

AGROFORESTRY AND PASTORAL SYSTEMS



What is a pastoral agroforestry system?

It is the practice of integrating trees, forage and domesticated animal grazing in a mutually beneficial manner. Using the principles of managed grazing and is one of many different forms of agroforestry.

Properly managed silvopastoral systems can increase overall productivity and long-term income due to the simultaneous production of tree crops, forage and livestock and can also provide environmental benefits such as carbon sequestration. The silvopastoral system is one of the oldest forms of agriculture, and has been practiced in many regions of the world for many centuries. It differs from an agroforestry system in that the silvopastoral system incorporates livestock. It is one of the global warming adaptation strategies for economic activities in rural areas.

Methods

Incorporation

Silvopastoral systems can be established by planting trees in existing pastures or by establishing pastures in existing forests. These two establishment methods differ significantly.

Incorporation of trees in the pasture

Planting trees in existing pastures presents several challenges: young trees must be protected from livestock, trees may take years to become productive (depending on the species), and planting trees in a pasture may limit the ability to use that land for other purposes in the future.

Land preparation and implementation

The soil preparation work will be similar to that of any agricultural crop. What must be considered is that depending on the species to be planted, the propagation material may be different.

Livestock component

The experience of fattening steers (wintering and/or summering) in silvopastoral systems, given the characteristics of the forage that grows in the undergrowth, lengthens their "finishing" cycle. Therefore, in general, breeding is preferred as an activity, since it requires a maintenance diet rather than a fattening one.



Benefits

A primary benefit of silvopastoral technique is the increased utilization of cropland.

Silvopastures can incorporate large areas of unused forest into production and put it to produce multiple products on the same area. This diversifies farm income sources and increases agricultural viability. The silvopastoral technique has been found to increase wildlife abundance and diversity and contribute to carbon sequestration and climate change mitigation.

Cattle

Trees in silvopastoral systems provide livestock with protection from sun and wind, which can increase animal comfort and improve production. Trees can provide shade in the summer and windbreaks in the winter, allowing livestock to moderate their own temperature.

Forage

Well-managed silvopasture systems can produce as much forage as open grazing systems under the right circumstances. Also, it has been observed that silvopasture systems produce forage of higher nutritional quality than non-silvopasture forage under certain conditions. On the other hand, greater forage availability has been observed in silvopasture systems compared to open pasture systems under drought conditions, where the combination of tree shade and water uptake from tree roots can reduce the impacts of drought.