

Coppice forests as an alternative to shrubland areas in Portugal

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Coppice is a silvicultural system commonly used in Portugal for decades. The production of several types of small and medium sized materials, on short cutting cycles (10 to 30 year), such as firewood, poles, charcoal, raw material for basketry and cooperage, among others, is one of the oldest forms of management in semi-natural forests.

1 - Landcover

- ▶ Portugal is a country with a high forest aptitude, inasmuch that about 35% (3.2 million ha) of its territory is allocated to forest stands.
- ▶ Around 20% (~1.5 million ha) are occupied by shrubland.
- ▶ Three dominant species covering 72% of forest area are: *Eucalyptus globulus* (812 thousand ha; 26%), *Quercus suber* (737 thousand ha; 23%) and *Pinus pinaster* (714 thousand ha; 23%).

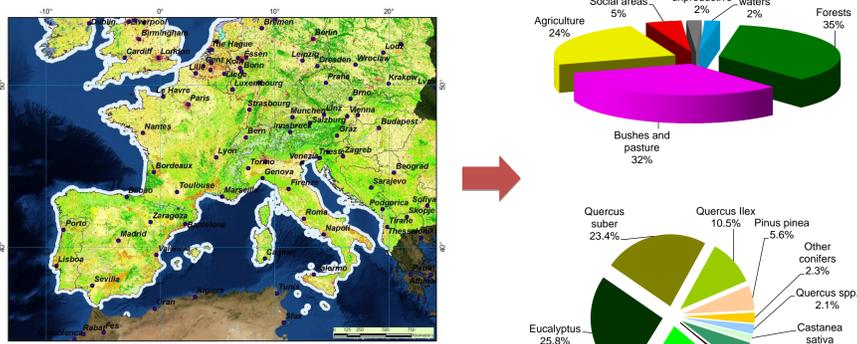


Figure 1. a) Land use/cover map. b) Statistic of main Portuguese forest species

3 - Methodology

- ▶ The shrubland areas were mapped and based in the Ecological map of potential vegetation the suitable areas for grown traditional hardwood coppice were assessed (Figure. 2).

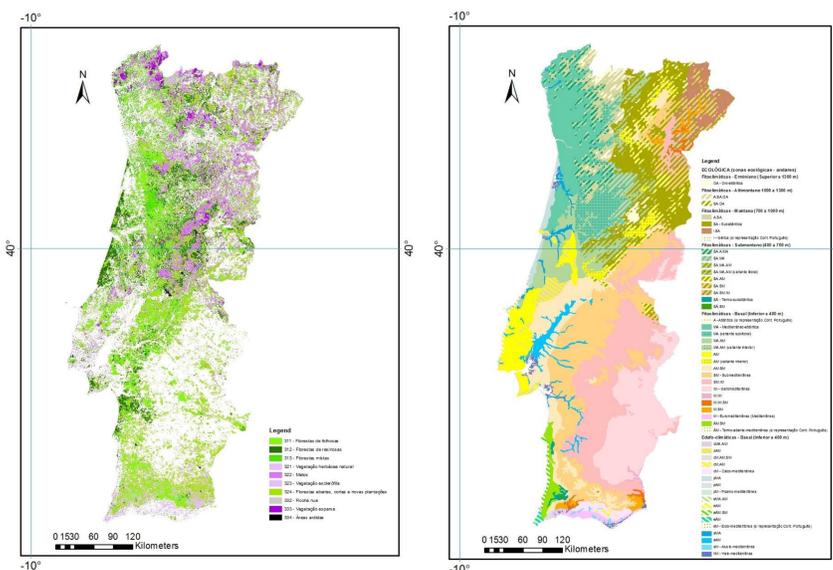


Figure 2. a) Forest cover map including shrubland areas. b) Ecological map

2 - Forest Biodiversity

- ▶ Maritime pine high forests are growing mainly for the paper industry, plywood and roundwood and *Quercus suber* for cork production. Eucalyptus coppice has expanded enormously, in recent decades, as it is grown in rotations of 10 - 12 year for pulpwood production, while coppice of several species lost interest over the years.
- ▶ These three species are distributed almost exclusively by distinct areas making the diversification of forest cover a huge priority for the whole country.
- ▶ In this context, high relevance should be given to coppicing of traditional hardwood, dominant in the past.

4 - Results

- ▶ The actual shrubland areas with potential for grow the most traditional coppices species are:

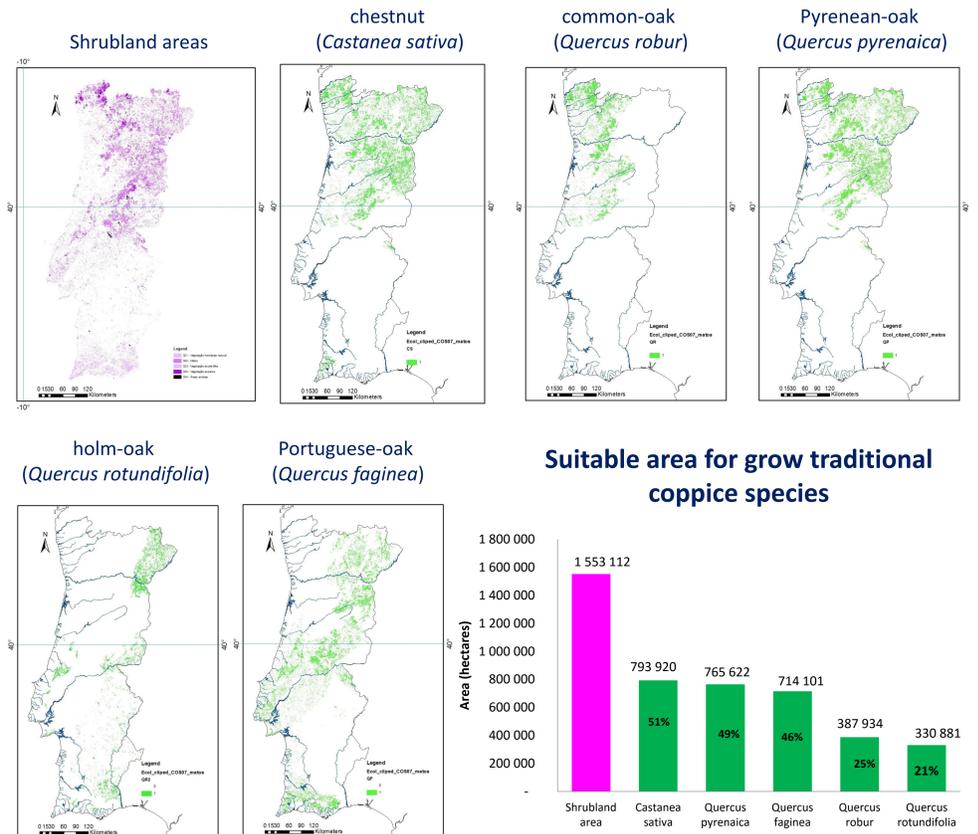


Figure 3. Shrubland areas with potential for grow coppice forests

5 - Conclusion

- ▶ Converting shrubland areas for traditional coppice forests would enhance biodiversity by strengthening the resilience of ecosystems against biotic and abiotic agents and also would contribute to diversify local forest economy by allowing or reinforcing small and medium industries related to firewood, poles, charcoal, raw material or basketry and cooperage.

Bibliography

- Albuquerque, J. de Pina Manique (1954). Carta Ecológica de Portugal. Ministério da Economia. Direcção Geral dos Serviços Agrícolas. Lisboa. 58pp.
- Carta de Uso e Ocupação do Solo de Portugal Continental para 2007 - COS2007
- Carvalho, J., Viana, H., Rodrigues, A., 2015. Portugal. In: Nicolescu, V., Pyttel, P., Bartlett, D. (Eds.), Evolution and Perspectives of Coppice Forests in Europe and South Africa, Universitatea Transilvania din Brasov, pp. 27-29.
- ICNF, 2013. IFN6 - Áreas dos usos do solo e das espécies florestais de Portugal continental. Resultados preliminares. Instituto da Conservação da Natureza e das Florestas, Lisboa 33 pp.