Info

Working Trees

What is agroforestry?

In Florida, this alley cropping system combines cotton in the alleyways between rows of pine trees. — Photo by Shibu Jose

Agroforestry is the intentional mixing of trees and shrubs into crop and/or animal production systems to create environmental, economic and social benefits.

Agroforestry practices include field, farmstead and livestock **windbreaks**; **riparian forest buffers** along watercourses; **silvopasture** systems with trees, livestock and forages growing together; **alley cropping** that integrates crops in alley ways between high-value trees and shrubs; and **forest farming** where food, herbal, medicinal and decorative products are grown under the protection of a managed forest canopy. Agroforestry practices can be adapted to address special resource concerns such as carbon storage or flood plain protection.

For centuries, Agroforestry has been practiced around the world, though prior to the 1960s most people didn't use this word. The windbreaks that were established during the 1930s to control soil erosion were and continue to be a kind of Agroforestry. Worldwide there is a growing interest in this approach to agriculture.

Agroforestry can be thought of as *Working Trees* with specific jobs that help people and natural resources. Agroforestry is a unique land management approach that provides opportunities to achieve landowner goals of productivity and profitability with environmental stewardship, that result in healthy, sustainable agricultural systems that can be passed on to future generations.

Agroforestry can provide:

- diversified income
- cleaner air and water
- habitat for wildlife
- improved soil health
- safe and healthy food
- energy conservation
- bioenergy production
- increased wealth in rural communities
- sustainable farms, ranches and woodlands

It begins with placing the right plant in the right place for the right purpose.

When seen from above, the different land uses of farms, forests, cities and ranches, can resemble a living patchwork quilt. Agroforestry practices can connect these land uses across entire watersheds and help reduce conflicts between rural and urban land uses. Agroforestry practices can serve as a zone of transition that help people and communities "reconnect" with agriculture.

This is Agroforestry...combining trees and agriculture to enhance long-term production of food and other useful products while protecting the soil and water, diversifying and expanding local economies, providing wildlife habitat, and ensuring a more pleasing and healthy place to work and live.

The practices of agroforestry

Riparian Forest Buffer: This practice uses trees, shrubs and other plants growing adjacent to streams, ponds, lakes and wetlands to protect water bodies from negative impacts of adjacent agricultural fields. These buffers can be designed to produce income while accomplishing their conservation purposes.

Windbreaks: Field windbreaks protect the soil while improving crop yields and providing potential additional sources of income. Windbreaks can be designed to mitigate odors, reduce heating costs, control snow and improve wildlife habitat.

Forest Farming: In forest farming, high-value specialty crops are grown under the protection of a managed forest canopy. Crops such as ginseng, shiitake mushrooms, ramps, goldenseal, and pine straw can be profitably produced with this practice.

Alley Cropping: An alley cropping system integrates crops such as vegetables in alleyways between high-value trees and shrubs. The agricultural crop provides annual income until the trees are able to yield a long-term income product.

Silvopasture: Silvopasture is a practice where trees, livestock, and forages are intentionally managed together in a system. These Working Trees provide shade and comfort for livestock while growing into high-value products.

Special Applications: Working Trees can be used to accomplish landowner objectives such as production of bionergy feedstock. Any Agroforestry practice can be designed to incorporate special needs such as wildlife habitat, annual income or carbon storage.

The future of agroforestry

There is a significant opportunity to expand the application of Agroforestry. When well placed within individual farm and ranch operations and watersheds, Agroforestry practices can support large-scale operations and help small-scale farms be more profitable. The attributes of Agroforestry are well matched to meet society's needs to maintain productivity and profitability and to protect natural resources and the environment — now and in the future.

Cattle graze in a Georgia silvopasture. — NAC Photo

Windbreaks protect crops and soil on this North Dakota farm. — NAC Photo

More information on the Web

USDA National Agroforestry Center www.unla.edu/nac
Natural Resources Conservation Service www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/forestry/sustain
National Sustainable Agriculture Information Service attra.ncat.org/horticultural.html#Agroforestry
The Center for Agroforestry, University of Missouri www.centerforagroforestry.org
Center for Integrated Natural Resources & Agricultural Management www.cinram.umn.edu
Association for Temperate Agroforestry www.aftaweb.org
World Agroforestry Centre www.worldagroforestrycentre.org
Agroforestry Development Centre www.agr.gc.ca/eng/about-us/offices-and-locations/agroforestry-development-centre

USDA National Agroforestry Center

A partnership between:
United States Forest Service
Natural Resources Conservation Service

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The USDA National Agroforestry Center (NAC) is a partnership of the Forest Service (Research & Development and State & Private Forestry) and the Natural Resources Conservation Service. NAC's staff is located at the University of Nebraska, Lincoln, NE. NAC's purpose is to accelerate the development and application of agroforestry technologies to attain more economically, environmentally, and socially sustainable land use systems by working with a national network of partners and cooperators to conduct research develop technologies and tools, establish demonstrations, and provide useful information to natural resource professionals.

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