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Territorial management contracts as a tool to enhance the sustainability of sloping and mountainous olive orchards: Evidence from a case study in Southern Spain

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ABSTRACT

The continuity of farming in traditional sloping and mountainous olive production systems (SMOPS) is at risk, especially in marginally productive areas. The abandonment of olive production on sloping lands would have adverse economic, social, environmental and cultural effects. To tackle this risk of abandonment and to improve the sustainability of traditional SMOPS, we propose the Territorial management contracts (TMC) of rural areas. The potential of this instrument to be specifically applied to organic olive production systems on sloping lands is assessed. The paper then summarises the results of a survey of Andalusian farmers in sloping and mountainous areas aimed at identifying key characteristics of the TMC with the potential to enhance its uptake in target farming communities. Results show that farmers are well-disposed towards TMC, and that issues such as flexibility and external advice need to be considered for its successful implementation. From a policy perspective, the instrument is well aligned with the objectives of the last reform of the EU Common Agricultural Policy (CAP).

Introduction

Agricultural abandonment is a complex multi-dimensional process driven by various economic, environmental and social factors (Verburg and Overmars, 2009; Renwick et al., 2013). Agricultural land abandonment poses severe threats to predominantly agricultural areas in the Mediterranean Region and is thus of high political interest (Weissteiner et al., 2011). Amongst other effects, agricultural land abandonment leads to a loss of income for farmers, impacts on the amenity value of agricultural landscapes, increases wildfire risk and contributes to migration from rural villages to cities. These effects in turn impact on the tourism and recreation potentials of abandoned areas, contributing to a reduction in the general economic viability of communities in agriculturally dominated areas. Agriculture lies at the heart of economic activity in some mountainous regions, often entailing high environmental value, making these regions particularly vulnerable to the impacts of land abandonment. According to García-Ruiz and Lana-Renault (2011), farmland abandonment in Europe affects thousands of square kilometres,[3] and is concentrated in mountainous areas, where depopulation and difficulties with the mechanisation of agricultural production have already resulted in the abandonment of fields on steep slopes. Abandonment can follow different patterns in response to policy drivers. For example, the various degrees of farmland abandonment characterised by DLG and EC-LNV (2005), Pointereau et al. (2008) and Keenleyside and Tucker (2010) – "semi-abandonment" "partial abandonment" or "cessation of productive farming" – describe situations in which the land is not formally abandoned but subject to some form of management. The minimum maintenance of orchards necessary to meet cross-compliance requirements (i.e., certain environmental conditions that must be met), so that the single farm payment and other Common Agricultural Policy (CAP) payments can be claimed stands out as one such form of management. This intermediate level of abandonment, however, can be seen as one step towards complete abandonment, driven by factors such as an ageing

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[3] The ambiguity of this affirmation is due to the lack of consistent measurement across the EU to ascertain the current extent of abandonment (Pointereau et al., 2008).

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farming population and associated lack of successors, and competition with producers in more favourable locations.

Traditional olive orchards on sloping terrain in the Mediterranean basin constitute a regionally important agricultural system that is particularly at risk of abandonment because it is rarely economically sustainable (Duarte et al., 2008). The OLIVERO project investigated the environmental and socio-economic sustainability of sloping and mountainous olive production systems (SMOPS) to assess whether or not there is a future for olive production on sloping land, and identified actions that farmers and policy-makers could take (Fleskens and de Graaff, 2008). SMOPS generally encompass disadvantaged or marginal types of olive grove, in contrast to groves on flat terrain that are typically of greater productivity and economic viability (Beaufoy, 2008). Olive groves on sloping land tend to have relatively low productivity, lack successors to ensure continued cultivation, suffer from soil erosion and wildfire risk and have limitations in terms of access to markets (De Graaff et al., 2008). These characteristics are important determinants of abandonment, which, according to De Graaff et al. (2008), may affect almost 15% of SMOPS in the medium term. However, heterogeneity also exists between SMOPS, which comprise traditional orchards, semi-intensive orchards, intensive orchards and/or organic systems (De Graaff et al., 2008). In addition, there are differences between traditional rainfed and irrigated production systems. This heterogeneity implies that the different types of SMOPS face different pathways for future development. For example, some SMOPS may be subject to abandonment, while others may be further intensified or may give way to other production systems such as organic farming (Stroosnijder et al., 2008). Therefore, appropriate management strategies to prevent increasing abandonment need to consider both the distinctive features and the heterogeneity of SMOPS.

The Andalusian region of Southern Spain is typical of an area in which olive cultivation plays a major role in agricultural production, and where SMOPS are a characteristic part of the land use mosaic shaping territorial identity. Olive production is the main source of agrarian employment and constitutes the primary economic activity of more than 300 of the region's 771 municipalities. In this research we focus on traditional, non-mechanised and rainfed SMOPS, which constitute the most vulnerable category among SMOPS in terms of abandonment risk. Traditional olive orchards occupy two thirds of the Andalusian region's olive area (Cubero and Penco, 2012), and 24% of the orchards are located on mountainous land (with slope greater than 20%). In addition to the economic and social role of traditional SMOPS in Andalusia, they also have a significant environmental dimension by overlapping with Nature 2000 and High Nature Value Farmland (HNVF) (CAP, 2003).

According to Arriaza et al. (2002), in the South of Spain land abandonment is expected to affect more than one third of SMOPS in the coming decades. Duarte et al. (2008) indicated that the abandonment of traditional SMOPS would have negative environmental consequences, such as a decrease in biodiversity and an increase in soil erosion, as well as resulting in major changes to the traditional Mediterranean landscape. It would also increase the fire risk associated with abandoned land (Moravec and Zemeckis, 2007). In social terms, De Graaff and Eppink (1999) highlighted the historical role of olive trees in the development of rural communities in the Mediterranean's poor, rainfed areas.

Previous research has specifically proved the existence of social demand for ecosystem services provided by SMOPS. For example, Arriaza et al. (2008) found that social demand for non-commodity outputs from mountain olive groves in Andalusia exists, and discussed the implications that its consideration could have in the design of future agricultural policies. Colombo et al. (2005) identified a considerable social demand: to alleviate the negative off-site effects of soil erosion on pollution of water resources; and for the conservation of biodiversity associated with the appropriate management of SMOPS. The authors also found that Andalusian citizens not only cared about the environmental dimension of soil erosion (surface and ground water quality, landscape desertification and flora and fauna), but also for the viability of rural communities, specifically in terms of rural employment. Finally, Kallas et al. (2006) observed that mountainous olive groves help to keep rural areas populated, and contribute to erosion prevention and the amenity value of landscapes.

Arguably, agri-environmental schemes represent a suitable policy instrument to tackle the problem of sustainability of SMOPS and, at the same time, to respond to the social demand for the ecosystem services provided by this system. However, previous policy responses have been proven to be inadequate to ensure sustainable SMOPS (Beaufoy, 2008). In this context, the lack of geographical targeting, which leads to the dispersion of agri-environmental contracts over large areas, emerges as an important feature (Hanley et al., 1999; ECA, 2011; Kuhfuss et al., 2013). Clearly, if the application of agri-environmental measures is jeopardised in this way, this represents an impediment to the achievement of the desired outcomes in a specific area. This is because to achieve significant improvement in the local environmental state requires the global environmental effort to have reached a minimum level of intensity, or to have been applied on a sufficient area in the zone of interest (Dupraz et al., 2009). Additionally, present agri-environmental schemes are often overly complex and include a large number of objectives, complicating the measurement and corroboration of results (ECA, 2011).

The combined evidence of social demand for the services supplied by SMOPS and the continuing trend of SMOPS abandonment despite incentives under current agri-environmental schemes motivate the development of novel institutional arrangements to tackle SMOPS abandonment and its associated negative impacts. This paper focuses on Territorial management contracts (TMC) in rural areas as a policy instrument, as set out in the Andalusian Act 5/2011 governing olive growing, but not yet operationalised in SMOPS. TMC are formal agreements between a group of farmers and the public administration that require the farmers within the group to meet a number of commitments to improve both production-related conditions and ecological, cultural and socio-economic aspects of their farms. The public administration commits to pay the group of farmers for achieving the actions or objectives agreed in the contract. To the best of our knowledge, the use of collective arrangements in SMOPS has not previously been investigated in the literature, despite being an important topic in discussions regarding the CAP post 2013. Indeed, issues such as cooperation or the creation of producers' associations are considered throughout the design of regional Rural Development Programs (RDPr) and are endowed with higher co-financing rates (European Commission, 2011). Furthermore, in the new CAP policy framework, measures requiring cooperation have been significantly reinforced and extended to support a wide range of types of cooperation. This includes joint contracts as an additional element of the agri-environmental measures that explicitly also cover pilot projects (European Commission, 2013).

The objectives of this paper are twofold. Firstly, to develop a conceptual framework for TMC associated with a switch to organic farming in the context of SMOPS,[4] as an effective tool to increase

[4] It should be clarified that the implementation of TMC does not necessarily have to be restricted to organic olive farming in SMOPS. Indeed, collective approaches have been suggested in the last reform of the CAP irrespective of the crop or the area considered as a tool to enhance a better performance of agri-environmental measures. However, in the current research we have confined its application to organic SMOPS because of several inherent characteristics of this system such as