Designing Silvopastoral practices

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The agroforestry design should be based in a clearly and carefully strategy from the beginning in order to maximize the production from a spatial and temporally point of view of both woody perennials and grass component. When woody perennials are going to be included in grasslands areas they would be better suited if they provide some benefits to the system such as for example (i) the type of tree, legume woody perennials are able to increase pasture production than not legume woody perennials, (ii) the form and distribution of the woody perennial that allows water and light to reach the soil are better than those that generates a lot of shade that limits grass production or the (iii) palatability and quality of the woody perennials from a grazing perspective. Woody perennials with high leaf /fruit palatability and quality can reduce the needs of buying concentrates when shortage periods are important. The selected woody perennial should consider the potential use of this component itself, and for example, if trees are planted for timber production, some tree protection should be carried out but if shrubs are sown, protection is usually not as important once the plant is established if sustainable grazing is carried out. The interaction of the woody perennial/animals should also be taken into account. Trees usually generate shade that increases animal welfare when umpredictable heats appear, therefore improving animal production. But, also trees increases soil fertility improving so far grass production close to the trees, sometimes associated to shortage periods and therefore providing extrafeed for animals. When shrublands/forestlands are the land where silvopasture is going to be established, an adequate evaluation of the main understory component should be carried out as the understory species (either shrubs/herbaceous vegetation growing below trees or shrubs) have different palatability for different animals and even animal breeds.

Figure 1. In the silvopastoral design must value the tree species, the plantation framework, the need for protective

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