

Silvopasture: Integration of Pastures, Livestock, Trees & Shrubs

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Silvopasture systems combine trees and pasture to make efficient use of space and natural resources to raise beef and dairy cattle, or small ruminants. Silvopasture can also regenerate fields, forests and pastures degraded by previous monocultures, increasing their biodiversity.

Land regeneration can transform forests by mixing in pasture species or by planting trees or shrubs into open pastures. The dense canopy of tropical forests must be managed to allow sunlight to reach the ground for forage to grow. Trees can provide nutritious leaves and fruits for forage, shade and shelter for livestock, and habitat for many wildlife species, including pollinators.

Silvopastures help mitigate climate change by storing carbon. They help create resilient landscapes by conserving soil moisture, reducing wind, improving water quality, and reducing soil erosion. Legume tree species also fix nitrogen in the soil and recycle nutrients from deeper soil layers for use by plants and microorganisms near the soil surface.

Example Silvopasture Practices:

Protein Bank

A protein bank is an area planted with high quality forage trees where livestock have limited access to browse for a few hours every one to three days. Protein banks are usually composed of a single species such as *Leucaena leucocephala* (tan-tan, wild tamarind) or *Cratylia argentea*. Pruning the trees and shrubs creates the growth of young tender shoots for the animals to browse.

Alley Cropping

This practice involves producing forage in alleys between rows of trees or shrubs. Trees and grasses may be browsed, foraged or used for cut and carry. This system provides a balanced diet as cattle browse both legume trees and forage grasses. Orchards of coconut, avocado and citrus can be planted to create alleys that are managed for grazing.

Living Fences

Living fences divide grazing pastures or farm boundaries. They provide shade, shelter, fodder and aesthetics. They also serve as ecological corridors. The most common species used in the Caribbean Area are *Gliricidia sepium* (mother of cocoa) and *Guazuma ulmifolia* (bastard cedar). When feed is scarce, trees can be pruned for cut and carry forage.

Shade Trees

Trees can also be scattered throughout a pasture to provide shade. These trees can produce additional products such as timber, forage and fruits. Thinning and brush management must be practiced regularly to maintain forage quality.

