

Traditional part-time grazing: a more sustainable sheep milk and cheese production in the Basque country

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Abstract

The concept of sustainability when referring to food production rests on three main aspects: (1) respect for the environment; (2) economic and social benefits for all involved in production; and (3) production of sufficient quantity of healthy food at an affordable price. We focus herein on those aspects of the traditional sheep milk and cheese production (under the Denomination of Origin Idiazabal Cheese) in the Basque Country of primary relevance for the sustainability of this production. It is based on the local *latxa* or *carranzana* breeds, adapted to mountainous terrain. Shepherders take advantage of local resources to reduce management costs by combining indoor dry forage and concentrates with outdoor grazing throughout lactation, according to local pasture availability. This system facilitates recycling of manure, fertilising pastures and forests at the same time. Cheese is produced within an Industrial Food System (51.7% of the total cheese produced in 2008), or within an Artisanal Food System (48.3%; by the shepherders using the milk from their own flocks or by a sheep farmer association). The Artisanal System is advantageous for the following reasons: (1) there are higher economic returns because the cheese price directly sold to consumers is more competitive than industrial cheese sold in supermarkets; (2) it increases the value of women's work (over 80% of the cheese makers are women) in the community and their self-esteem; (3) it creates rural jobs and contributes to rural development; (4) we have demonstrated (experimental and commercial flocks) that part-time grazing allows the sheep farmer to obtain high yields of milk, and cheese, of high nutritional and functional quality. Currently, a less sustainable, intensive sheep milk production with foreign imported breeds kept constantly indoors is gaining favour among milk producers because of its perceived higher economic profitability

Keywords: outdoor feeding, social sustainability, healthier food product, food systems

Introduction

The best known definition of 'sustainability' is perhaps that of the Brundtland Report (1987) which extended the concept of sustainability to all activities that lead to the development of a society by stating that it *consists in meeting the needs of the present without compromising the ability of future generations to meet their own needs*. References regarding the concept of sustainable development of agricultural food producing systems are diverse. Paniagua and Moyano (1998) propose the definition accepted in the present work. An agricultural system is sustainable when in the long run it guarantees the following:

1. respect for, or equilibrium with, the environment, maintaining its quality (this is the environmental dimension);
2. economic and social benefits for all those involved in production (socio-economic dimension); and
3. access to sufficient quantity of healthy food at an affordable price, respecting cultural preferences for certain foods (consumer dimension).

In this paper we study the sustainability of sheep cheese producing and marketing systems in the Basque Country region of Northern Spain, focusing on the second and third dimensions of our concept of sustainability because the environmental and animal welfare aspects of outdoor grazing systems have been more thoroughly investigated.

Sheep cheese production systems within the Idiazabal Protected Denomination of Origin (PDO)

Sheep herding is the traditional sheep production system, linked to the local *Latxa* breed and to outdoor part-time grazing during the lactation period in late winter and spring. The shepherd combines the available fresh grass with indoor feeding (dried forage, concentrate) to provide the animals with the necessary nutrients. Around 90% of the sheep milk produced is transformed into Idiazabal PDO Cheese. In 2008, the DO comprised 435 sheep milk producing farms (shepherd is farm owner), producing a total of 7.7 million litres, and 1.3 million kg cheese. Cheese producers (111 in 2008) can be categorized into 3 groups:

- large dairies (a total of 3) produce more than 100 Tm per year (44.5% of the total Idiazabal PDO cheese in 2008). These dairies buy all their milk.
- small dairies (a total of 13) produce less than 100 Tm per year (17.2% of the 2008 cheese production). Some dairies buy part of the milk they use, and others are associations of sheep farmers which transform the milk of their members.
- individual farmhouses (a total of 95) transform the milk of their individual flocks (38.3% of the 2008 total Idiazabal cheese).

A *food system* comprises raw materials producers, food industries which transform them, distributing and marketing outfits and consumers who buy a given food product (Renting *et al.*, 2003). In the case of the Idiazabal PDO Cheese, our research clearly differentiated two food systems on the basis of the role of the sheep farmer: industrial and artisanal. If the sheep farmer produces only milk, (s)he is ascribed to the industrial system, whereas if the shepherd makes cheese (s)he is ascribed to the artisanal system. Thus, the industrial system comprises large and small dairies (about 52% of the PDO cheese produced). By contrast, the artisanal system is comprised by the 95 individual farmhouses, and those associations of shepherds which transform the milk of their members. In addition, outside any PDO production, there is a third food system for sheep cheese. It comprises shepherds who produce milk from breeds of foreign sheep (Assaf or Lacaune). They sell their milk to cheese factories which make 'Idiazabal type' cheese, with no PDO seal, and market it through supermarket chains.

Our working hypothesis is that the artisanal food system for PDO cheese production is the most sustainable of the three food systems.

Methodology

The following social analytical techniques were used: (1) analysis of secondary sources of information; (2) in-depth interviews to four expert agents in sheep milk production; (3) semi-structured interviews with 8 shepherds. For the assessment of milk and cheese quality, 11 commercial flocks, members of the DO, were selected. Milk from each flock was sampled on 2 consecutive weeks, before and after turning the sheep out to pasture. Cheeses made with these milks were sampled after ripening for 120 days.

Results

Considering the second, socio-economic dimension of our definition of a sustainable food system, the most advantageous food system is that in which shepherds make cheese with their own milk.

Their gross profit for each Annual Working Unit was 27,617 Euros in 2007 as compared to 19,665 Euros for those who sell their milk to cheese factories. In addition, the former food system requires the contribution of another family member, which in almost all cases is a woman. On average, there are 1.94 AWU in farms that make their own cheese as compared to 1.2 AWU in farms that sell their milk. Establishing direct relationships with customers significantly increases farmers' self-esteem because they see themselves as capable of preparing a highly appreciated food instead of merely providing a raw material for cheese factories. This self appreciation of the value of their own work is probably as important for the long-term continuity of sheep farming as their higher level of income. In fact, in the last few years an increase in the number of sheep farmers who make their own cheese has been observed.

Regarding the third dimension, food quality, of a sustainable food producing system, that in which sheep farmers make their own cheese is also the most appropriate. Factories market their cheese through supermarket chains at around 20 Euros/kg, after paying producers an average 8-10 Euros/kg. By contrast, most sheepherders sell their cheese directly to consumers, at an average 14-16 Euros/kg. The cheese made with milk obtained during the outdoor period had higher concentrations of healthier fatty acids (Pariza, 2004), a 35% lower atherogenicity index, 14% lower cholesterol, and 10% higher antioxidant capacity than milk obtained during the indoor period (Abilleira *et al.*, 2009).

Conclusions

Results presented in this work confirm our initial hypothesis. An important aspect to promote the continuity of this cheese producing system is that consumers be aware of its benefits to help them make buying decisions which will potentiate and strength it. In addition, institutions should also support this type of food producing systems which benefits such widely different aspects.

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