



European farming Living Labs perspective for Climate Change and Biodiversity in Food Systems

Co-Creating Solutions for Threatened Mediterranean Agroforestry

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Abstract

The Portuguese *Montado* is a vibrant, mosaic Mediterranean agro-silvo-pastoral system spanning approximately 1 million hectares. Possessing immense ecological and socio-economic value, this unique landscape is currently facing severe decay. Driven by intensification and climate change, the system is losing roughly 5,000 hectares per year due to poor soil health, lack of tree renewal, land abandonment, and economic agendas that favor short-term productivity over sustainable, multifunctional management. Because these complex degradation patterns often remain subtle and un-seen, they frequently go unaddressed by traditional conservation models.

To counter this decline, the Montado Living Lab was established as a long-term, transdisciplinary open innovation ecosystem. Formally integrated as an Adherent Member of the European Network of Living Labs (ENoll), it operates via a 10-year protocol uniting 39 entities across the quadruple helix—including 6 research entities, 8 public administrations/associations, 4 companies, and 21 farmers and landowners. Anchored on trust and transparency, the lab utilizes 40 experimental plots as real-world laboratories. Through co-creation workshops, transdisciplinary field visits, and capacity-building events, stakeholders collaboratively test and implement regenerative practices aimed at boosting soil health, expanding water retention, and fostering tree cover restoration.

Key Insights & Policy Implications

The Montado Living Lab's approach highlights a fundamental reality: soil health is hyper-local and depends entirely on site-specific land management and human behavior. However, scaling these local successes requires navigating critical systemic challenges:

- **The Economic Disconnect:** Bridging the gap between the long-term ecological benefits of ecosystem restoration and the short-term economic pressures faced by land managers.
- **Policy Integration:** Overcoming institutional inertia to transform hyper-local, real-world data into a cohesive evidence base capable of shaping regional, national, and international frameworks (such as the EU Common Agricultural Policy).

Conclusion

This presentation argues that overcoming regional environmental decay requires legally binding restoration targets, dedicated cross-sectoral policy frameworks, and innovative financial incentives. The Montado Living Lab serves as a scalable blueprint for how science-practice interfaces can effectively drive bottom-up climate adaptation and biodiversity preservation.