Packed olive oil 30%

CONSUMER
Table 1: Strengths and weaknesses of Zagora apples

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
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<tbody>
<tr>
<td>Increased awareness on &quot;healthy&quot; diets</td>
<td>Poor traffic network</td>
</tr>
<tr>
<td>Good quality, tasty, deep red colour. Efficient preservation techniques</td>
<td>Low levels of institutional promotion</td>
</tr>
<tr>
<td>that retain quality characteristics and elongate marketing period</td>
<td></td>
</tr>
<tr>
<td>Favourable weather &amp; pedological conditions. Small area -</td>
<td>Threat of banalisation of the name &quot;Zagora&quot; apples and growing acceptance of the name &quot;Pilio&quot; apples</td>
</tr>
<tr>
<td>high homogeneity of the produce</td>
<td></td>
</tr>
<tr>
<td>Sustainable production</td>
<td>National monetary policy (hard currency that impedes exports)</td>
</tr>
<tr>
<td>Co-operative’s efficiency compared to main competitors</td>
<td>Small size of farms and further fragmentation of farms in small plots</td>
</tr>
<tr>
<td>Product’s (Informed consumers perceive Zagora apples as high-quality ones</td>
<td>Morphology of the area (mountainous)</td>
</tr>
<tr>
<td>and are willing to pay higher price) and area’s image (tourist resort)</td>
<td>Market fraud</td>
</tr>
<tr>
<td></td>
<td>Large number of substitute apples. Other apples are cheaper. Potential threat from increased consumption of other fruits.</td>
</tr>
<tr>
<td></td>
<td>Consumers generally do not differentiate among different apples; origin-name &quot;Zagora&quot; is not known by all consumers due to the lack of promotion and advertising</td>
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Table 2: Strengths and weaknesses of PDO-Peza olive oil

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
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<tbody>
<tr>
<td>Extra virgin olive oil, high quality, natural product, absolute perfect</td>
<td>Financial problems</td>
</tr>
<tr>
<td>fruity flavour, yellow-green colour</td>
<td></td>
</tr>
<tr>
<td>Cretan product</td>
<td>Lack of flexible decision making system</td>
</tr>
<tr>
<td>Favourable weather and pedological conditions. Small area - high</td>
<td>High degree of bureaucracy</td>
</tr>
<tr>
<td>homogeneity of the produce.</td>
<td></td>
</tr>
<tr>
<td>Positive image as a traditional quality product</td>
<td>High degree of competition</td>
</tr>
<tr>
<td>Increased awareness on Extra virgin olive oil favourable properties for</td>
<td>Lack of control of PDO Peza olive oil supply chain</td>
</tr>
<tr>
<td>health</td>
<td>Lack of well-organised distribution</td>
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<tr>
<td></td>
<td>Large number of substitutes</td>
</tr>
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<td></td>
<td>Weak promotion</td>
</tr>
</tbody>
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