

Accounting for pastoralists in Spain



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SPAIN IS ONE of the most biodiverse countries in Europe as a result of its geographical location, its mix of mountains and plains, and its range of climates from humid oceanic to semi-arid and Mediterranean. Many plant species are endemic. This has resulted in a huge diversity of habitats, livestock-management methods and pastoral communities. A huge area, 88% of its territory, can be used as pastures at some time of the year. But summer drought and heat in the Mediterranean area, and winter cold in the centre and north, make it impossible to produce a constant supply of forage in most areas, leading to seasonal scarcity.

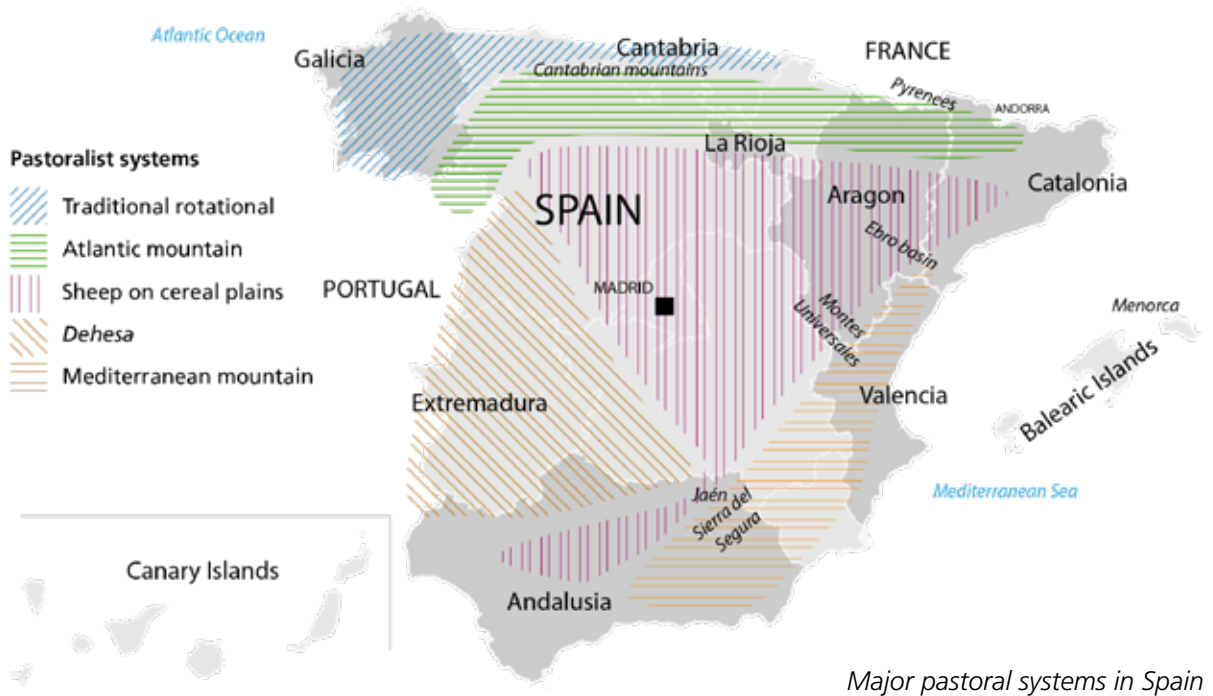
Two main strategies have developed to feed animals during these times: mobility and agrosilvopastoralism. These have several variants, and are often mixed.

Transhumance, or mobile pastoralism, involves seasonal migrations from one point to another. There are three main forms:

- Between mountain pastures in the north in summer and the *dehesa* areas in the southwest in winter. This pattern is associated with the Merino sheep breed.
- Between the Mediterranean mountains (especially the Montes Universales and Sierra del Segura) and the eastern coast.
- Between the Pyrenees on the French border and the Ebro basin to their south.

Key messages

- Spain has a very diverse range of ecosystems that have been created and transformed over centuries by pastoralism. Some 88% of the country's land area can be used as pastures at some time of the year.
- Two main pastoral strategies have evolved: mobility, and agrosilvopastoralism.
- Transhumance involves moving animals between winter pastures (usually in the plains) to summer pastures (often in the mountains).
- Agrosilvopastoralism involves grazing animals on pasture and crop residues, and in forests and tree plantations. The *dehesa* oak parklands are an example.
- No data exist on the number of pastoralists in Spain, the lands they use or the numbers of animals they keep.
- Pastoralism is in general decline, under pressure from changing economics and unfavourable policies. But awareness of its value for the environment, landscape management and tourism is rising.



Major pastoral systems in Spain

The animals are nowadays transported mainly by lorry, though in recent years, migration on the hoof has had some revival. Movement on the hoof under 100 km, known as *trasterminancia*, is found in mountainous areas all over the country.

Atlantic mountain pastoralism The Cantabrian mountains cross the north of Spain from west to east. Herders take their animals to mountain pastures in the summer; in the winter they descend to the lowlands to either the north or the south. In the north, the Atlantic climate and productive pastures mean providing a shelter during the winter and supplementary forage cut during the spring. In the drier south, the animals graze on grass, bushes, farm residues and tree products. The movements are mainly short or up to 100 km.

Traditional rotational pastoralism in the northwest Galicia in the northwest has a mild climate, making farming possible throughout most of the year. Small-scale family farms combine cropping, livestock breeding and forestry. They have private smallholdings, and use communal land for grazing. This production system is in serious decline as economic conditions force farmers to increase their production in order to survive.

Sheep pastoralism on cereal plains Wheat and barley are the most important crops in the central plateau. After the harvest in summer, livestock can forage on the stubble until the new crop is sown at the end of winter. Traditionally, cereal fields were left fallow for a year, making it possible to feed large numbers of sheep of breeds such as Churra, Manchega or Rasa Aragonesa. The sheep in turn fertilized the soil with their dung. Large

numbers were kept in the plains the whole year round, taken to different areas at different times of year: riverbanks, moors, slopes and communal forests. Other pastoral systems similarly use cereal stubble as a source of feed during winter.

Oak agrosilvopastoral systems: *dehesa* The *dehesa* in the centre-west is an open forest grassland with under 100 trees per hectare. These landscapes have been shaped by pastoralists over centuries: the animals eat grass and crops during productive times, and fruits, branches and leaves during scarce periods. *Dehesas* with holm oak (*Quercus ilex*) provide nutritious acorns, but other types of oak, as well as ash, beech and pine, also exist. The *dehesa* is mainly used to raise pigs and native breeds of cattle and sheep. Spain has around 4 million hectares of *dehesa*; Portugal (where it is called *montados*) has another 1 million hectares.

Mediterranean mountain pastoralism The southeast has a semiarid climate with little grass growth most of the year. Traditionally, farming has been limited except with irrigation in some riparian areas. Pastoralism is confined to mountain areas with shrub vegetation, with local breeds such as Segureña sheep and Negra Serrana goats. Grazing is supplemented by fruits such as almonds or olives. However, low plant productivity in this region has resulted in a shift from the traditional extensive management to a mainly intensive one. The Murciano-Granadina goat had been adapted to transhumance, but is now kept largely under industrial conditions. The reduction of extensive and mobile pastoralism has led to an increase in the size and frequency of forest fires in the area.

Canary Island transhumance In the Canary Islands, some 12 transhumant/nomadic families own very little pastureland but move from place to place all year long, living in different houses, some built in caves. Traditionally, the men take care of the sheep, while the women prepare and sell cheese, which is now recognized with a Protected Designation of Origin. Its taste changes during the year, depending on the type of pasture available.

Socioeconomic and ecological contributions

Economic Estimates of the value of extensive livestock production in Spain range from €0.47 and 1.32 billion, while a more detailed analysis by Casas-Nogales and Manzano found that pastoralism accounted for 19.1% of Spanish livestock economic value, or €2,607 million. Of this, €800 million is from cattle (meat, leather), €1,410 million from sheep (meat, milk, cheese, wool, leather), €280 million from pigs (meat) and €117 million from goats (meat, milk, cheese, leather). In 2007, pastoralism employed 0.41% of the active population, or 90,000 people.

Spain produces 400,000 tonnes of cheese a year, with pastoralists as major producers. Cheeses from local cattle breeds include *queso de Mahón* in Menorca and *Cebreiro* and *Picon Tresviso-Bejes* in the north of Spain. *Tortas de la Serena* is made from the milk of Merino sheep, and *Ibores* from the milk of Serrana, Verata and Retinta goats. Some 26 types of cheese have been granted a protected designation of origin designation. The *dehesa* is internationally known for *jamón ibérico* and high-end *pata negra* ham produced from Iberian black pigs.

Conservation and biodiversity Grazing has played a major role in creating the strikingly high level of diversity in Spanish grasslands and many of Spain's traditional cultural landscapes. Transhumant herds disperse seeds in their coats and dung, and increase the biodiversity of plants and insects.

Definition and historical context

Specialists with the Spanish Platform for Extensive Livestock Systems and Pastoralism define pastoralism in Spain as the ensemble of livestock production systems that make efficient use of the territory's resources with the appropriate species and breeds, making production compatible with



Major drove roads (cañadas reales), with Natura 2000 sites in green

The drove roads link protected areas under the European Union's Natura 2000 scheme, while *dehesas* are classified as high nature value habitats by the Union. Grazing limits the need for pesticides and synthetic fertilizers on cropped land.

But the decline of pastoralism and the abandonment of less-favoured land since the mid-20th century have led to the spread of undesirable species, lower biodiversity, the growth of bushes and trees, and the loss of cultural landscapes.

Wildfire prevention Grazing maintains a short grass sward and contains the growth of shrubs. The loss of grazing allows such vegetation to build a continuum, increasing the likelihood and extent of wildfires.

Native breeds Spain has 146 native livestock breeds: 46 of cattle, 51 of sheep, 22 of goats, 21 of horses, and six of donkeys. Many are kept exclusively or almost exclusively by pastoralists, and 80% of the local breeds are at risk of extinction. The decline of pastoralism threatens their survival.

sustainability and generating environmental and social services.

This system has a very long history in Spain. The first documents regulating transhumance date from the 4th century CE, first under the Roman

emperor Theodosius, then in the 5th century under the Visigoth kings. Most of the rules established by a 1273 law are still followed today, and were reaffirmed by law in 1995.

Spain has 125,000 km of protected drove roads, called *cañadas reales*, *veredas* and *cordeles*, depending on their width, occupying 450,000 ha. The *cañadas reales* are 75 m wide and range from 100 km to almost 1,300 km in length. Livestock are still herded up to 700 km along them twice a year. Some routes link pasture areas in Spain with those in Portugal, France and Andorra.

Transhumance has declined since its peak in the late 18th century, when 3.75 million sheep were recorded. Nowadays fewer than 300,000 animals are engaged in this form of mobility. Other forms of pastoralism are also in decline, with unproductive and remote land being abandoned and extensive livestock management being replaced by intensive production systems.

Data sources

Despite efforts to support pastoral activity, there is a prominent lack of a formal framework for extensive systems, unlike in other countries where pastoralism is culturally important. Pastoralism in Spain is not even recognized as an agrarian industry, and a subtle gradient exists to other forms of livestock production. Statistics on general livestock production in Spain are detailed, but no data exist specifically on pastoralists, their number, the lands they use, or the stocking rates they apply.

Sources of data on pastoralism in Spain

Institution	Parameters	Years covered	Source (see references)
MAPA ¹	Evolution of pastoralism	2000–20	MAPA statistics publications
	Diverse and complete agronomic production and economic parameters	1904–2021	
	Characterization of main production systems	2015–21 (one species per year)	MAPA n.d.
	Data on management of representative livestock farms	2017	MAPA 2017
Eurostat	Gross value of agronomic production, comparison with other European countries	Since 1984	Eurostat database ec.europa.eu/eurostat/
INE ²	Farm area, species, livestock units and workers	1999, 2009, 2020	Agrarian census ine.es/en/
WWF, TyN, SEP, PGEP ³	Characteristics of pastoral landscapes and carrying capacities	2020	Urivelarrea and Linares
IUCN	Estimates of socioeconomic data on pastoralism	2007	Casas-Nogales and Manzano

1 Ministry of Agriculture, Fisheries and Food

2 National Institute of Statistics

3 WWF, Asociación Trashumancia y Naturaleza, Sociedad Española de Pastos, Plataforma por la Ganadería Extensiva y el Pastoralismo



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How to improve the data situation?

Pastoral management systems such as transhumance and *dehesa* are well studied in terms of ecology and ethnography, but the analysing the general status of pastoralism and the characterization of Spanish farms are still tasks in progress. Differences in the gradient from pastoralism to confined management have to be studied.

Vision for the future

In the last few decades, Spanish agriculture and pastoralism have experienced major changes. The European Union's Common Agricultural Policy has driven many of these. Its focus on productivity has accelerated the intensification of livestock production. Livestock have become more dependent on external fodder rather than locally available natural forage. The overall figures for sheep and goats conceal the trend towards intensification, especially of dairy goats. The numbers of pigs (kept intensively) have risen dramatically since 1950, while cattle numbers have also gone up. The number of farm workers has more than halved since 1987. At the same time, changing eating habits in Spain have increased demand for meat and dairy products.

Pastoralism in Spain faces an uncertain future. Despite their romantic image, pastoralists do not enjoy a high social status, and they lack a major voice in decision making. Disputes occur with conservationists on topics such as the protection of wolves that prey on their flocks, and with authorities responsible for environmental protection (notwithstanding the vital role pastoralism plays in maintaining historical landscapes and preventing wildfires). The number of herders is declining as older people retire and are not being replaced. Grasslands rich in biodiversity and local breeds are both in decline as land is abandoned and extensive livestock-raising gives way to intensification.

Legal restrictions on the multiple use of land are a major obstacle. Traditional pastoralism uses a great variety of agroforestry resources (e.g., using olives and almonds as fodder), but this is not permitted under current rules. Despite efforts to support pastoral activities, a legal supportive framework for extensive systems is lacking. The European Green Deal and its "Farm to Fork" strategy aim to foster sustainable food systems, but they still support livestock intensification rather than extensive systems. Subsidies are tied to landholdings



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and favour large farmers and intensive production methods such as irrigation, not livestock holders who own little or no land and use little water. Incentives promote the ploughing of grasslands and the removal of trees and hedges to keep land in the "arable" category, or the conversion of pasture into forest. Sheep and goat raisers receive relatively little support. Many extensive livestock raisers have cut their flock sizes as a result. Plus, speculators are reputed to profit from European Union subsidies by acquiring titles to pasture but grazing them with fake herds. They are able to do this because of weak legislation and a lack of controls.

But not all is gloom. Many countries prohibit pastoralism in protected areas; in Spain it is permitted in almost all such areas. In 1995, a law protecting droving came into force. Various associations of pastoralists and support organizations publicize the valuable role that pastoralism plays in the environment, the economy and society, and they lobby governments and the European Union for change. Since 1994, shepherds have herded flocks of sheep and goats through central Madrid to draw attention to their historical rights. This event, the *Fiesta de la Trashumancia*, is a major tourist attraction. Droving roads, festivities and museums on pastoralism are widespread across the country. The population (and especially the older generation) generally recognizes the importance of pastoralism. Consumers perceive it as a generator of rural well-being and a supplier of high-quality products. On the producer side, alternatives similar to traditional management, such as regenerative rangeland management, seem to be expanding, and even appear in policy proposals. Some political forces encourage transhumance, and regional eco-

conomic supports exist in Navarra and Extremadura and the province of Jaén in Andalusia. The municipality of Santiago-Pontones in Jaén has launched a brand, *Trashumante*, identifying products from transhumance.

Various initiatives, for example in Andalusia, Catalonia, La Rioja and Valencia, use grazing to combat threats to habitat and biodiversity, and to control

unwanted vegetation. The Network of Andalusian Grassland-Firebreak Areas has more than 200 shepherds and manages about 6,000 ha of grazed firebreaks. The Red Eléctrica Española (the national grid operator) hires flocks of sheep and goats to control weeds under high-tension electricity lines. Several municipalities have created city-owned flocks or hire shepherds to maintain parks and public lands.

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Briefs in this series

- Argentina
- Germany
- India
- Iran
- Kenya
- Mozambique
- Spain
- Uganda
- Overall

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