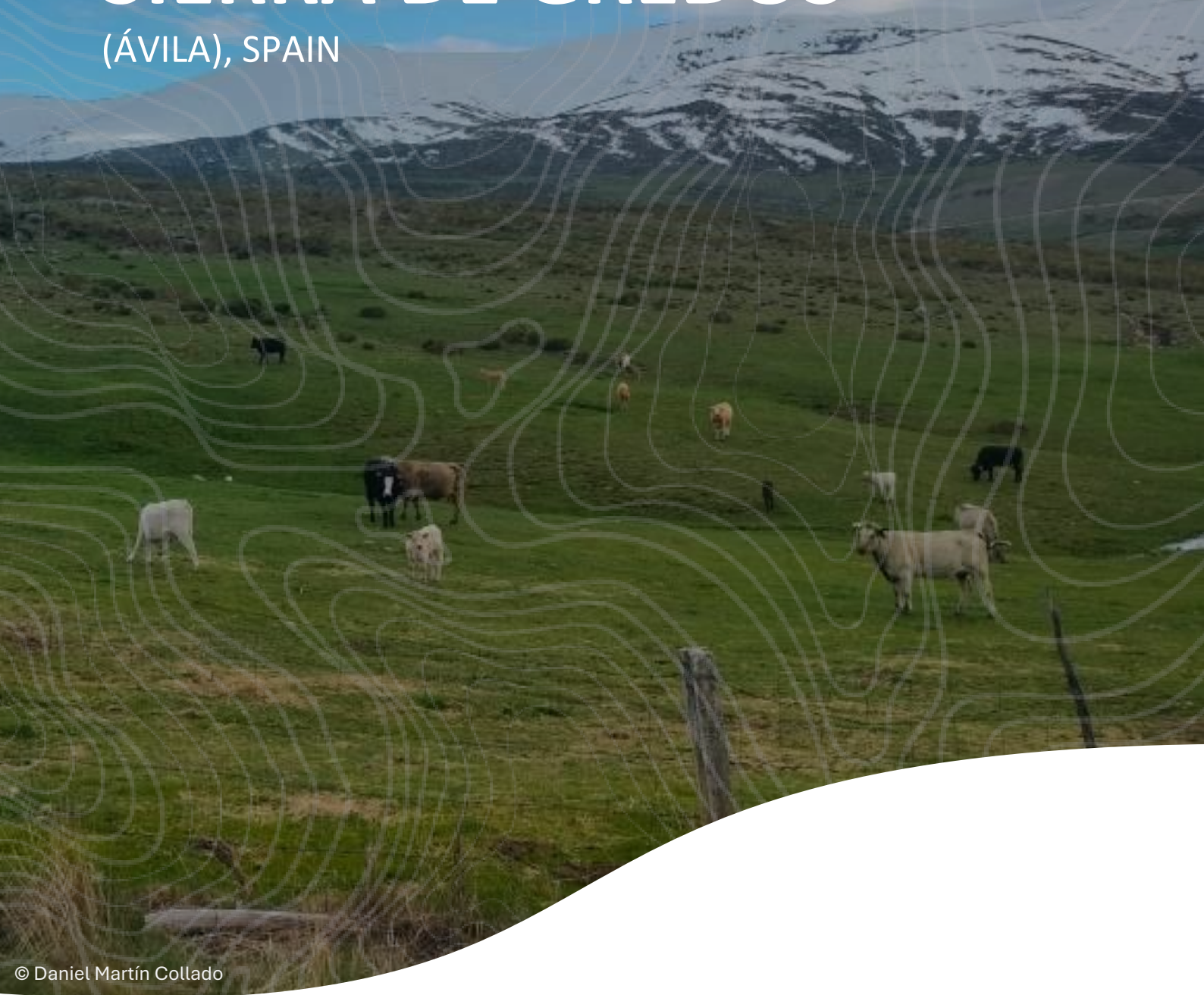


STUDY AREA DESCRIPTION

SIERRA DE GREDOS

(ÁVILA), SPAIN



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**Funded by
the European Union**

CoCo is funded by the European Union's Horizon Europe - Research and Innovation programme (grant agreement No. 101181958). The project, started in November 2024, has a duration of three years.

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1 INTRODUCTION

Nestled in central Spain, the Sierra de Gredos has shaped mountain life for centuries through transhumance along the iconic Puerto del Pico pass, a route dating back to Roman times. Today, its economy blends nature-based tourism with extensive cattle farming, much of it still relying on seasonal migrations to the wolf-free lowlands of southwest Spain. After wolves disappeared in the 1950s, they naturally returned just a decade ago, bringing both renewed challenges and a reminder of Gredos' deep ties between alpine meadows, forests, and enduring pastoral traditions.



Figure 1. Extensive grazing of Avileña-Negra Ibérica cattle in the high-mountain pasturelands of the Sierra de Gredos (Ávila, Spain), exemplifying traditional low-intensity livestock systems in the region (May 2025; Photo credit: Daniel Martín Collado)

2 OVERVIEW

- **Municipalities:** Hoyos del Espino, Navarredonda de Gredos, and San Martín del Pimpollar.
- **Geographical size:** Combined area of approximately 175 km².
- **Human population:** The 3 municipalities host roughly 1,007 permanent residents.
- **Number of livestock farmers (approx.):** Approximately 109 extensive beef cattle farms.
- **Livestock farming systems:** Extensive beef cattle farming through low-input family operations that rely on natural grazing resources.

- **Wild large carnivore species:** The Iberian wolf (*Canis lupus signatus*) is the only large carnivore with an established presence in the area.
- **Wolf/ population:** Ávila province is home to 6–10 stable wolf packs.



Figure 2. Extensive cattle grazing in the high-mountain pasturelands of the Sierra de Gredos (Ávila, Spain), including Charolais and Avileña-Negra Ibérica breeds, representative of traditional low-intensity livestock systems in the area (May 2025; Photo credit: Daniel Martín Collado)

3 SOCIOECONOMIC CONTEXT

- Nested within the Gredos Regional Park and recognised as part of the Natura 2000 network, the landscape includes forests of Scots pine and Pyrenean oak, alongside extensive shrublands. Above 1,800 metres, the landscape features glacial cirques and alpine meadows. Winters are long and snowy, while summers are brief and dry. These climatic factors determine seasonal grazing activities throughout the year.
- The local economy is structured around extensive cattle farming and nature-based tourism. Seasonal tourism has grown steadily due to the area's scenic beauty and outdoor recreational offerings (hiking, birdwatching), but livestock production remains vital to the rural economy, cultural identity, and landscape conservation.
- These rural mountain communities face severe demographic challenges: population decline, ageing, limited job market, and outmigration of the younger generation. However, traditions like summer cattle drives through the Puerto del Pico and festivities tied to pastoralism still persist and foster a strong sense of belonging and cultural heritage among local residents.



Figure 3. Shepherd on horseback guiding Avileña-Negra Ibérica cattle during transhumance through the Puerto del Pico Mountain pass (Ávila, Spain), exemplifying traditional pastoralism in highland environments (June 2011; Photo credit: Daniel Martín Collado).

4 FARMING CONTEXT

Farming is primarily based on the extensive beef cattle rearing, featuring the local Avileña-Negra Ibérica breed alongside international breeds such as Limousine or Charolais. The Hispano-Breton horse breed is commonly raised in the area for meat production. Animals graze year-round across a diverse mix of private holdings and communal lands and birth outdoors. Transhumance remains an active tradition, with herders moving cattle to high mountain pastures in summer and to warmer areas in winter. Most farms are managed by one or two individuals, and mechanization is limited.

Main Challenges:

- ▶ Ageing farmer population and low generational renewal.
- ▶ Sanitary status and animal health regulations, particularly tuberculosis and brucellosis.
- ▶ Predation by wolves, emotional burden on herders, and administrative delays for compensation.
- ▶ Declining profitability and dependency on EU subsidies.
- ▶ Scarce rural infrastructure and limited public services.



Figure 4. Winter feeding of Avileña-Negra Ibérica cattle in the high-mountain pastures of the Sierra de Gredos (Ávila, Spain), illustrating the adaptation of traditional extensive livestock systems to harsh climatic conditions (September 2006; Photo credit: Daniel Martín Collado).



Figure 5. Transhumance of Avileña-Negra Ibérica cattle through the Puerto del Pico mountain pass (Ávila, Spain), a traditional seasonal movement to high-mountain pastures that maintains cultural heritage and landscape connectivity (June 2011; Photo credits: Daniel Martín Collado).

5 LOCAL CONFLICT ASSOCIATED WITH LARGE CARNIVORES

Number of attacks:

Livestock predation by wolves has increased significantly in the whole Ávila province in recent years. According to official data over 1,525 animals killed in 2024, 85% of them cattle.

- ▶ Dozens of attacks are reported annually in the study area. In 2024 the three municipalities under study area suffered around 50 livestock casualties by wolf attacks.
- ▶ Most attacks occur during summer grazing, but winter attacks also occur near villages.

Social conflict:

The conflict has both material and social dimensions.

- ▶ Farmers report increased workload, emotional stress, and a growing sense of helplessness since lethal control was prohibited in 2021
- ▶ Compensation systems are perceived as slow and insufficient, failing to cover the direct and indirect impact of wolf attacks
- ▶ Non-lethal preventive measures (e.g. guard dogs and electric fencing) have limited effectiveness in extensive cattle systems due to large areas, rugged terrain, and scattered herds.



Figure 6. Avileña-Negra Ibérica cattle grazing in traditional extensive pastures of the Sierra de Gredos (Ávila, Spain), where fencing is absent or widely spaced, reflecting long-established grazing practices (May 2025, Photo: D. Martín Collado).



Figure 7. Traditional stone-and-wire fencing used to deter large carnivores in the Sierra de Gredos (Ávila, Spain), with Hispano-Bretón horses grazing nearby (May 2025, Photo credit: D. Martín Collado).



Figure 8. Hispano-Bretón horses in Navarredonda de Gredos beside mixed stone-and-wire enclosures protecting livestock from wolf predation (May 2025, Photo: D. Martín Collado).

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