

SILVOPASTURE

A land use management systems for grasslands

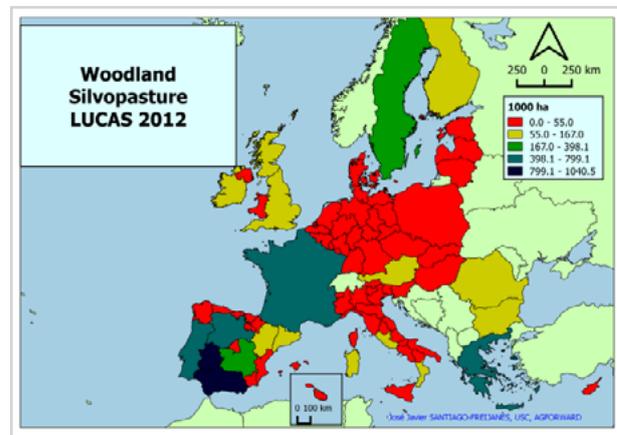
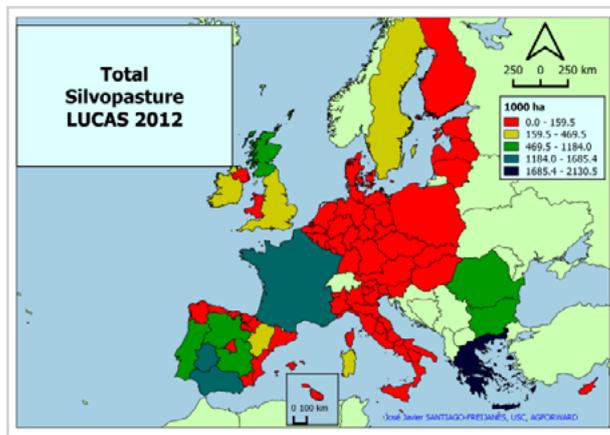


THE WHAT AND WHY

Silvopasture a land use management systems for grasslands

Silvopasture represents the 85% of the agroforestry practices in Europe, being the most extended among other agroforestry practices (silvoarable, riparian buffer strips, forest farming and homegardens). Silvopasture is a practice that can be associated to sustainable grassland management mainly located in the South and North of Europe, that provides enormous

advantages to reduce livestock production costs. However, it is not extensively used in Europe as only the 10% of the grassland area is occupied by silvopasture. One of the main drawbacks to foster agroforestry in Europe for farmers is to really identify the potential that silvopasture has to increase productivity in livestock systems.



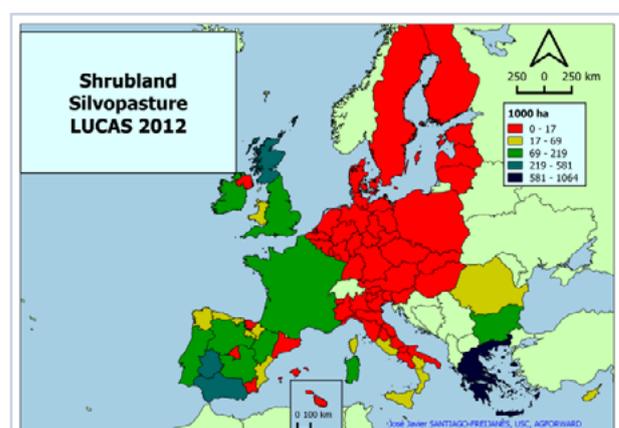
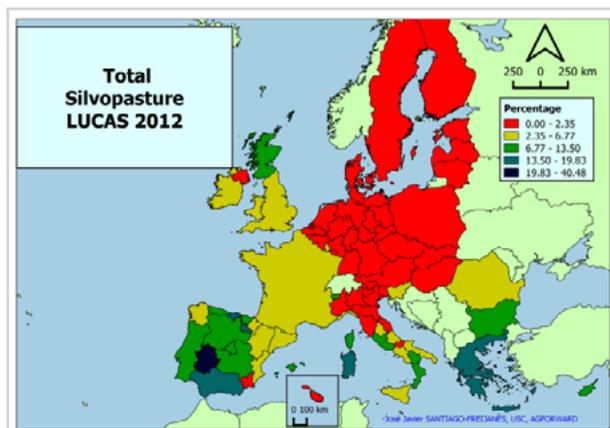
Silvopasture extent (a) and share (b) in different Regions of Europe - Santiago-Freijanes JJ

HOW IS THE CHALLENGE ADDRESSED

Improving AF knowledge

Fostering the benefits of silvopasture in Europe should be based on the understanding of the main types of pastures it covers. Livestock feed restrictions are associated to summer and winter in South of Europe while only in winter in the North, being the period of pasture shortage usually longer in the South than in the North of Europe. South of Europe grasslands associated to Mediterranean areas are naturally composed by woody perennials, the unique type of vegetation able to persist during the long summer periods, while maximum pasture production

occurs in summer in Northern herbaceous grasslands with a scarce proportion of woody perennials. Woody perennials can help to overcome these shortage periods in both North and Southern countries, while promoting the delivery of ecosystem services linked to environment. Silvopasture in the North of Europe has trees as woody perennials while in the South shrubs are the woody perennial component. Fruit trees silvopasture agroforestry is less used in Europe in spite of being full paid by the CAP direct payments.



Extent of silvopasture in woodlands and shrublands - Santiago-Freijanes JJ



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Keywords: Silvopastoralism; sustainability, livestock, shortage periods

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HIGHLIGHTS

- Silvopasture is an excellent tool to improve biodiversity
- Silvopasture is an excellent tool to mitigate climate change
- Silvopasture is an excellent tool to increase systems resilience as it provides feed to animals during the shortage periods
- Silvopasture is an excellent tool to improve animal welfare

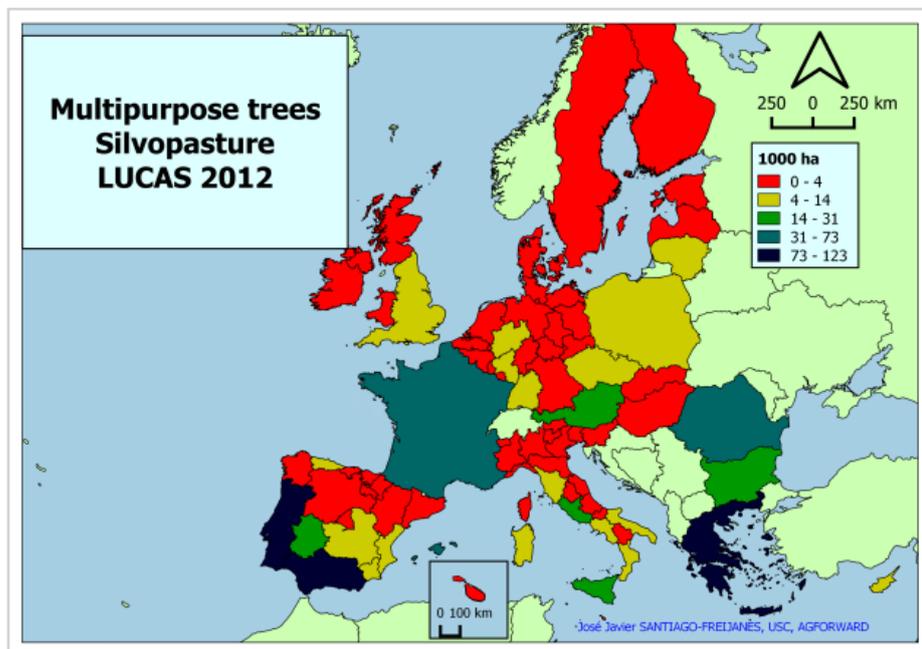
ADVANTAGES AND DISADVANTAGES

Silvopasture a good way to enhance bioeconomy

Silvopasture is able to provide a series of advantages to grazing systems in Europe. From an economic point of view having palatable woody perennials allow animals to graze in summer, autumn and winter when shortage periods occur in a sporadic or stable form while increasing livestock health (tannins associated to antihelmintic capacity). Summer grazing avoids high concentrate costs, as happen with the consumption of acorns or fruits during the autumn. Moreover, the price of the concentrate and the fruits could conduct to decide if fruits should be given to animals or not (harvesting for

selling) providing a more resilient farming system also linked to pruning during those especially dry summers. In the North, the use of woody perennials can be a good partial replacement of concentrates as happen with *Morus alba* with a protein content similar to clover. Moreover, if adequate stocking rate is employed the combination of woody vegetation with animals also tends to increase biodiversity as 1) animals select some plant species instead of others, and 2) they unevenly fertilize the soil, creating patches of varying fertility which favour different plant species, and 3) animal trampling generates micro perturbations allowing annual species to share the same plot than perennials (Rigueiro et al. 2012). If

more than one animal species is allowed to graze, their different behaviour also improves biodiversity because they select different species (i.e. goats feed preferably on woody vegetation) but also because the form of their mouth and grazing action allows some plant species to grow better than others (i.e. *Agrostis* spp. adapted to sheep grazing). Moreover, agroforestry is usually linked to autochthonous breeds, therefore preserving them.



Extent of fruit trees/multipurpose silvopasture
Santiago-Freijanes JJ

FURTHER INFORMATION

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