

Pasture Improvement Tools

Agroforestry Systems



Agroforestry integrates crops, trees and livestock in the same area and at the same time. Together these components can create long-lasting sustainable farming practices which can provide short-, medium-, and long-range economic, environmental and social benefits for farmers.

Economic benefits

Agroforestry systems benefit from the multifunctionality of their integrated components (trees, crops and animals). Trees typically provide long term investments while crops and animals offer shorter and medium term income. The use of hardwood species, shrubs, crops, forage and grazing animals intermixed also offers greater ecological resiliency, diversity and lower risks while ensuring higher income per acre.

Environmental benefits

Agroforestry systems can be planned and arranged to mimic forests, protecting water and soil quality, producing food and raw materials while supporting wildlife.

Single or multiple species can be used, however, different species can help minimize risks and add more economic and environmental sustainability over time. Trees and shrubs act as carbon “sinks” and storage, offsetting animal emissions, connecting forest patches and acting as wildlife corridors.

Common types of Agroforestry Systems

1. *Silvopasture:* combines trees, forages and livestock. Trees can be arranged in a scattered or in a row fashion. Ideally, animals should be rotationally grazed and must enter the system when trees are strong enough to withstand their presence. Animals and forage benefit from shade and shelter while trees and forages cycle animal’s manure.

2. *Alley cropping:* includes trees arranged in rows where crops are placed in wide alleyways between the tree rows. Hay or grazing animals can be intercropped along the alleyways.

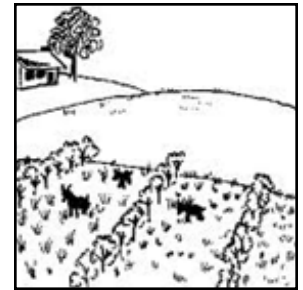
3. *Forest gardens:* integrates food, herbal, timber and specialty non-timber forest products in the same area allowing farmers sustainable income.

4. *Riparian buffers:* provides river bank protection by reducing erosion and ecosystem conservation in waterways enhancing water quality with the potential to offer extra revenues.

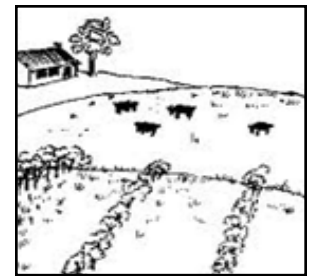
5. *Windbreaks:* Used for protecting crops from prevailing winds can also increase pollination, production and reduce wind erosion. Windbreak efficiency increases with the use of multispecies.

AGROFORESTRY SYSTEMS

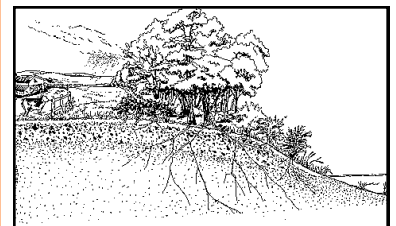
Silvopastoral



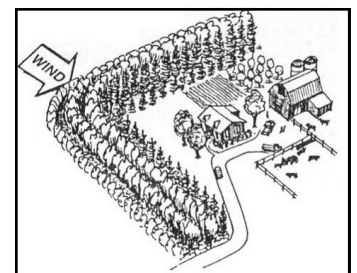
Alley Cropping



Riparian Buffers



Windbreaks



MORE INFORMATION

For more information about the Pasture Program contact Jenn Colby at (802) 656-0858 or jcolby@uvm.edu, Juan Alvez at (802) 656-6116 or jalvez@uvm.edu, or Kimberly Hagen at (802) 656-3834 or kimberly.hagen@uvm.edu.



UVM Center for Sustainable Agriculture
23 Mansfield Ave.
Burlington, VT 05401