

The upgrading strategy of olive oil producers in Southern Spain: origin, development and constraints

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This article argues upgrading in buyer-driven commodity value chains in highly specialized olive grove territories illustrates farmers' reaction to globalization. To avoid low prices, local producers are seeking new ways of running farms, organizational innovations and to introduce new products into new markets. Although challenges in global marketing remain insurmountable for some, a number of olive-producing areas are reacting through endogenous development strategies that involve new training, information and knowledge. This article presents findings from qualitative interviews conducted to offer first-hand knowledge of opinions, challenges, problems and results key agents involved in olive oil production in Jaén, Spain, are experiencing. Findings show that a strong knowledge-based vision, generational change in running farms and diversification are needed to adopt new practices to improve local income.

Keywords: agriculture; endogenous development; institutional change; olive monoculture; product differentiation

Introduction

Most of the olive oil produced in Spain has traditionally gone to the intra-industrial market. Therefore, the market is controlled by large business groups (Rodríguez & Parras, 2011). Until the 1997–1998 campaign (European Union, 1998), the intervention market price for olive oil was established by the European Union through its Common Agricultural Policy as the main element of its policy along with production subsidies (European Economic Community, 1966). This reference price helped to settle prices in the uneven transactions between the powerful market operators and olive oil producers, or it otherwise acted as a fixed price for

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the European Agricultural Guarantee Fund to buy the product. The disappearance of this Guarantee Fund, along with the intra-industrial market being an oligopoly, has disadvantaged olive oil producers as confirmed by the evolution of prices since the campaign: extra virgin olive oil (the highest quality at origin) was selling at around €2 per kg in the 2013–2014 campaign, a figure very similar to 1998–1999 prices (Fundación del Olivar, 2014; Junta de Andalucía, 2014). Moreover, as is demonstrated by a study on commercial margins conducted by the Spanish Association of Olive-producing Municipalities (*Asociación Española de Municipios del Olivo* [AEMO], 2010), the prices of agricultural inputs have continued to increase steadily, and as a result, producers are not profiting.

This critical institutional change has placed Spanish olive oil producers, particularly those in the province of Jaén (Andalucía), in an extremely weak position. The province of Jaén, with a surface of 13,489 km², of which 585,000 ha are devoted to olive growing, produces more oil than Italy and Greece combined (the second and third largest producers in the world) (International Olive Oil Council, 2014; Junta de Andalucía, 2014). Jaén constitutes the clearest example in the world of specialization in olive oil production, since 90% of its agricultural land is devoted to olive tree cultivation.

Increased land cultivation, tree concentration and the growth of inputs have led to spectacular crop yields. The performance from 1986 to 2010 shows production and yields have tended to become regular or, more importantly, increased (Table 1) and likely to continue, since many young plantations have not yet reached their maximum yield potential.

When there is a good crop, the province produces as much as 20% of the whole world's olive oil production. In this context of large-scale production and a regressive stagnation of prices (Barjol, 2014), the region has reacted by developing two different, though not incompatible, strategies. The first strategy is to add value to the product, which, in turn, is changing how agricultural and industrial activities are organized and altering how farmers have behaved towards society and the market for decades (Coq-Huelva, Sanz-Cañada, & Sánchez-Escobar, 2014; Egea & Pérez y Pérez, 2016; Ploeg & Roep, 2003). The second strategy involves

Table 1. Evolution of the production of olives in the province of Jaén, 1986–2010.

	Production (t)
Average 1986/1995	1,027,163
Average 1996/2005	1,891,123
Average 2006/2010	2,334,884
Absolute minimum (1988)	664,636
Absolute maximum (2003)	2,908,133

Source: Ministerio de Agricultura, Alimentación y Medio Ambiente (2013).

seeking new methods to reduce olive production costs through crop production intensification (Connor, Gómez-del-Campo, Rousseaux, & Searles, 2014). This article analyses the origin and development of the first strategy and attempts to explain how it may affect Jaén, the most important olive-oil-producing area in Spain and globally, and its producers, who now face competition in their target marketplace. We explain the constraints of this strategy and advantages that its full implementation would entail. Given the strategy's novelty, qualitative interviews were conducted to offer first-hand knowledge of the opinions, challenges and problems of the main agents involved in the process and results achieved so far.

Literature review and theory

To create a final product that is clearly differentiated from the traditional bulk-produced olive oil requires applying specialized knowledge to local production procedures which is compatible with how endogenous development is explained in literature dealing with the *milieu innovateur* (Crevoisier, 2004). This process will enable changing firmly rooted local practices (Batifoulier, Biencourt, & Larquier, 2003; Dupuy et al., 1989) which may be difficult at first since innovative stakeholders must fight their way in a system where investment decisions are made mainly by co-operatives.

According to Boschma and Martin's (2010) ideas about evolutionary economic geography, and following the tenets established by Schumpeter (1934), Nelson and Winter (1982) and Hodgson (1993), the evolution of an economy largely depends on the history of each type of activity and the manner in which institutional conflicts have been previously settled. These theories, however, also posit that there is room for new paths, which may be opened accidentally or deliberately (Martin & Sunley, 2006), depending on whether unexpected external shocks come into play or if all the stakeholders in the production chain in one particular area make the most of new opportunities as they arise. This is what is currently happening in the agricultural olive oil district of Jaén: even though the external pressure exerted by low market prices has undoubtedly acted as a trigger for local agents to change attitudes, one should not consider it as unexpected or accidental. Rather, changes are the consequence of a premeditated strategy employed by some agents in the olive oil cluster to keep prices low. Therefore, the move towards upgrading in Jaén is simply the farmers' response to the policy strategy of big companies having a substantial degree of power in the buyer-driven commodity value chain (Gereffi, 1994).

To ensure availability of human capital that is aware of the need to undertake organizational innovations in harvesting and mills, and execute institutional innovations, Blakely and Bradshaw (2002) recommend theories of local development focused only on attracting and preserving businesses in the area be substituted with an alternative theory to ensure there is no shortage of highly qualified

human resources in the region and a solid network of learning, research and development institutions is created. These elements, in combination with the external price-lowering forces and robust support from the regional government, have clearly contributed to the emergence of a collective leadership capable of implementing the upgrading and strategic changes that are required for the local sector to compete in the global marketplace (Stimson, Stough, & Salazar, 2009).

A key element for ensuring the success of new strategies is the market's perception of a high-quality product that is also highly beneficial to health. If the market is willing to pay more for a better product, then farmers will be able to scale down intensive production and turn quantity into quality in the long run, a shift that seems to be increasingly favoured by the market (Radić, Carrà, & Peri, 2015) and how consumers are relating with the rural world. As consumers become more interested in learning how the gourmet product they are savouring has been produced, they also start to value the relation between the product and the place where it was cultivated (Ilbery, Morris, Buller, Maye, & Kneafsey, 2005). This concept lies behind the introduction of new schemes that help improve rural competitiveness by officially certifying the quality and regional origin of a product, as is the case of the Protected Designations of Origin (Sanz Cañada & Macías Vázquez, 2005). It is also found in such recent developments as the novel estate oils which are produced locally following ecological procedures, or in initiatives enhancing the historical and archaeological significance of the estates where the oil is manufactured. These new initiatives are aimed at a class of affluent, increasingly educated consumers who are interested in gastronomy as a cultural or even an anthropological experience.

The current state of affairs may seem novel, but this is not the first time the sector stands at a critical juncture. Olive farmers and oil producers in Jaén have traditionally responded to changing situations through relevant institutional adaptations, such as the creation of co-operatives (Hernández, 1999), improvements in machinery (Parejo & Zambrana, 1994) and the introduction of irrigation (Garrido, 2004). However, these initiatives have been slow in taking shape, given the difficulty of implementing the institutional changes required to face the challenges of new scenarios (Rodríguez & Parras, 2011). Despite challenges, the olive industry in Jaén has reached high levels of productivity and become the world's olive oil leader, though, admittedly, through bulk sales which has created major problems for those dealing with commodities in general and forced dependence upon external marketing channels (Rodríguez & Parras, 2012).

When a socio-economic system, such as the agro-industrial olive district of Jaén, faces a process of institutional breakdown caused by a shift of economic forces throughout the whole value chain, the income earned by the different stakeholders is greatly affected and, for this reason, endogenous institutional changes may be set in motion in order to achieve a new equilibrium. These new resulting institutions contend with the traditional ones and the consequent tension may succeed (or fail) to modify the power relations in the whole value chain or, at

least, in finding new ways of generating value. As Acemoglu, Johnson, and Robinson (2005) describe in their analysis of long-term economic development, the change occurs when a “shock” alters the balance of power in the system and opens a new route towards long-term economic development. In the case of the olive oil agro-district, the external impact comes from the pressure exerted on olive oil prices at origin by its great world distributors since this product is considered a commodity. This article aims to answer questions such as “How are local farmers dealing with new challenges in global marketing?”, “What are the difficulties they are facing in this process?” and “What are the consequences of this change?”.

Research methods

A qualitative research design was created to research the process of behaviour changes in farmers adopting new strategies in harvesting and commercialization of their final products utilizing an interpretivist framework (Neuman, 2011) which allows exploration of subjective values that individuals create to form their own reality of the world interacting with others (Carson, Gilmore, Perry, & Gronhaug, 2001). Qualitative research is a systematic and subjective approach to highlight and explain daily life experiences and to further give them meaning (Burns & Grove, 2009). Conceptually, individuals are understood to perceive the world differently because of their own experiences and perceptions in different contexts (Khan, 2014).

In-depth, semi-structured interviews with farmers permitted exploration of the involved process of creating a high-quality extra virgin olive oil. Interviewee recruitment was conducted using web pages, mass media advertising and technical magazines in the olive oil field. Sixteen people working as managers or technicians in olive-growing and olive-oil-producing firms that had already started to implement an upgrading or value-adding strategy were identified and face-to-face interviews conducted. The interviewees may be divided into three groups. First, there is the handful of entrepreneurs who pioneered high-quality production. Second, there are co-operatives who followed entrepreneurs’ example and took a stand for excellence. Finally, there are other entrepreneurs who also decided to follow suit and are now producing top-quality olive oils. Also, given their crucial role in transmitting codified knowledge and skills to the local stakeholders, the main independent consultants specializing in the farming, harvesting and processing techniques producing oils of the highest quality were asked to participate. Interviews were conducted individually or in groups during the second half of 2014. Interview questions were open-ended and covered the decision to change a firm’s product portfolio, particularly to include a high-quality product, and the main obstacles (industrial, organizational and territorial) firms had to overcome to create an exclusive product. Interviews were audio-tapped with permission from the participant, so as to preserve an accurate account of

the interview to be analysed afterwards. Data were grouped thematically, guaranteeing the anonymity of the data and results. Data analysis used content analysis (Berelson, 1952; Pool, 1959). Mayring (2000a) defines this as a text analysis method empirically and methodologically controlled within the context of communication. Following content analytical rules and step-by-step models, without rash quantification, using a deductive approach, data were processed to identify different categories (Mayring, 2000b).

Although a research limitation is the small size of the sample, the decision about when to stop conducting more interviews was made once responses became redundant, that is, when they seemed have reached the point of saturation (Glaser & Strauss, 2012). Since qualitative analysis includes the possibility of biased interpretation the researchers may have introduced in the deductive process, the categories extracted from the interviews were discussed in the context of the international Symposium Expoliva 2015 hosted in Jaén in May. The constructs were exposed to the regional community of farmers, olive oil producers and international consultants, to reduce risks of misleading deductions and to check the key information. This process found confirmation for the categories constructed.

Findings

Interviewees noted that producing oils highly valued by the general public involves great care at every stage of the process, from the olive grove to the bottle. The main factor contributing to quality is harvesting in October, instead of traditionally reaping in December or January which diminishes oil yield to 15% rather than 21–23%. Also, because less ripened olives are still green they are more difficult to remove from the tree and harvest costs may increase twofold. Indeed, some interviewees recalled early harvesting was extremely foolish. One remarked local inhabitants used to talk about this issue in the taverns, exclaiming, *It's a madness to reap green olives in October!* If the market does not justify this effort, it will simply be non-viable, regardless of the oil's organoleptic properties and health benefits for consumers. As Sánchez Martínez and Gallego Simón (2011) pointed out, the strategy of reducing costs is not available for most farms in the research location because of their location on steep hill slopes. Added to this difficulty, crop intensification would lead to an increase in production, which in turn would lower prices given this territory holds the highest concentration of olive crops in the world. Therefore, a new strategy must be combined with other types of measures. Despite these difficulties, a more rational management of olive plantations would certainly increase their efficiency. This option, however, depends on substantial investments being made, and today, this is possible only for large firms, especially those operating in the new olive-growing areas in competing countries (Argentina, Australia and Chile).

The decision to move towards quality is complex and findings revealed it was clearly made under the pressure of external factors. Given that average bulk prices

at origin are between €1.64 per kg for lampante oil (oil not fit for direct consumption) and €2.02 per kg for extra virgin oil (Fundación del Olivar, 2014), and that overall costs go from €1.32 to €3.06 per kg (depending on the intensity of the culture, the viability of mechanisation and the availability of irrigation), it appeared that a great proportion of Spanish olive farms fall below the profitability threshold (AEMO, 2010), leading the more dynamic farmers to adopt an upgrading strategy for their olive oils. Indeed, despite the lower fat yield of early harvested olives, the price at origin of oil from early harvested olives ranges between €6 and €20 per litre, depending on the variety and bottle container design. In this case, there were no bulk operations, where transactions are expressed in kg. The strategic change is illustrated in Figure 1 which explains three possibilities producers used: cost reduction, concentric diversification and upgrading the value chain.

Concentric diversification (Rodríguez & Parras, 2011) is an option complementary to olive growing. Diversification is already earning some farmers an additional income, such as in the production of biomass for energy. In other commercial uses, such as for medicinal or cosmetic uses, profits are still insignificant. Likewise, the development of nature tourism associated with olive-growing areas and olive oil production is still very much in its early stages, remaining medium-term income supplements for olive growers that do not compensate for the prolonged fall of oil prices.

There exists a third option, however, that this article focuses upon: upgrading in the value chain. What would olive growers do with a top-quality production if the market were not to demand it? It is precisely this fear of the unknown that deterred producers in this study from choosing this course to date, despite the many institutional incentives from government authorities, particularly the regional Government of Andalucía, such as the creation of Protected Designations of Origin, the Interprofessional Association of Spanish Olive Oil (*Interprofesional del Aceite de Oliva Español*) and the Technological Centre for Olive Growing and Olive Oil (*Centro Tecnológico del Olivar y del Aceite de Oliva*), among others. One of our interviewees, an olive oil technical consultant, summed up the situation in these words:

The increase-the-quality message has not really roused farmers until very recently, not because they were unreceptive, but because they saw no advantage in it; it made no sense to produce large batches of high-quality oil and bear the consequent decrease in profit margins, only to sell the oil at the same prices that are paid for oil intended for refining. Now things have changed, because the strategy is to produce small batches.

Upgrading, however, is an option that requires meeting three objectives. First, there needs to be an improvement in agronomic practices followed by olive growers, for which purpose many have either hired specialized technical consultancy services, including crop transportation from field to mill, or have trained as agronomical engineers themselves. Second, industrial practices must be improved, which involves changing the way head millers and other workers

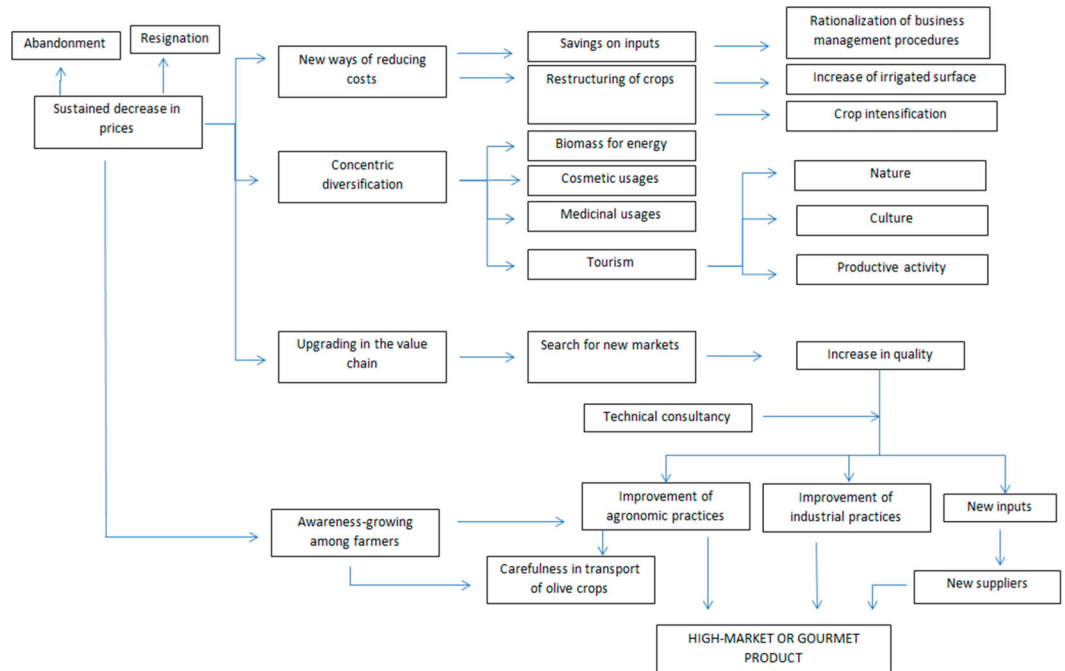


Figure 1. Farmers' strategic decision tree.

involved in the oil-extraction process operate. Finally, new inputs are needed to create stylish oil containers that highlight the quality of the product. The end result is a meticulously produced commodity of great quality, both aesthetical and nutritional, and is aimed at high-end gourmet customers. As explained above, the producers who decided to follow the path towards higher quality were previously divided in three different categories: innovators and two types of followers, cooperative firms and other entrepreneurs. Analysis of interview data enabled identification of the most relevant characteristics for these groups as demonstrated by research participants.

Innovators

Innovators are entrepreneurs who, when olive oil still traded at good prices and received substantial subsidies, realized the time had come to take new courses of action and move towards a production model that would boost intensification while being respectful of tradition and the natural environment. Their objective was to diversify a business sector that previously had focused on bulk production and cheap plastic or metal containers, directing it towards the production of small batches of excellent oils. This became the basis on which their new marketing strategies rested: exporting to quality-seeking markets and selling to retail outlets, specialized shops or gourmet centres in department stores. These early firms emerged in the late 1990s and quickly managed to position themselves and achieve recognition internationally (Oreggia, 2012). Key characteristics shared by olive oil innovators appear in [Table 2](#).

Local stakeholders played a very relevant role and may be called the “creative class”, to use Florida’s (2002) term, since they acted as pioneers in creating excellent products strongly tied to the land. Emphasis was placed on the high quality of the product, the relation between product and land, and the ecological procedures followed to create a top-quality extra virgin olive oil. These endogenous innovators, even though they were local people directly involved in olive growing and oil production, branched out into a more global environment, through their university education, contacts with entrepreneurs in other sectors or specialized training. Such actions challenged traditional practices, taking advantage of public and private knowledge-creation services and networks of technical and entrepreneurial training facilities. The diffusion of knowledge, codified or otherwise, across the district played an important role for innovation. Diffusion depended on the capacity of local technical workers and entrepreneurs to assimilate and learn, but manifestly increased due to the emergence of a creative class and their involvement in the “modest quality revolution”.

Main differences among innovators were based on olive plantation size. Some owned more than 1000 ha and produced over 2 million kg of oil. For these, the option of producing top-quality oil was one more in line with their business. Bulk sales remained the most important part, between 75% and 90%, of the total

Table 2. Key characteristics of innovator olive oil producers.

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- (i) Family-owned and family-run firms
 - (ii) Formally trained in agronomics, in olive growing and olive oil production, and in business management
 - (iii) Employ agronomic engineers to work on the plantations or at management level, and managers, technicians or owners have taken re-fresher courses
 - (iv) Count on specialized external consultancy and hired external consultants for specific activities requiring specialized technical training
 - (v) Used winning quality awards as promotion strategies which, given the lack of resources for advertising campaigns, guaranteed publicity in specialized media and enhanced trust among consumers through bottle labelling
 - (vi) Fostered a good relationship between consumers and countryside by providing product traceability, using organic production techniques and promoting natural and historical values
 - (vii) Used marketing channels at national and, in some cases, international levels
 - (viii) Included the designation of origin in the brand name as an indicator of quality (complementing quality awards) since not all plantations are certified with a designation
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amount of oil produced and as the main source of profit, top-quality oil did not really affect larger firms' long-term success. Other, smaller producers managed to bottle and sell more than 90% of their oil production, between 200,000 and 500,000 L, mostly high-end extra virgin olive oil. For them, profitability of olive plantations was tied exclusively to the production of top-quality oils and business management methods were more developed, either because production costs are higher, given the specific features of their crops, or because of their special entrepreneurial approach to production.

Co-operative firms

Over two-thirds of the total olive oil production in Jaén comes from co-operative firms normally constituted by hundreds of members who have an unequal relationship with the agricultural sector. Until very recently, this type of social economy firms focused exclusively on the production of large quantities of oil and were unconcerned about quality. Innovation was simply disregarded, for a number of reasons: the diversity of interests among members, the inherent difficulty to make decisions in a co-operative and members' very low participation in co-operative affairs, mainly due to advanced age. Out of the 200 olive oil co-operatives in the province of Jaén, only 10% or 15% started on the path towards higher quality and such initiatives remain at a very preliminary stage, if only because making decisions requires the board of directors be resolute and receptive to market trends and sales opportunities for high-quality oils. Common features of co-operatives identified appear in [Table 3](#).

This strategic model, adopted by some firms a mere five years ago, was setting an example for many other co-operatives starting to produce what is commonly

known as “green oil”, that is, oil from olives harvested in the second half of October. Although the relative weight of this early oil was practically insignificant compared with total production (1–2%), the co-operative gained a reputation for quality in the area and among its members, who were all too often sceptical about this type of strategy, and among clients, who became increasingly receptive and willing to buy products. This scenario was a reality for some co-operatives, whose brand products were awarded prizes in regional and national quality contests which increased production of bottled extra virgin oil five- to sixfold, satisfying the increasing trend for high-quality products. In most cases, however, the target market remained local, with co-operatives’ members acting as distributors among relatives and friends, or as direct consumers.

Other followers

Following the course of action taken by innovating entrepreneurs, followers adopted new attitudes towards production. Followers were small-sized, family-run firms. The new generation currently running such firms were entrepreneurs with a demonstrative effect, committed to innovation and convincing the general public that their products must be seen as natural. They aimed to combine an efficient oil marketing system with new opportunities offered by their local rural areas susceptible to providing added value to their products, following the model adopted in the wine regions of La Rioja or Ribera del Duero, in northern Spain. Common features of followers are summarized in [Table 4](#).

A key challenge facing entrepreneurs when deciding to adopt upgrading strategies is marketing which remains the main weak point among olive producers. One interviewee remarked, *We find ourselves at a deadlock commercially. We lack training in marketing. Can you help us?* This particular entrepreneur had produced

Table 3. Key characteristics of co-operative olive oil producers.

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- (i) High production figures due to quantity of members supplying olive crops and buying oils
 - (ii) Growing and voluntary participation in upgrading project and early harvesting only to obtain higher quality oils
 - (iii) Commenced only after the younger generation has taken over running co-operatives
 - (iv) Quality awards used as promotion strategy
 - (v) New professional management model created due to strategic move towards high-quality production
 - (vi) Members delivering higher quality olives are paid more due to crops being sold at higher price
 - (vii) High-end extra virgin oil batches constitute a tiny fraction of total output and still sold in bulk
 - (viii) Receive external consultancy assistance
 - (ix) Use sales channels in national and international markets
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Table 4. Key characteristics of followers as olive oil producers.

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- (i) Family-owned or run firms
 - (ii) Generational shift has brought about a change in strategy
 - (iii) Use quality prizes as a promotion strategy
 - (iv) Predominantly bulk producers seeking a niche in the target market
 - (v) Owners are highly qualified professionals and hire external consultancy services
 - (vi) Limited marketing capacity
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a small amount of high-quality oil and won international prizes, but he still felt at a loss about how to make his next move, asking questions such as, *What projects are going on out there? How can I find my niche?* As another interviewee, who produces some of Spain's most prized oils at both national and international levels, acknowledged, *creating a good oil is easy, but selling it certainly is not.*

Attempts to achieve product differentiation and supply a high-quality product witnessed many changes for olive oil production in Jaén which was not without problems. In the olive fields, novel techniques were adopted, such as selective fruit harvesting, earlier harvesting, careful tending of the whole cultivation processes and more environmentally respectful production practices. At a business level, changes consisted of organizing firms into different departments, shifting to a more professionalized management, taking a greater interest in target markets and participating in commercial fairs. These changes required the creation of new firms. As one of the *innovators* pointed out, *Our company was created to commercialize, so as to overcome the problems that the old cooperative was unable to deal with.* Some new developments aligned with quality enhancement, differentiation and upgrading processes highlighted in prior research (Ilbery et al., 2005; Vanclay, 2011).

The endogenous response was particularly striking in the case of the co-operatives because they are a type of firm characterized by stability, not dynamism. One interviewee illustrated the situation in this way:

The cooperatives were created to protect the local small farmers, not to take risks. Their purpose was to ensure the stability of local income, simply because a cooperative adopting a new but wrong strategy could be disastrous for the town and cause very serious social problems.

Any change of strategy requires broad consensus and is likely to become the object of heated disputes between change advocates and critics. According to the president of a co-operative which already embarked in the change process, *there are many out there just waiting for us to suffer a commercial failure that would prove how wrong we were.* Despite this resistance, growth potential in co-operatives was so great that the reluctance shown by most local agents to new practices may, to a certain point, be considered an advantage, because it allowed for the pace of change to be managed in such a way that supply remained lower than the

incipient demand given high-end oil production is still very low (20,000 L per crop season and co-operative on average).

Some past experiences ended in failure, confirming local farmers' belief that selling price does not compensate for the costs and efforts required to produce a high-quality oil (Coq-Huelva, García Brenes, & Sabuco-i-Cantó, 2011). Nevertheless, producers and stakeholders at large, in Europe and in North America, tend to reject changes aimed at enhancing their products and would rather let others take the risk until financial profits are certain (Ilbery et al., 2005). Such reasons are why the innovating group of entrepreneurs has such an important role to play and why it is crucial to know how they are manoeuvring to substitute the traditional modus operandi with new practices that will allow them to focus on product differentiation. As one of the *followers* admitted, *imitation is a very good way to reduce uncertainty*. What is perhaps more important for the territory, however, is to adopt a cognate strategy since upgrading has collateral beneficial effects for the firm initiating change. Innovating firms may break into retail entities previously unavailable, overcoming international reports warning the current standards for extra virgin olive oil are widely unenforced and allow a wide range of olive oil qualities to be marketed as extra virgin (Lynch, 2013).

There is a certain degree of risk that recent innovative trends may become thwarted, as happened in Jaén, due to the influence of those against innovation and new models of work organization made worse by the sheer spatial proximity and organizational similitude among firms (Boschma, 2005). It is possible, however, that these deterring factors may reinforce the opposite trend by expediting innovation and change. If appropriate circumstances exist, the region may be regenerated and strengthened through new institutions and values, creating new services and products (Rodríguez & Parras, 2011) and new ways of understanding work objectives of the district. Some institutions previously created to reduce the dependence of external agents have provoked this contrary effect, such as the POOLRED system which shows the average prices quoted in the market, giving transparency and allowing all market operators to have access to this information. The marketing officer of a second-degree co-operative explained, *We have created institutions that we believed would be advantageous to producers, but which actually allow large bulk buyers to fix even lower prices*. This problem is further aggravated by many farmers' financial situation, specifically lacking money to repay investments for improving crop quality and efficiency.

Discussion and conclusions

For the shift towards new practices to take root, a strong knowledge-based vision should be shared among local stakeholders. For years, all that was needed for olive oil production in Jaén was common know-how resulting from the geographical proximity of producers. Today, however, this is insufficient for innovate production processes and for prompting stakeholders towards needed change. Since

unwillingness to change is intrinsic to systems characterized by a low propensity for innovation, as is the case of rural agro-industries, it is crucial to involve a few leading figures whose perception of the olive oil industry is similar to other global business agents, both at the level of knowledge and of organization. The absence of bridges between local and the global spheres at a management level has usually proved to be an overwhelming obstacle. This has certainly been the case of rural business enterprises in Jaén for many years. Despite this problem, Carrincazeaux and Coris (2011) suggest that, although proximity may be spatial, it can also be temporal; if local leaders embark on business trips or attend conferences, fairs and other events, they could reach out to key international actors and establish the necessary contacts (social, institutional, organizational and knowledge-based) needed to stimulate change, ensure successful innovation processes and generate added value for the region.

Another key factor required for success, however, is generational change in the management or ownership of the farms. This does not just entail handing over the family business to the younger members of the family, but rather requires a change in the kind of people running it, better trained and educated individuals who are aware of what needs changing and who know how to deal with new conditions. There often exists great hostility to risk-taking in rural areas, however, although this attitude has improved lately as a result of the fall in profitability of the plantations (Barjol, 2014). Risk may be kept under control through the release of novel products, a Schumpeterian, yet gradual, innovation that breaks away from the local farmers' individual perceptions of their work on the land and its purpose (Coq-Huelva et al., 2014). As innovating as some firms may be, they still send a large proportion of their olive crops to the bulk market, and more significantly, they still seem to consider innovation as a non-profitable activity (Coq-Huelva et al., 2011). Even for these firms, the innovating processes have been introduced with total disregard of business principles and only for the purpose of enhancing their brand name. Overall, interviewees' comments reflect farmers feel the whole project is an adventure that may be allowed to continue on condition that it does not cost them any money, but which would have to be terminated if the expected rewards take too long to arrive. Smaller firms see their strategic bet for quality as a matter of sheer survival, *What do we want to leave to our children, a profitable firm or one doomed to be sold?* In their opinion, the future profitability of the industry will be severely thwarted if bulk commercialization of olive oil is perpetuated. As another interview commented, *We must make profits right from the start; we just cannot offset the cost of producing high-end oils with massive sales of conventional olive oils, like the big ones do.*

Generally, research participants believed enhancing products must be accompanied by greater profit margins to make it worthwhile for them, as producers or else the trend of decreasing prices may well cause the abandonment of many plantations. Olive oil product enhancement also, however, leads to setting up work procedures that are more environmentally respectful, which,

incidentally, is a development more valued by consumers and agricultural policy-makers and allows for economic diversification into other sectors, such as the tourism and culture industry (Alonso & Northcote, 2010; Cohen, Anglés, Márquez, & Jiménez, 2015; Millán Vázquez de la Torre, Amador Hidalgo, & Arjona Fuente, 2015). Hence, even in the most traditional spheres, the processes of innovation and change appear at the root of endogenous development. To advance understanding how to strategically transform rural areas, it is essential to compare developments in olive oil production with similar cases where intensive monocultivation has managed to adapt to the needs of the global market.

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