



Analysis of the spatial relationship between small olive farms to increase their competitiveness through cooperation



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ABSTRACT

Small olive farms typically find it hard to compete with their larger competitors due to unfavourable conditions in terms of labour costs, land fragmentation and structural capital. These conditions result in higher production costs that reduce their competitiveness, leading to progressive exclusion from domestic and international markets and the abandonment of farming. In this scenario, cooperation between farmers to increase farm size and reduce land fragmentation may be an innovative strategy to improve the competitiveness of small agricultural holdings and avoid farm abandonment. The aim of this paper is to characterize the spatial structure of the traditional olive grove in the province of Jaén (South of Spain), the world's leading olive oil producer, to identify the areas where farmer cooperation can be effectively implemented. The results of this study confirm that there are large numbers of small, barely viable olive groves and show different ways to promote cooperation between farmers according to the structural characteristics of their farms and their spatial relationships. In particular, when small olive farms have large neighbours, assisted cooperation systems should be implemented, while when small olive farms are concentrated in areas without larger farms, shared cultivation systems would be more efficient. This paper also provides information for the design of public policies aimed at enhancing the competitiveness of small agricultural holdings.

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1. Introduction

Small agricultural holdings (SAHs)¹ play an important role in farming in the EU today. In 51% of EU member states, farms covering less than 2 ha occupy more than 25% of agricultural land. In the EU as a whole 69% of farms cover less than 5 ha and only 2.7% are larger than 100 ha (European Commission, 2013). The structure of farms in Europe also differs depending on the type of crop. Olive growing, for instance, is a longstanding example of small farming and is concentrated in Mediterranean countries, where the production structure is highly fragmented (European Commission, 2011). In fact, in Europe's main olive producing countries, Spain, Italy and

Greece, the average size of olive farms is only 5.8 ha, 1.8 ha and 1.5 ha respectively (Eurostat, 2015).

SAHs in olive groves are subject to sustained demographic, commercial, technological, institutional and economic pressures due to several interacting causes. Typically, they are located in rural areas that have been and often still are affected by rural exodus. This worsens the living conditions and quality of life in rural communities, and is a crucial factor in the decision to abandon farming. It also limits generational renewal in the management of farms. Currently, the most common age bracket for farm managers is 65 or over, and a majority (53.2%) of farm managers in the EU-28 are aged 55 or above, in other words close to or beyond normal retirement age (Eurostat, 2010). Small olive farms are normally geographically dispersed and have low production, which from a commercial perspective means that they do not have the same power to negotiate in the market as larger agricultural holdings, and are forced to become "price-takers" (MARM, 2010; CEICE, 2011). In Spain, Italy and Greece, for instance, a few big groups control most of the olive oil market and set the price at which olives are bought and sold. Furthermore, the fact that the international olive oil market is now increasingly globalized means that European SAHs face direct competition from larger holdings in "new

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¹ Due to the wide variation in farm structure across the EU member states and the lack of consistent data for all member states there is no commonly agreed definition of SAHs. Physical parameters such as farmed area or labour input, or economic criteria such as turnover are typically used (European Commission, 2011). The most common criterion is field size, with small farms often being defined as those with areas of less than 5 ha (European Commission, 2013).

producing countries” (Argentina, Australia, Chile, China, Mexico, New Zealand, South Africa and United States of America) with better structural conditions and/or lower salaries, making exporting increasingly difficult.

In technological terms, SAHs tend to use older machinery because on the one hand it is difficult to repay the cost of acquisition of new machines within their normal lifetime and on the other it is harder for them to obtain credit to finance the purchase of new equipment. Due to their socio-demographic and financial limitations, small farmers often do not meet the criteria to access the credit they require (European Parliament, 2014). Institutionally, although the viability of SAHs depends heavily on institutional support, they have often been neglected by the Common Agricultural Policy (CAP). This is because CAP support has historically been based on surface area and production levels, clearly favouring larger agricultural holdings. Even in the most recent policy reforms, where more emphasis was placed on the environmental and social benefits provided by farmers, smallholders did not receive enough administrative support to enable them to overcome the various administrative hurdles to access the available credit or funding. These limiting conditions reduce farm profitability, often rendering them unviable without the subsidy from the CAP (Colombo et al., 2015). Even with the existence of extensive subsidies, the continuity of these farms is often only possible due to unpaid family work. Many of them would be unprofitable if the labour provided by family members was valued at the same rate paid to external farm-workers (Mylonas, 2015).

Notwithstanding all these pressures and limitations, SAHs represent a model of social agriculture which is still predominant in EU and will continue to coexist with other, more large-scale, market-oriented models of agriculture (European Parliament, 2014). This is because in addition to purely economic considerations, the social, cultural and environmental aspects of production must also be considered to enable us to foster the sustainable development of rural areas. Here, SAHs play a role that goes far beyond agricultural production and includes the delivery of public goods such as environment and landscape conservation, the prevention of fire risk, the monitoring and care of rural areas, the maintenance of employment in remote areas and a whole set of cultural functions linked to the preservation of traditions, customs and other non-material heritage.

Olive is regarded as a “social crop” in that olive growing is amongst the agricultural activities that create most jobs per hectare. In Andalusia, the region with the highest production in the world of olive oil and table olives, olive farming provides more than 30% of agricultural employment and is the main economic activity in more than 300 of the region’s 771 municipalities (Rocamora-Montiel et al., 2014). In these areas olive farming is one of the few, if not the only sustainable activity that holds back rural exodus and contributes to preserving the characteristic features of rural landscape. Environmentally, SAHs in the olive sector play a key role in the provision of landscape, biodiversity and soil conservation (Villanueva et al., 2014; Arriaza et al., 2008; Colombo et al., 2006), because they are typically farmed extensively with low inputs and semi-natural herbaceous vegetation. Finally, extensive olive groves are the basis for a whole series of cultural activities related to gastronomy, tourism and crafts (Instituto de Estudio and Giennenses, 2008).

The multifaceted pressures described above directly or indirectly reduce the financial returns of SAHs in this sector, whilst the public goods they provide are not remunerated by the market.² As

a result, their economic situation has worsened significantly over the last decade (Colombo and Camacho-Castillo, 2014), and there is currently a risk of farm abandonment, especially in marginal production areas (Duarte et al., 2008). The abandonment of olive-growing farms is already having significant effects on the land degradation process in traditional olive-growing areas, and these effects are expected to be exacerbated by the vulnerability of Mediterranean (semi-arid) regions to the impacts of climate change and extreme weather events (Palese et al., 2013). Such is their role in society that the abandonment of olive groves would lead to the loss of a wide set of social and cultural functions (Rocamora-Montiel et al., 2014).

In this scenario new competitive strategies that allow SAHs to save on production costs, whilst maintaining a production model that allows the multi-functional development of rural areas, are urgently required. This is particularly true in areas where, due to topographical and climatic limitations, there are no other feasible alternatives for boosting profitability, such as for example the installation of irrigation or intensive cultivation (Sánchez Martínez and Gallego Simón, 2011).

Recent research has shown that cooperation between farmers can be an effective way to improve the economic, social and environmental performance of SAHs (Vitry et al., 2015; Rocamora-Montiel et al., 2014). Fostering farmer cooperation in olive production, however, requires specific policies, aimed at horizontally and vertically integrating the SAHs production structure. This is because the olive oil production sector is generally very fragmented and poorly organized. Indeed, despite the fact that most farmers belong to cooperatives, these often do little more than distribute CAP subsidies and other administrative work, instead of acting as an organized business enterprise with a clear strategy (Mylonas, 2015).

In order to promote effective cooperation between producers that goes beyond the current level of cooperativism, we must find out more about the spatial relation between SAHs. Farmer cooperation relies on the relations between neighbouring farmers: in practise, the spatial relationship between SAHs is the main factor that acts as a catalyst or an impediment to cooperation, either encouraging or preventing the interactions that create economies of scale and reduce production costs. Of course this is not the only issue to be considered. As Rodríguez-Entrena and Arriaza (2013) point out, the promotion of social capital³ is paramount in encouraging farmers to adopt innovative management schemes. Flexibility in the cooperation arrangements, transaction costs and the aid of experts who can advise cooperating farmers are also prerequisites for improving cooperation (Rocamora-Montiel et al., 2014; Villanueva et al., 2015a). In this context, mixed evidence has appeared regarding the willingness of farmers to participate. Villanueva et al. (2015a) found that farmers’ opinions about collective agri-environmental schemes (AES) in olive groves vary a great deal, because of their differing perception of transaction costs and of the expected disutility related to losing part of their freedom to manage their farms. The same authors recognise that cooperation may be even more difficult in the case of irrigated olive groves, more oriented to the production of private goods (Villanueva et al., 2015b). In any case, all the published literature acknowledges that the expected benefits of cooperation far outweigh its expected costs.

To the best knowledge of the authors no previous research has been done on the spatial relationship between SAHs. The aim of

² Even in those places where agri-environmental schemes (AES) are in operation, the payment mechanism is based on compensating farmers for the additional costs and the income foregone (including transaction costs) as a result of the com-

mitments they assume and, while providing some additional income, does not significantly improve the profitability of their farms (Uthes and Matzdorf, 2013).

³ Social capital comprises the networks, shared norms, values, and understandings that facilitate cooperation within or among groups (OECD 2001).

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