ENVIRONMENTAL, ECONOMIC AND SOCIAL INDICATORS OF RURAL DEVELOPMENT IN AGROFORESTRY AREAS

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INTRODUCTION

Today, the sustainable development of rural areas has become a key point of social and agricultural policies. Its objective is to improve both the quality of life and the economic well-being of the residents of relatively isolated and depopulated areas.

In this context, organic farming has been identified as a model with a high potential to contribute to the development of rural areas, since organic farmers could benefit from the perception of payments for ecosystem services, from non-farming activities related to this model of production, such as environmental education or agro-tourism, and as a consequence of meeting specific consumer demands. Although such contribution to the rural development has been addressed by several authors, there is no consensus about this topic, as the externalities of organic farming depend on many factors (Lobley et al., 2009).

Moreover, the number of studies addressing this issue in relation to the extensive livestock farms is scarce. Due to this, the study of the potential contribution of different organic and conventional livestock systems in the “dehesas” is interesting, since this agro-forestry system has a high environmental value and is located in unpopulated areas with few job opportunities outside the agricultural sector.

In this context, the objective of the present work is to determine whether organic beef cattle farms located in the dehesas contribute to rural development in a higher degree than conventional ones.

MATERIAL AND METHODS

The data collected correspond to 63 dehesa beef cattle farms (30 conventional farms and 33 organic farms). The data were obtained through direct survey interviews with dehesa farmers which were carried out in 2012.

The analysis were carried out on the basis of three groups of farms. The first group comprised 30 conventional farms (named 'Conventional'). The second group (designated as ‘OFWOOS’: Organic farms without organic sales) included 22 holdings certified as organic but which neither fattened their calves nor sold them as organic.

The third group (called 'Fully organic') comprised 11 organic-certified farms that fattened their animals and sold them as organic. Descriptive statistics and frequencies for the quantitative and qualitative indicators were calculated. We carried out ANOVA and Chi-square tests with the aim to check the existence of statistically significant differences among the group of farms. All the analyses were performed using the SPSS (v.21.0) statistical package.

RESULTS

In relation to the social aspects, the two groups of organic farms showed a higher level of diversification (39.10% of OFWOOS farms and 50.00% of fully organic farms carried out more than 1 productive activities at the farm level, respectively). These farms also showed increased rates in social interaction (68.20% of OFWOOS and 100.00% of fully organic farmers belonged to cattlemen’s associations). However, the involvement of farmers in selling their products was really low, as only some of the fully organic managers (10.10%) carried out direct sales to consumers. With regard to the workforce, fully organic farms were the group that used more labour (2.10 Annual Work Units (AWU) per farm). Moreover, 'fully organic' farms had a greater percentage of non-family workers (51.27%).The ratio permanent/temporary workers was also substantially higher in these farms (37.82%). However, the per AWU salaries paid in the organic farms (7,186.67 € in OFWOOS, and 8,354.88 € in fully organic farms) were lower than those of the conventional ones (10,395.65 €).

With regard to the economic analysis, fully organic farms sold more yearlings per cow (0.45) and Conventional farms (0.07). However, the latter sold more calves per cow (0.81) than the OFWOOS (0.71) and fully organic (0.65).

In relation to the environmental analysis, organic farms (especially the fully organic ones) showed to carried out a set of farm management practices more environmentally friendly. Such set of practices included a higher degree of integration between crops and livestock species (81.80% in fully organic farms, 59.10% in OFWOOS, and 40.00% in Conventional farms), a greater level of natural heritage conservation (81.80%, 40.90% and 30.00% respectively), a better dung management (54.50%, 18.10%, and 3.30%), reduced use of pesticides, herbicides and mineral fertilizers (90.90%, 100.00%, and 63.30%), and a lesser reliance on veterinary medicines (36.40%, 63.30%, and 6.70%) (Fig. 1).

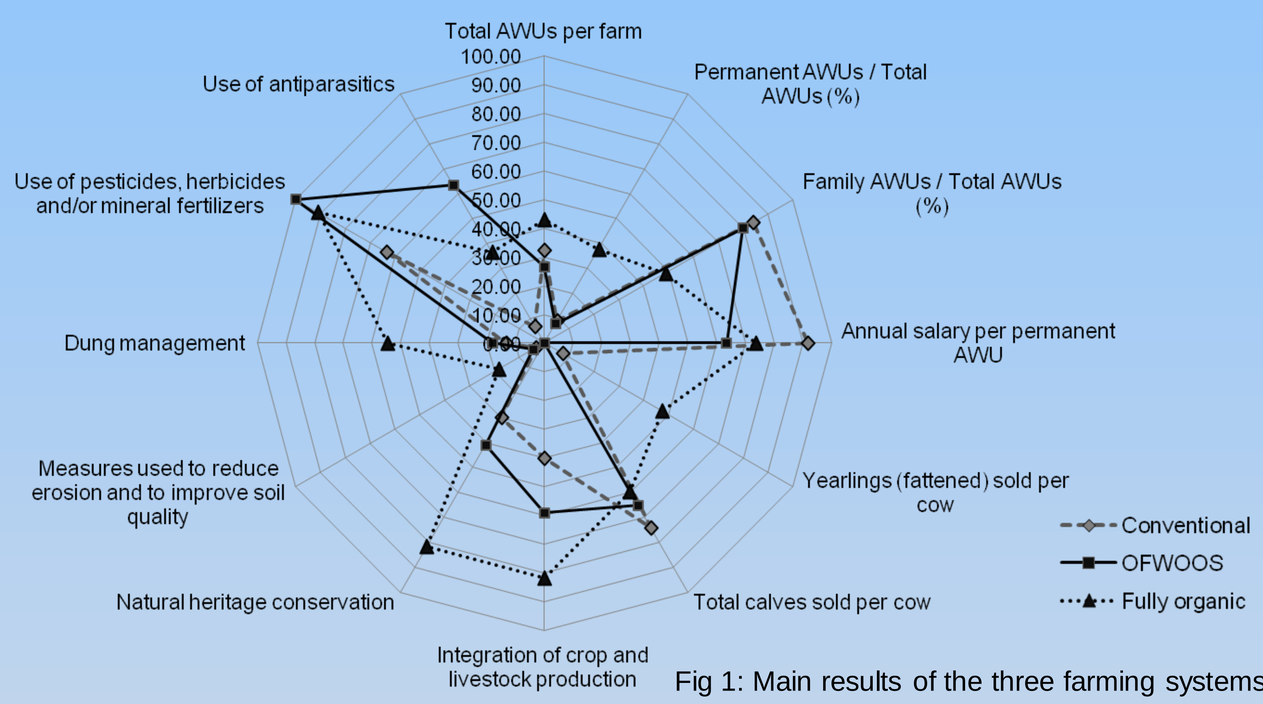

Fig 1: Main results of the three farming systems (% of max. value).

DISCUSSION (AND CONCLUSIONS)

From the resuls of the social indicators, it is remarkable that the involvement of organic producers in selling their products was low, despite this practice being a key to the profitability and survival of the organic farms. Other authors also found a weak relationship between the condition of being organic and direct sales (Lobley et al, 2013).

The higher presence of workforce implies a greater potential for rural development, and it could be explained both by the higher degree of business diversification and the higher integration of crop and livestock production, as those aspects increase the need for labour. Also, this could be explained by the fact that the managers of the fully organic farms used to have another job apart from being farm managers. According to Lobley et al. (2009), the differences found among organic and conventional farms in this sense, are mainly due to the characteristics of the production system, instead of being due to the condition of being organic.

With regard to the economic analysis, the results were greatly influenced by the fact that the fully organic group fattened their calves.This allowed them to sell their calves at a higher price. However, the higher price of the organic feedstuff and the longer productive period of these farms explained the scarcity of differences found among the groups of farms. However, other authors found that organic beef cattle farms had lower economic results in this sense (Blanco-Penedo et al., 2012; Gillespie and Nehring, 2013). In accordance with our study, Hrabalová and Zander (2006) did not find differences between organic and convnetional beef cattle farms with regard to their dependence on subsidies.

In relation to the environmental analysis, several authors have demonstrated the better performance of organic beef cattle farms (Blanco-Penedo et al., 2012). The set of practices implemented in such farms have been identified as recommendable options for a sustainable land use management (Dumont et al., 2013) that deserves to be taken into account and promoted by policymakers due to their positive agro-environmental and socio-economic externalities.

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