



Increasing Montado's mixedness by combining cattle and sheep can offer multiple benefits.







Background

The rise of cattle intensification incentives in the past has led to a decline in natural oaks regeneration within Montado ecosystems. Also contributing to a reduction in sheep production tendency.

Sheep grazing increases vegetation heterogeneity and diversity compared to cattle grazing in Mediterranean dry grasslands.

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Integrating sheep with cattle can supports Montado sustainability, socially, environmentally and economically.

Methodology



The farm's annual resource management was evaluated using emergy analysis, while a nitrogen footprint was calculated for livestock feed management.

Through these approaches self-sufficiency and the enviromental load of the farms were studied to evaluate the whole sustainability under scenarios of low pasture yield. Maintaining the farm's balance between feed production and animal yield is becoming a challenge when facing climate change influencing the rain seasons and increasing drought over the hotter months.







Encouraging low-input systems that capitalize on natural resources is critical for the long-term sustainability of mixed farming systems.

"What lessons can we learn from our innovation study which helps us to improve the efficiency and resilience of mixed farming systems in **Europe?**"



Traditional knowledge should be integrated into modern management strategies, particularly in mixed farming systems that rely heavily on ecological processes.



Diversity provides an economic buffer against poor years, such as low livestock yields due to drought or increased feed prices.



Diets high in locally available resources and low in synthetic inputs can reduce the nitrogen footprint of meat production.





Take Home Messages

Sheep farming, more laborintensive and reliant on purchases compared to cattle, is experiencing a decline in market demand.

Despite this, sheep farming is a low-impact practice that helps maintain soil health and the overall landscape.

In times of reduced pasture yield, sheep pose lower risk as they require less feed. Cattle, on the other hand, pose a higher risk during low yield periods, as farmers must either purchase concentrates, import fodder, or oversell livestock, which can lead to financial strain or lower market prices.

Reliance on external feed increases, especially in cattle, livestock's Nitrogen Footprint.

Results



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 862357



