## INTERNATIONAL MOUNTAIN CONFERENCE

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>> SYNTHESIZE MOUNTAINS OF KNOWLEDGE <<

## **Submitted Abstract**

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## **Abstract**

Historically, livestock farming was a fundamental part of the economy in the mountainous Garfagnana region of northern Tuscany, Italy. Cattle and sheep were raised on the slopes of the Apuan Alps and the Apennine Mountains. Recent social and ecological changes, though, have led to widespread abandonment of the sector. Nonetheless, today, livestock farming has an outsized impact on landscape and ecology as well as local identity and culture. This paper describes the social and ecological context of livestock farming in Garfagnana, tracing how this context has changed over time to shape current livestock farming systems and local landscapes and ecology. Then, it outlines a project underway to add-value to each step of the livestock and dairy production chain in order to favor economic growth and contribute to the survival of livestock farming. In particular, the paper focuses on the interlinked socio-ecological and animal welfare dimensions of the production chain.

At present, livestock farming in Garfagnana is under threat from economic, social, and ecological challenges that require novel approaches if the sector is to survive. Among these challenges is the low price-per-liter paid by purchasers for milk and the imminent threat that purchasers will cease collecting milk in Garfagnana because of the relative isolation and limited number of producers in the region. Farmers also face increasing expenses, challenging bureaucratic hurdles, and environmental and climate changes that threaten farm survival.

In response to these realities, local livestock farmers and breeder associations in collaboration with universities and local government have undertaken a project to add-value to each phase of the mountain livestock and dairy supply chain in an effort to revitalize the sector and protect natural and cultural livestock heritage, including the unique Garfagnina breed of cattle and sheep.

In this paper, we focus on two interlinked aspects of the project, animal welfare and the socio-ecological context of livestock farming in Garfagnana. The socio-ecological analysis has revealed the economic, social, and ecological constraints on livestock farming that shape management strategies as well as the opportunities that come with farming in this particular rural, mountainous area. These constraints and opportunities play out in unique ways on livestock farms and can shape animal welfare. Alongside this analysis, we examined farm management strategies and the microbiological profile of milk from livestock farms in Garfagnana. Based on the results, we provide suggestions for how to increase animal welfare and promote the livestock sector in Garfagnana.