

### 3.8 Spain (David Yanez Ruiz, Pablo Rufino)



The situation in Spain with regards to low-input and organic dairy production can be outlined as follows:

- There are 1,777 organic farms in Spain (including all types of production)
- Cattle represent 45%, with only 4% of those dedicated to dairy
- Goats represent 8%, with 37% of those dedicated to dairy
- Sheep account for 28% with 3% of those in dairy.

Around 70% of the farms make use of grazing land using extensive or semi-extensive systems. The tendency shows a slight annual increase in the numbers of farms (1-2% per year).

The rapid sustainability assessment exercise was focussed on goat farms as the SME partner is involved in the dairy goat industry. Most of the goat industry in Spain is oriented towards milk production, particularly in three regions: Andalusia (where the sustainability assessment was conducted), The Canary Islands, and Castilla La Mancha, where 71.1% of the milk goats in the country are concentrated.

There is a wide diversity of ecosystems in Spain (Atlantic in western-north, Mediterranean in south-east and also continental in the centre) as well as different breeds of goats. According to the Spanish Ministry of the Environment and Rural and Marine Affairs there were 22 indigenous breeds in 2009. Due to this genotype diversity, goats cohabit in traditional systems of meat and meat–milk production with intensive milk production systems. Traditionally goat production systems were focused on producing goat kids for meat with a live weight of 20–40kg after spring grazing, and cheese manufacturing at these farms during this season. However, in recent decades these systems have been revolutionized as a consequence of a series of social and legislative changes. In the 1980s the demand for kid meat shifted in favour of 1- month-old suckling goat kids (8kg live weight). Another reason for this change was the implementation of stricter health standards which

hampered small-scale cheese manufacturing and marketing, therefore the majority of farmers opted for selling whole raw milk to the commercial cheese industry, instead of producing cheese themselves. A third aspect to consider is that, after the mid-1990s, prices of feedstuffs fell while the price of milk rose, which gave way to the beginning of intensive, specialized milk production systems, which had not previously been profitable.

As a consequence of this evolution, the traditional meat production systems are decreasing, and are being replaced by hunting activities or other uses established by the CAP (rural tourism or natural environmental conservation). Likewise, dairy goat farms that depend mostly on grazing are also declining.

There is wide diversity among dairy goat farms, which are divided into two types of systems; those in which goats are permanently confined (C systems) and those where goats are kept on pasture with different grazing times (G systems). The G systems use indigenous goat breeds such as Murciano-Granadina, Malageña, Florida, Payoya, Palmera, Majorera and Tinerfeña. These goat production systems are predominant in Andalusia and the Canary Islands. Further information on this can be found in Appendix 3.

The C systems are steadily increasing in Spain. In Andalusia, the principal goat-farming region in Spain, 42% of goats and 47% of farms operate under this production system (Castell *et al.*, 2010). The most productive Spanish dairy goats such as the Murciano-Granadina, Malageña, Florida and Majorera are used on these farms and can achieve their maximum productivity in these systems. Milk production fluctuates between 400l and 800l per goat per year, depending on the genetic merit of goats, management and facilities.

In some Spanish regions with little tradition of goat production, a few selected foreign breeds (Saanen and Alpine) have been introduced, but due to the lower fat and protein content in the milk of these breeds the market price is lower. There are some other problems that explain the failure of these initiatives, including the adaptation of these breeds to the environment of the Spanish farms, besides the farmers' low level of experience. Because of this, and in contrast to sheep milk production, goat operations with indigenous Spanish dairy goat breeds are competing favourably with the introduced breeds and even expanding outside their own regions.

### **3.8.1 Characteristics of the case study farms**

The 10 farms were chosen to cover the whole range of systems existing in southern Spain: production in mountains and valleys; more and less selected breeds; purely extensive and semi-extensive; cheese making and milk selling; organic and non-organic. Having said that, the region covered (Andalusia), although it is the largest region for goat dairy production in Spain, does not represent the whole country. Some production occurs in northern Spain, although it does not contribute significantly. We have included four different dairy breeds, so different genotypes in terms of breeding intensity are covered in this study. Selected breeds are: Murciano-Granadina, Malagueña, Florida and Payoya. These cover the main breeds used in Spain, with the exception of the dairy systems in the Canary Islands. Our list includes three farms that make cheese and two

organic ones. We have found out that some organic farms are seriously considering returning to conventional methods as organic management does not seem to be an advantage for extensive dairy goat farmers. 2 farms from the original list withdrew due to unwillingness to provide financial details.

Examples of best and innovative practice identified on the farms undergoing the rapid assessment include:

- Excellent grazing management, including grass, shrubs and fruits. Special attention given to carefully designed supplementation to reduce costs and maintain milk yield
- Excellent records of animal health and welfare and high levels of concern about these issues.
- Strong marketing strategy for selling. This farm in particular is highly innovative compared to others as it is selling directly to some restaurants using a 'tailor made' product
- Good management of on farm grains and forage cultivation
- One farm is also very involved in educational programs, with constant collaboration with local schools to organize children's visits over the year.

The main strength overall in the SME is the use of high genetic value animals as the farms are part of the breeding program in each Association which is strongly supported by the regional government. The average individual milk yield is clearly improving over the last 5-10 years as a result of such activity.

Another identified strength was the overall improvement in awareness of the importance of health and milk quality in the dairy goat sector in recent years. Although ten farms were visited, it proved very difficult to obtain milk production figures from them all, so only seven farms were included in the final analysis, due to missing data. Land area and stocking rate ranged extremely widely reflecting the range of systems from "landless" to extensive and there was minimal permanent pasture. The number of milking goats and yields also varied widely, the mean being lower than in previous studies. Purchased concentrate use also varied greatly. The mean of 0.38 tonnes per goat per year was similar to that in previous studies, although it is not certain whether the calculations were directly comparable. Mean labour inputs were higher in the selected farms than were reported in previous studies (Castel *et al.*, 2010).

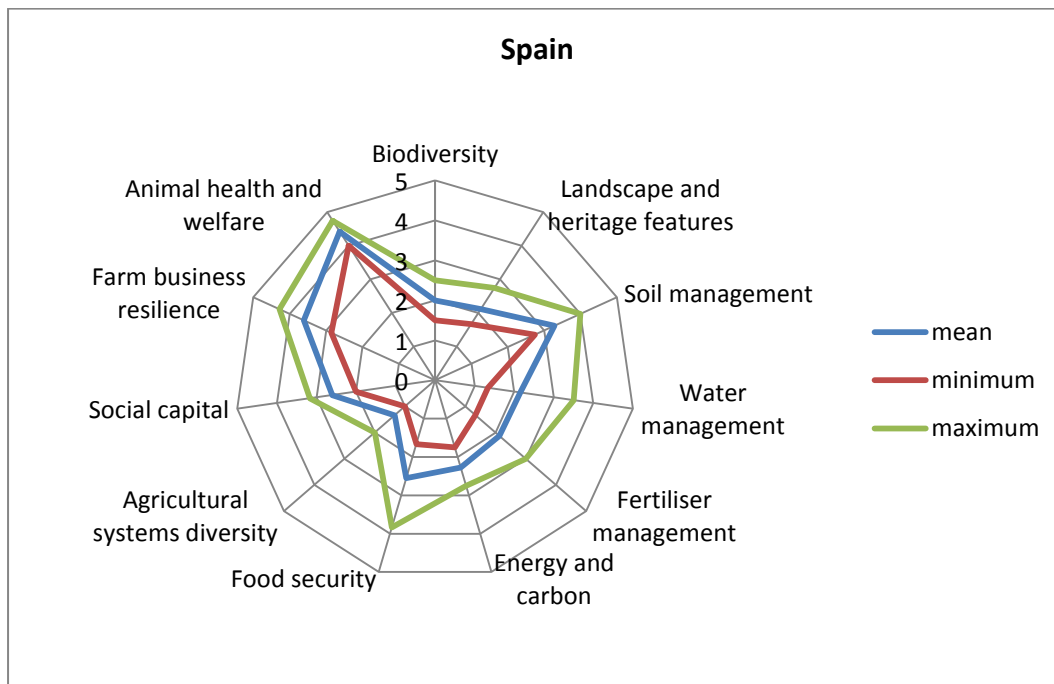
**Table 10 Characteristics of Spanish goat farms compared with the 7 selected farms**

		Population mean <sup>2</sup>		Mean of selected farms	Range of selected farms
		Confined (C)	Grazing (G)		
Farm size	ha	Not available		70	0 - 314
Herd size	No. of adult goats	179 or 382 depending on geographical area	353	313	140 - 640
Stocking rate	Livestock units/ha				
	Grazing livestock units/forage ha	Not applicable	0.22	1.05	0.14 – 2.57
Milk sales	l/goat/year	487	473	384	117 - 687
Level of concentrate fed to milking animals	kg/goat/year	343	389		
Total purchased concentrate per goat <sup>1</sup>	kg/ goat/year			380	7- 560
Milking goats per Annual Labour Unit	Milking goats per Annual Labour Unit	Not available	Not available	258	117 - 674
Labour input per unit area	Annual labour units/100 ha	135	41	0.78	0.05 – 2.97

<sup>1</sup>Data from the tool - may include some concentrate fed to other livestock on the farm, therefore not necessarily directly comparable with the line above

<sup>2</sup> From studies reported by Castel et al., 2010

### 3.8.2 Results of the sustainability assessment



**Figure 17** Spur diagram for Spain

The scores obtained from the rapid sustainability assessment in Spain show a high variation, especially for “Food Security”, “Fertilizer management” and “Water Management” (Figure 17). The highest scores were obtained for “Animal Health and Welfare”, “Farm business resilience” and “Soil Management”. The lowest were observed for “Agricultural Systems Diversity” and “Biodiversity”.

It is important to point out that the farms selected are based in different areas of south Spain, which include mountains and valleys, arid, semi-arid and temperate weather as well as different marketing strategies. Therefore, it was expected that there would be a range of scores for those spurs strongly linked to the ecosystem where the farm is located.

The high scores reported on “Animal Health and Welfare” could be a result of the combination of different factors: the relatively low number of animals of the farms, the family type business and therefore strong attachment to the animals as well as the low stocking rate.

The low scores obtained for “Biodiversity” might be a combination of a lack of legal/financial incentive to work on this area and low awareness of its social and environmental importance. On the other hand, when the individual scores are analysed we could see that there were high scores for those practices that are actually highly beneficial for keeping biodiversity and conservation which are part of the local tradition but not the result of public programs or ‘formal education’.

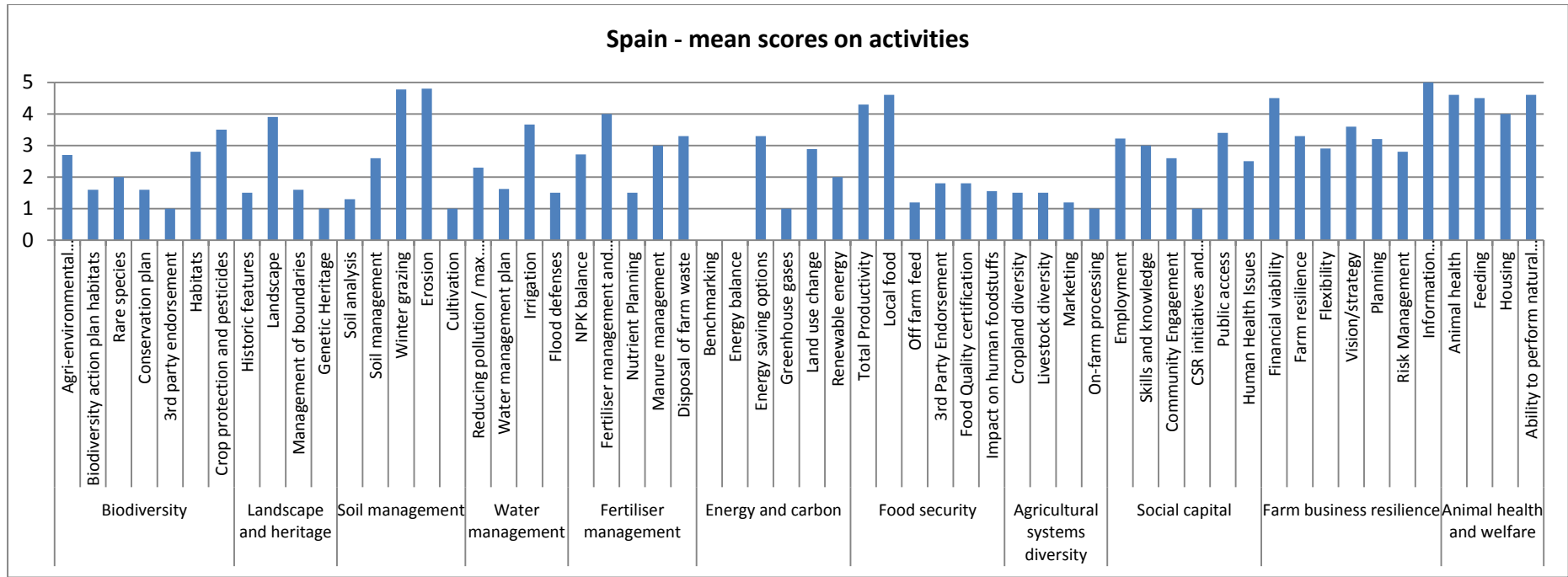
“Water Management” showed a high degree of variation in scores across farms. This was possibly associated with the rather different ecosystems where the 10 farms are placed, basically more

technical in valleys than in mountain areas, where farmers rely exclusively on waterfalls and streams.

“Fertiliser Management” also showed a wide range. There were some very high N balance figures (mean 221 kg N/ha) influenced by the relatively small land base of some farms. Some farms exported manure because of their small land area. N fixation rate was low (mean 23.2 kg N/ha) since legumes and clover were not commonly grown. Interestingly, there were also some farms which imported manure.

Overall, the level of management and planning in feeding and nutrition was very poor and this was discussed at both farmers’ workshops. Farmers have become more aware of this weakness as feeds have risen in price over the last few years. As a general observation, the grazing management with regard to maximizing the potential of shrub land, especially in mountain areas was rather good. However, one particular area which shows great potential for improvement is the supplementation of animals after or during grazing.

In cheese-making farms, marketing plans are not efficient at all and there is room for much action to be taken. The marketing strategy of one cheese-making farm toward targeting high-end restaurants to sell goat cheese under different ways of maturation (olive oil, herbs, etc..), showed that this ‘a la carte’ strategy could be very successful.



**Figure 18** Mean scores for activities for Spain.