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Homo Economicus and the Shepherd: the Traditional Sheep Farmer Facing the Modernisation (or Intensification) of European Livestock

Abstract

The economic importance of sheep farming is somewhat reduced from a macro-economic point of view and only makes up a small part of agrarian income and employment. The quantitative macroeconomic evidence shows that the activity of traditional sheep farming is not profitable enough, while the trends seem to be moving toward a reduction in the number of farms, in their concentration and in their intensification. The paper presents the research results with the focus on vocational motivations of farmer.

Keywords: sheep farming, sustainability, microeconomy vs. personal motivations

Introduction. The decline in sheep farming

The economic importance of sheep farming is somewhat reduced from a macroeconomic point of view and only makes up a small part of agrarian income and employment. The sheep and goat sector makes up only 4% of European livestock production, 1.66% of agrarian output and 0.05% of GDP (De Arriba 2013). In any case, the relative importance of this sub-sector on general agrarian output is limited, the average of the EU-27 being 1.66%.

According to the latest data available, total sheep farming production in the European Union (EU) amounts to 1,607,000 tonnes (Table I). At the same time, production in the sheep and goat farming sector has experienced

a reduction in activity over the past few years, specifically since the present international economic crisis began. Measured in euros, production has fallen sharply from 6.181 billion euros in 2005 to 5.136 billion euros in 2012 in the EU.

Table 1. Sheep and goats in EU-27: production (millions euro), population (1,000 heads)

	2012	2011	2009	2005	2000
Production	5,136	5,311	4,935	6,181	n/a
Sheep population	n/a	n/a	90,774 (2008)	96,235	102,233
Goat population	n/a	n/a	10,901 (2008)	12,994	13,235

Source: Eurostat (2014).

Depopulation and the abandonment of agriculture in rural areas are the general drivers of this decline (MacDonald et al. 2000; Strijker 2005). Another element connected to the decreasing trend in sheep production is the negative evolution of prices. The combined effect of the lowering of sale prices and the rise in some of the production costs explains, in part, the decline of the sector, which depends heavily on public subsidies from Common Agricultural Policy (De Arriba 2013).

In the last ten years, the EU's sheep and goat population has been considerably reduced. According to the most recent data, the sheep population in the EU is around 90 million heads. As of 2012, the United Kingdom is the country that has the most sheep, with 22.9 million, followed by Spain, with 16.8 million (Table I).

However, the importance of the sector is greater than the purely macroeconomic effect, especially considering the important contributions that traditional sheep farming also makes to the development of the rural environment, through its social and environmental impact. Regarding the social dimension, we should take into account that sheep farming may be (almost) the only activity that inhabitants in rural zones can develop (especially in isolated and less favoured zones) and thus represents an opportunity for income where no other is possible (OECD 2001). Moreover, it contributes to population stability in areas seriously threatened by depopulation and abandonment.

This activity is often concentrated in areas of scarce vegetation, irregular rainfall, hot dry summers and hard winters (Sierra 2002). Sheep farming is able to take advantage of these low-quality spaces and resources which cannot compete with other farmers and territories or may even be abandoned by economic activity. Indeed, this type of livestock farming develops flexible systems of farming, capable of making use of low quality grazing and pastures.

Bearing in mind all these factors, the extensive nature of sheep farming, and its ability to make sustainable use of the habitats that it occupies, makes an important contribution to rural development from an environmental point of view (De Ripoll et al. 2012).

Transition of exploitation systems

Ways of production in sheep farming

The productive systems used for sheep farming are diverse, and depend on various ecological, structural (land, labour and capital characteristics), economic and social factors (Sierra 2002). Extensive systems predominate, given that they are found in less favoured areas, even if some intensive systems already exist (Rancourt et al. 2006). In any case, those systems dedicated to meat production – for goats as well as sheep – are normally more extensive or semi-extensive than the milk production farms.

Moreover, the productive systems show a low level of mechanisation compared with those of other agrarian sectors. Population density, measured as the ratio between the animal population and land used, can be interpreted as an indicator of the degree of sector extensivity. The EU-27 average density is 2.81 heads/Ha (Eurostat 2014).

In Europe there is a wide range of types of sheep holdings. This is due to the diversity of breeds, the productive focus of each farm and even the intensity of land use (Rancourt et al. 2006). The number of individual farms dedicated to sheep and goats in Europe has been gradually falling. This is a general phenomenon that affects the whole territory and both types of farms, which can be seen in Table II.

The disappearance of farms affects smaller farms more than the large ones which, in many cases, have got bigger. In short, this tendency indicates that the sector is undergoing a process of radical restructuring and concentration (Eurostat 2014). One possible negative consequence of this

trend is a reduction in biodiversity and agricultural sustainability. Hence, the size of farms is relatively low and the average extension of EU-27 holdings is 18.17 Ha. In fact, the average size of flocks in EU-27 is 58.5 heads per holding (Eurostat 2014).

Table 2. Number of farms of sheep and goats, EU-27

Sheep		Goats	
2007	2003	2007	2003
1,191,847	1,600,353	668,197	934,803

Source: Eurostat (2014)

Low profitability: incomes and subsidies

Public subsidies from the Common Agricultural Policy have been one of the main instruments of support for the agricultural sector in the EU. Besides its role as income support for farmers, direct payments play an important role in the delivery of public goods due to the link between direct payments and the fulfilment of cross-compliance requirements (basic rules related to environment, health and animal welfare) (European Commission 2013). These public goods are mostly environmental and are related, for instance, to maintaining agricultural landscapes, farmland biodiversity, water availability, soil functionality, climate stability and air quality. Direct payments also contribute to different public goods such as rural vitality.

Galanopoulos et al. (2011) state that several small sheep and goat farms, especially those located in disadvantaged areas, rely on such grants as a significant part of their total earnings. In any case, the maintenance of this activity in these areas is an important objective of the European rural development policy (Bertaglia et al. 2007).

The income support function of direct payments is particularly important given the relatively low level of income in the agricultural sector which, on average, remains below 50% of the average salary in the total economy in the EU-27. Using data from the Farm Accountancy Data Network (FADN), Agrosynergie (2011) has calculated the impact of grants on incomes. Here we must state that the information given refers to farms dedicated to 'Other grazing livestock'. This group excludes 'Specialist dairying' ('Milk' and

‘Milk and cattle rearing’), but also includes ‘Specialist cattle-rearing and fattening’, ‘Cattle-dairying, rearing and fattening combined’ and ‘Sheep, goats and other grazing livestock’. Thus, the data is not representative of the situation found only on sheep and goat farms.

In any case, this information may offer us an approximate image of the importance of the direct payments to this type of farms. We have calculated the average share of direct payments on farm’s value added (table III). The average level is 27%, although this needs to be seen against the background of important variations in agricultural income across Member States, regions and sectors. In the case of farms specialised in grazing livestock the importance is even higher, almost 50%.

Table 3. FNVA/AWU, with and without direct payments: average 2004–2007 (1)

	With direct payments	Without direct payments	Direct payments according to FNVA/AWU
Field crops	23,351	12,991	44,4%
Horticulture	22,630	22,073	2,5%
Other permanent crops	19,298	17,474	9,5%
Milk	23,311	16,180	30,6%
Other grazing livestock	19,160	9,632	49,7%
Granivores	25,475	21,576	15,3%
Mixed farms	17,999	10,433	42,0%
Average	21,604	15,765	27,0%

(1) *Farm Net Value Added per Agricultural Work Unit. Value in PPS.*

Source: Agrosynergie (2011) and own calculations

The most recent data from the FADN offers information regarding the group of subsidies on current operations linked to production until 2009. Hence, to judge the importance of these payments, it is useful to compare them with unitary income, in this case with the Farm Net Value Added per AWU (that is, the remuneration of the fixed factors of production per

agricultural work unit). Table III provides this information. Taking into account the most recent data available for the EU countries, these subsidies represent nearly 100% of their unitary income.

Table 4. Farm Net Value Added/AWU: Specialist sheep and goats (EU27)

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Farm Net Value Added/AWU	15,506	18,158	18,582	16,947	17,289	17,351	10,942	12,322	17,724
Subsidies according to FNVA/AWU	84.00	86.26	81.84	92.21	93.08	94.74	109.17	108.22	97.81

Source: FADN (2013) and own calculations

State of art concerning *homo economicus* and sheep farmers' motivations

Rationality and motivations

The predominant form of economic analysis is nourished by the postulates of rational choice models which are assumed by neoclassical economy. In this conceptual universe, decisions about resource allocation between alternative uses and hence the possibilities of development and continuity of the different productive activities will depend on the result of a calculation, which seeks to determine which decisions enable the maximisation of benefits. From the perspective of rational analysis, traditional sheep farming is hence unprofitable and should therefore not exist.

According to this model, individuals are characterised as rational agents, who make decisions after a costs-benefits analysis with the intention of maximising their utility, or their profit, regardless of their cultural context. These are *homo economicus*, who have perfect information, order their preferences in a process of free and rational choice, and maximise their individual objective functions. These individuals are defined, consequently, by a rational behaviour model, free of cultural and historical

constraints. This interpretive scheme of human behaviour is not limited to economic analysis but has been extended to other areas of social behaviour (Becker 1976).

However, as pointed out long ago by Sen (1977), this model of rational action does not explain the large part of human behaviour. In reality, individuals have limited rationality, they only have imperfect information and their decisions are influenced by social norms, legal rules and they are taken within a context of uncertainty. As a result, individuals, rather than being optimisers, simply seek satisfactory decisions (Simon 1955).

Individuals do not have perfect information. On the contrary, they move in a universe full of uncertainty and, over time, are immersed in a continuous learning process. Indeed, individuals possess a practical or personal knowledge, present in all human activities and which is acquired precisely through the development of these activities (Murrell 1992). This kind of knowledge includes information about the ways in which individuals interact with their social medium. Hence, it is configured specifically by the historical developments of a particular cultural community.

The behaviour of the economic subject is adaptive rather than maximising and riddled with inertia and routines. According to Murrell, the perpetuation of routines works as a protective mechanism against the apparition of conflicts, which would emerge in the face of new organisational forms. Furthermore, routine behaviours and resistance to change (behavioural inertia, in their words) constitute, in the framework of limited rationality, a means of maintaining a balanced resource allocation in a system which reproduces itself in a dynamic of continuous imbalance.

Institutional economists prefer a characterisation closer to a *homo culturalis*. According to this approach, the behaviour of individuals is not guided exclusively by individual mental calculations of profits and expected monetary costs, but by other socio-cultural factors which determine behavioural patterns and which, occasionally, nullify the afore-mentioned calculations. Habits can be defined as a non-deliberate tendency to adopt the behaviour model previously acquired and which appear in repetitive situations. They are hence part of the individual's cognitive abilities, learned and imitated within institutions.

Habits and routines preserve knowledge, particularly tacit knowledge in relation to skills, while institutions act through time as their transmission belt (Hodgson 1998). Individuals are passive members who assimilate the

values, preferences and norms prevailing in such system. Rather than *homo economicus*, individuals appear as *homo habitus*; that is to say, a product of their history, their education, their culture and their specific social medium. They possess a limited rationality and their responses in the face of stimuli show different types of action and not necessarily the individual profit-maximising option.

Plural objectives

Not all the activities carried out in the rural environment are economic, but many of them are relevant for the economy. For instance, we cannot ignore the culture, the traditions, the cohesion of the community and so on, as they are part of the institutional framework, the ecosystem, in which economic activities are developed. Persson and Westholm (1994) maintain that, to better understand the evolution of rural spaces, it is convenient to introduce extraeconomic variables, such as values, behaviours and cultural aspects. In other words, one needs to expand the focus to understand better the dynamic of economic activities in the rural environment.

Not all the economic relationships are market relationships or pursue profit. There are different ways of integration in response to different economic problems of exchanges, such as redistribution and reciprocity (very important in rural areas). Bearing this in mind allows for a better diagnostic of the rural reality. Indeed, economic integration constitutes another aspect which needs a more large-scale perspective. Hence, Ellis (2000) highlights the critical importance of social capital (social networks, relationships of authority and trust, customs, and so on) in the development of economic activities of rural families.

Another largely ignored element is the goals pursued by the people who live in the rural world. It goes without saying that these people have monetary objectives, such as increasing their income, stabilising their revenue or accumulating capital. However, they may also have other non-monetary goals, such as an improvement in their well-being through immaterial goods, health or access to given services. The pursuit of a lifestyle, connected to the rural world, or the consolidation and extension of social networks, can also become highly valued goals in rural spaces.

Even guaranteeing their food self-sufficiency or carrying out a sustainable use of resources may serve as other desired goals. Howley et al. (2014), for example, study the importance of non-monetary benefits in explaining

farmers' off-farm labour market behaviour. Bearing these considerations in mind facilitates a better understanding of some characteristic phenomena in many rural areas, such as the wish to remain in the village in spite of its relative delay in terms of income or the dedication to low-profit productive activities (De Arriba 2011).

Methodology and Data

As we have presented in section 1, the quantitative macroeconomic evidence shows that the activity of traditional sheep farming is not profitable enough, while the trends seem to be moving toward a reduction in the number of farms, in their concentration and in their intensification.

Despite all the inconveniences associated with a traditional production system, which is not only more demanding in resources (land), but usually less productive, there are still people throughout Europe that choose to raise sheep in an extensive way (Caballero and Fernández-Santos, 2008; Cingolani et al. 2008; Bernués et al. 2011). The main analysis of this paper focuses on two complementary targets. On the one hand, we want to explore and identify why some shepherds opt to carry out this activity despite its low profitability and, on the other hand, we want to check if the motivation of farmers from different European countries is similar or poles apart.

In our analysis, we define traditional sheep farming as a method of production one in which sheep are free to graze outside during the day and can be enclosed at night or in winter. Additional dry fodder might then be provided to sheep but only in exceptional occasions. In general, this fodder would be organic, grown in the same farm or in the region.

This supplementary feed could be needed because of the climate conditions (usually in winter, and especially in places where temperatures go below zero and pastures are covered with snow) or at the end of the gestation phase and at the beginning of the lactation period. In the received literature, this definition can be closely connected with extensive sheep grazing. Besides, we include transhumant grazing in our classification of traditional farming.

We have conducted a total of 19 face-to-face semi-structured interviews between the end of 2011 and the middle of 2012. They were addressed to people managing a sheep farm in the traditional way. The interviews took place in eight different European countries. Specifically, our sample

is composed of one to three farms in each country, including Bulgaria, England, Estonia, France, Greece, Hungary, Poland and Spain.

The sample was designed to include Western European countries with a higher weighting towards the sheep sector – in economic terms and in terms of sheep population and density. It shows the above trend in Spain and Greece, as well as in Eastern European countries with lower sheep sector weight, i.e. Poland and Hungary. Hence, Figure I shows the dispersion and approximate location of farms included in the sample.

A set of questions was then used to guide the interviews, which were recorded in native languages and then translated to English. This methodology is adequate to fulfil our purpose of examining the behaviour and motivation of farmers, in a close analysis, such as that used in Lund et al. (2002) and in Risgaard et al. (2007).

Figure 1. Position of farms within Europe



The transcriptions of these conversations were used to build case studies, following on from previous work from Mills et al. (2009) and Yin (2013). The case studies analysed in this paper were hence compiled within the European Research project CANEPAL (Culture and Nature: The European Heritage of Sheep Farming and Pastoral Life). Although the sample is selective and not exhaustive in terms of its European coverage (see e.g. Smith et al 2009), it has nevertheless permitted qualitative research (Taylor and Bogdan, 1987; Marshall and Rossman 2014) and focused attention on this topic.

In some cases, the focus of farms is exclusively sheep-oriented. In other cases, they also cultivate some crops or raise other animals, like cows, goats or horses. However, sheep breeding is a key activity in all the farms included in the sample. Complementarities between extensive pastoralism and arable farming were stressed in Caballero (2002, 2009).

In Table V, we characterise some of the features of the farms included in the sample. All the farms have been classified as extensive yet other factors, such as those relative to the owners’ educational level, the farms’ size (in terms of land and sheep), or their production, are quite heterogeneous. These differences highlight some of the common patterns to be found in the farmers’ behaviour.

Table 5. Classification of general features o farms

Characteristic	Classification	Percentage
Type of property	Individual farm	94.7%
	Cooperative	5.3%
Level of farmers’ education¹	Apprenticeship	21.1%
	Technical college	10.5%
	Primary education	26.3%
	Secondary education	15.8%
	Higher education	26.3%
	Linked with agronomy or stockbreeding	31.6%
Farm size	Small (<100 ha)	42.1%
	Medium (100–300 ha)	31.6%
	Large (>300 ha)	
Flock size	Small (<300 sheep)	42.1%
	Medium (300–800 sheep)	26.3%
	Large (>800 sheep)	31.6%

Table 5. Classification of general features of farms

Characteristic	Classification	Percentage
Production²	Livestock	21.1%
	Meet	42.1%
	Dairy products	52.6%
	Wool	5.3%
Subsidised	Yes	89.5%
	Non	10.5%
	Profitable due to subsidies	68.4%

(1) Educational data refers to the owner of the farm and, in the case of the cooperative, of its chair.

(2) Some farms produce more than one type of product. Consequently, the total addition of their percentages amounts to over 100%.

Results

Using the case studies, we first analyse sheep breeding from the economic theory perspective; specifically, the work force and farm profitability. Concerning labour, it is common knowledge how demanding these occupations are in terms of time and effort. We observe that, in all cases, when the sheep breeder is married, their spouse is also involved in the farms' activities, whether as a full-time or a part-time worker, or at least as extra help. Besides, in more than half of the cases, this familiar inclusion in the activity was extended to owners' parents, siblings or children. In addition to this, in more than a third of the farms, all the workers were family members.

Family ties appear to be crucial for farm owners in many respects. For instance, following a familiar tradition seems to be the main reason to become a shepherd. In addition, the help of the family is necessary to cope with the tough work of the farm. And finally, their descendants are strategic to guarantee succession, a constant problem in farming (Brandth and Overrein 2013; Fischer and Burton 2014) and common to the different European countries we are addressing.

Some of the farmers also expressed their difficulties in finding workers. Extra non-family-member employees were hired occasionally, usually as

assistants or seasonal staff (for milking, shaving sheep, etc.). In addition, we sometimes detected that seasonal workers were immigrants coming from poorer neighbouring countries. From the standpoint of profitability, being a shepherd is not the best occupation. An interviewee declared: 'One does not count the hours spent, otherwise we would earn less than the minimum wage'.

Almost 90% of the farms receive public funding by local and/or European authorities, and up to three-quarters of these are profitable thanks to it. For instance, in many cases, part of the funding was obtained, not for sheep breeding directly, but for crops. Shepherds were pleased with the funding provided in the form of feedstuff for their flock because, as they stated, it guaranteed an adequate use of it. Moreover, some subsidies are intended to maintain indigenous breeds, avoid their extinction and provide additional social welfare.

It can be inferred from the answers that activity diversification is key for their economic viability, allowing farmers to depend less on specific financial support. Although we cannot affirm that subsidies are negligible, they are still modest compared to the extra work that the fulfilment of administrative duties in their already exhausted journeys. This characteristic was emphasised by most of the interviewees. Anecdotally, one of them actually gave up trying to ask for assistance because he was unable to manage the application process while the consulting office demanded he pay half of the subsidy as a fee for the service. That means that the funding is helpful, but at the same time, it introduces uncertainty.

In conclusion, from the economic point of view, traditional sheep farming has a very low attractiveness. Therefore, the question is: why did these people decide to become shepherds, then?

Surprisingly, most of them stated to be from 90% to 100% satisfied with their profession and that they have never considered changing their occupation. The most common answer to the question of what they liked the most in their profession was 'Everything'. To illustrate these feelings better, we will quote some of the most interesting replies:

'In my work, I like everything. After 30 years, it still moves me when I see the birth of a sheep' (Spanish sheep breeder).

'Farming organically and preserving two traditional breeds gives us an enormous sense of self satisfaction that cannot be matched with high levels

of income. Farming and managing the sheep, regardless of money, is what brings happiness to the family.' (English sheep breeder).

'This occupation is a true passion for me, I go through a lot of hard work, but I am crazy about the sheep.' (Bulgarian sheep breeder).

'I do not do a job, but I live out my passion, whose strength can be measured by the sacrifices made every day, week in week out.' (French sheep breeder).

All of the testimonies transmitted a special connection with the animals and with nature, which resulted in personal success and happiness. Most of them explicitly indicated that the mental and emotional state they achieve doing this activity is not comparable to material needs. Furthermore, despite finding a differing macroeconomic scale for the sheep farming sector between Eastern and Western European countries, as well as a high level of heterogeneity among the cases analysed, no significant differences can be assessed concerning the motivations to pursue traditional sheep breeding.

Discussion and Conclusions

Economic theory assumes that monetary instrumental rationality and profit maximisation are the foremost reasons for carrying out professional activity. The great part of the literature assumes that less self-interested feelings can be found as an exception and linked to, for example, volunteer activities or donations. When it comes to its unprofitability, it would be difficult to justify economically the persistence of traditional farms. Moreover, we cannot be ignored that public subventions support the activity.

However, grants seem insufficient to compensate all the farms' extra costs, such as the owners' harsh work and personal sacrifices, relative to the positive external effects that this activity brings to the environment. All of these sacrifices may be compatible with the theory if we assume that sheep farming is the only option to work and earn enough money to sustain farmers' family.

However, although the evidence points to shepherds, in reality these proposition do not seem to be the case. In fact, in some cases, this activity is not the only actual income for the shepherd's family, being that consorts contribute up to half of it. Apparently, compared to Eastern European countries, the higher weight of sheep farming sector in Western European

countries may be motivated by the greater quantity of subventions they have for sheep farming. However, this analysis overtake the aims of our paper and it may be considered for further future research.

Summing up, we have shown in our research how most holders decided to start breeding sheep because they had inherited some land or else they chose to follow a family tradition. Nevertheless, the main reason to continue with this occupation was their love for the land and their sheep, along with the freedom they feel in this profession. For them, ensuring sustainable development and preserving good traditions of sheep-farming go far beyond earning huge profits. These observations mean that, in traditional sheep breeding, vocational motivations appear to be much stronger than the *homo economicus* ones.

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