

Enhancing Rural Economies through Agroforestry: Emerging Opportunities



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National Agroforestry Center
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Setting the Stage

Why are we here?

What will we be doing?

What will happen next?





Why are we here?

Why agroforestry?

- Builds sustainable farms and ranches
- Protects and enhances ecosystem services



Alley Cropping



Riparian Forest Buffer

Agroforestry

The *intentional* integration of trees or shrubs with crop and animal production to create environmental, economic, and social benefits.



Forest Farming



Silvopasture



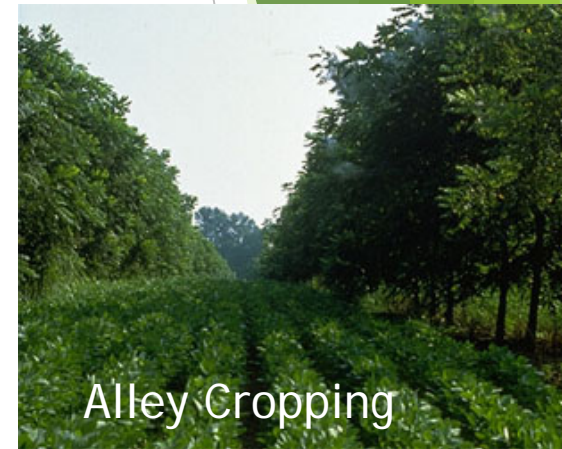
Alley Cropping

U.S. Agroforestry

- Riparian Forest Buffers
- Windbreaks
- Alley Cropping
- Silvopasture
- Forest Farming



Forest buffer



Alley Cropping



Forest Farming



Windbreak



Silvopasture

Production Benefits

Crops

- Increases crop yields
- Improves water use
- Plant protection

Livestock

- Improves forage
- Reduces animal stress
- Increases weight gain



Crop Yields

Crop	Average yield increase (%)
French beans	6
Oats	6
Potatoes	6
Spring wheat	8
Dry beans	10
Maize	12
Soybeans	15
Tomatoes	16
Rye	19
Grass hay	20
Winter wheat	23
Barley	25
Raspberry	40
Snap beans	40
Millet	44
Strawberry	56



NRCS

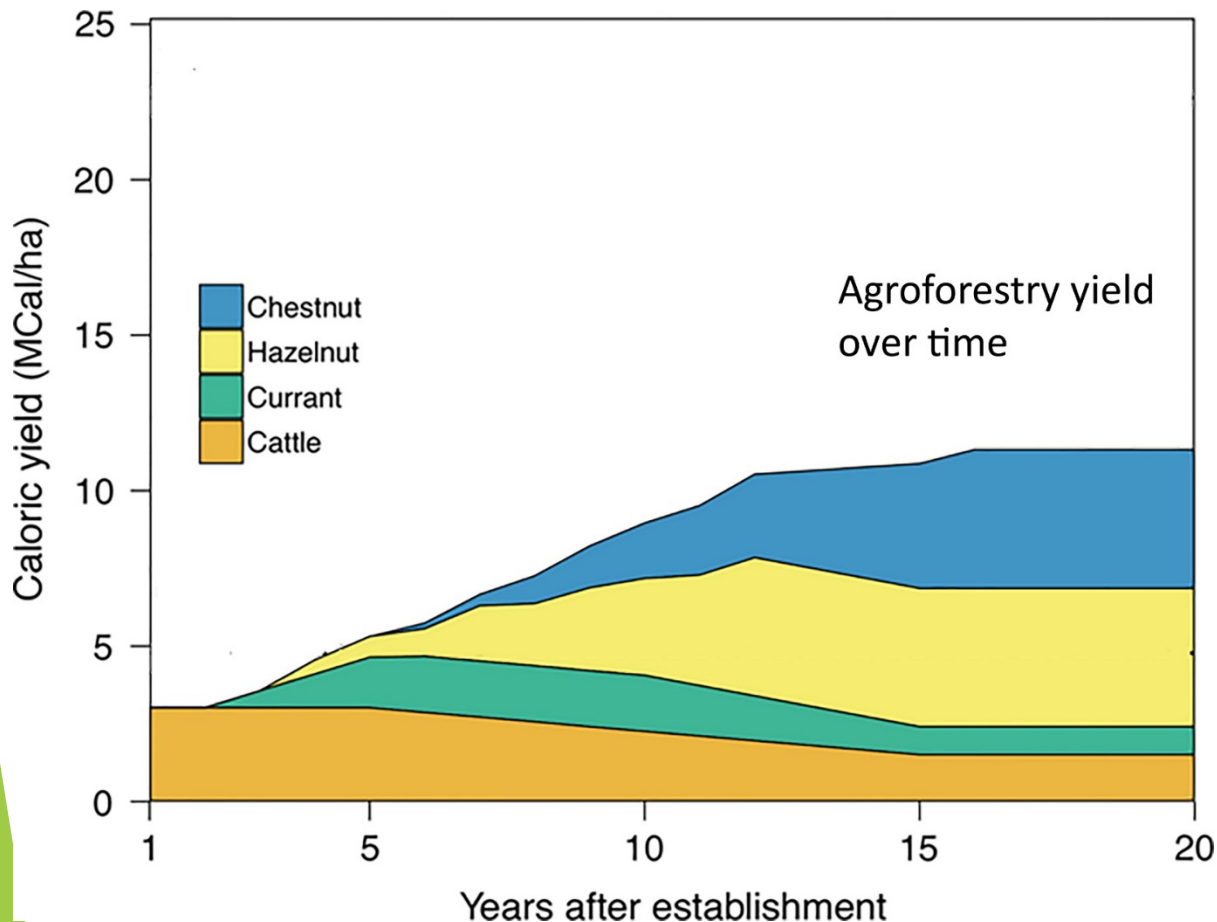


NRCS photos



Windbreak

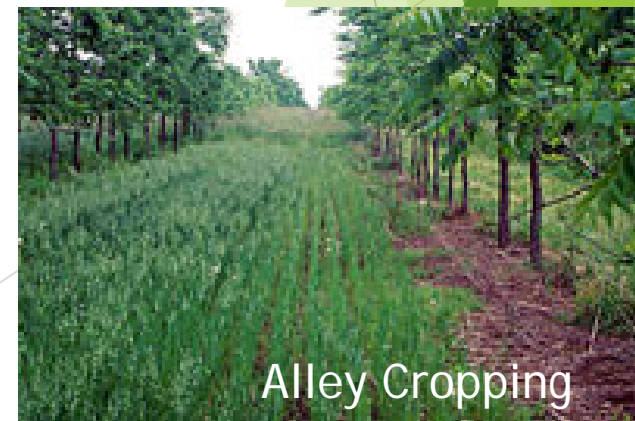
Increasing productivity over time



Wolz et al. 2018



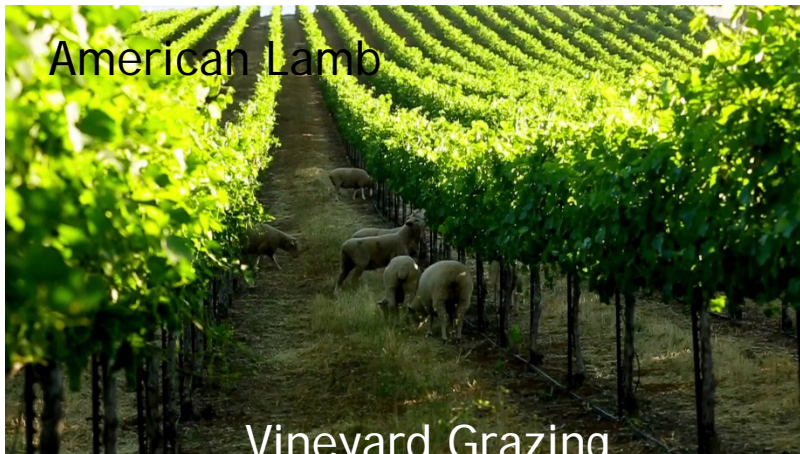
Alley Cropping



Alley Cropping

Diversifies Income Sources

- Provides long and short term income
- Distributes labor across seasons
- Enhances risk management



American Lamb

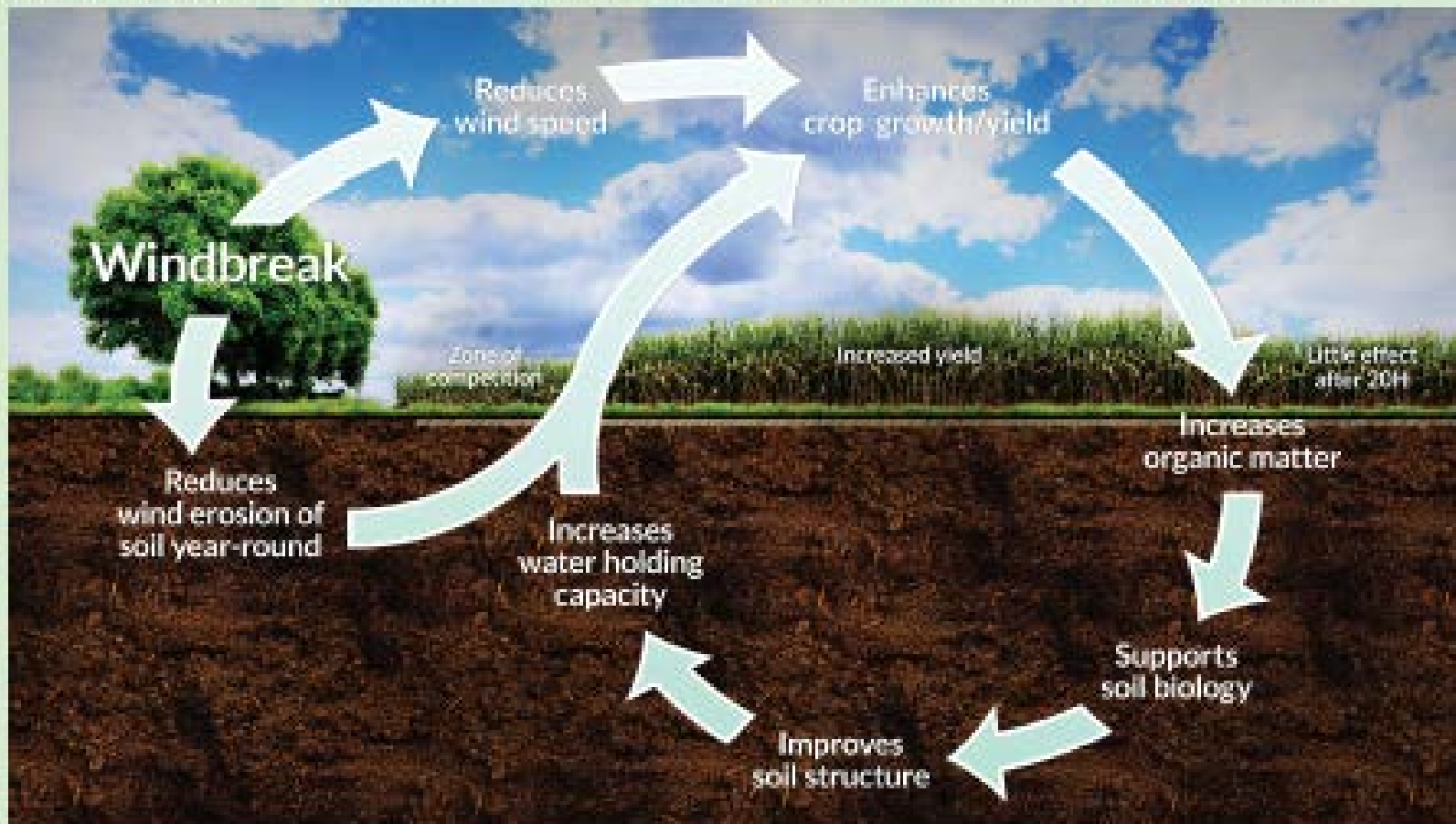
Vineyard Grazing



Soils

Windbreaks and the Soil Health Cycle

Windbreaks positively influence microclimate on an area much greater than the space they occupy. These influences extend into fields about twenty times the height of the windbreak (20H) and affect crops and soil environment.



Water quality

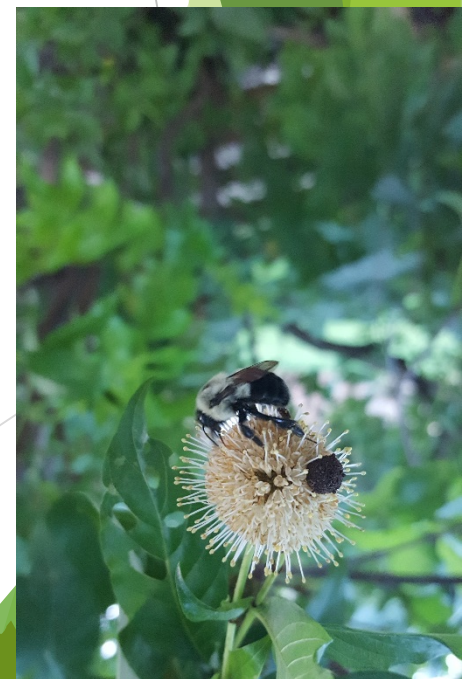
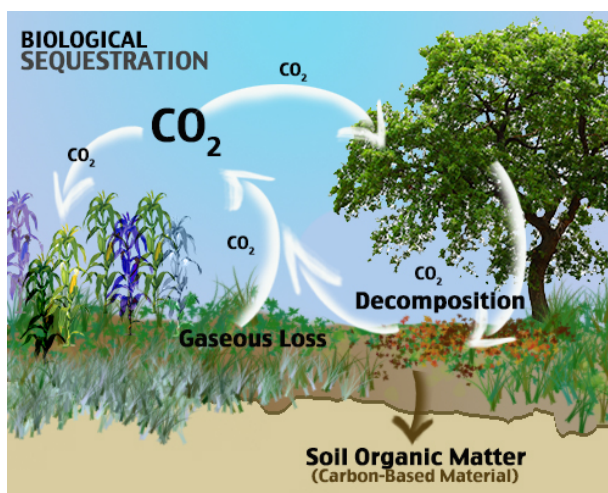
Buffer strips decrease
pollution runoff:

- Suspended solids: 70-97%
- Phosphorus: 60-98%
- Nitrogen: 70-95%



Additional benefits for:

- Wildlife
- Carbon sequestration
- Marginal or degraded lands



What do producers say about agroforestry?

*"...can be the **best tool for creating ... value** on parts of the landscape poorly suited for ... primary crops,"*

John Henrikson, Wild Thyme Farm

*"... **allows us to use the entire farm**, including the half covered by trees,"*

Brett Chedzoy, Angus Glen Farm

*"... **creates an opportunity for two operations on the same land**,"*

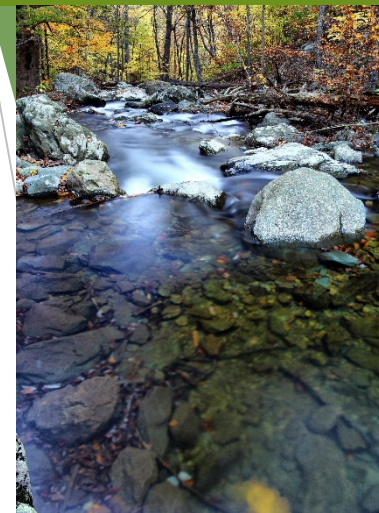
Kelly Mulville, consultant and leasee



Current trends affecting agriculture:

1. Sustainable agriculture, for

- a. Water
- b. Soils
- c. Humans
- d. Wildlife



THAT'S WHY WE'RE PARTNERS WITH GROWERS LIKE CHURCH BROTHERS WHO ARE OBSESSED WITH MAINTAINING

HEALTHY SOIL,

AND CARE FOR IT AS MUCH AS THE CROPS THEY GROW (WHICH ARE ROMAINE LETTUCE AND CILANTRO FOR US, BTW). THEY USE RESPONSIBLE PRACTICES LIKE CROP ROTATION, WHICH ADDS NUTRIENTS AND ORGANIC MATTER BACK INTO THE SOIL, AND GROW COVER CROPS TO MAINTAIN

ROBUST SOIL STRUCTURE.

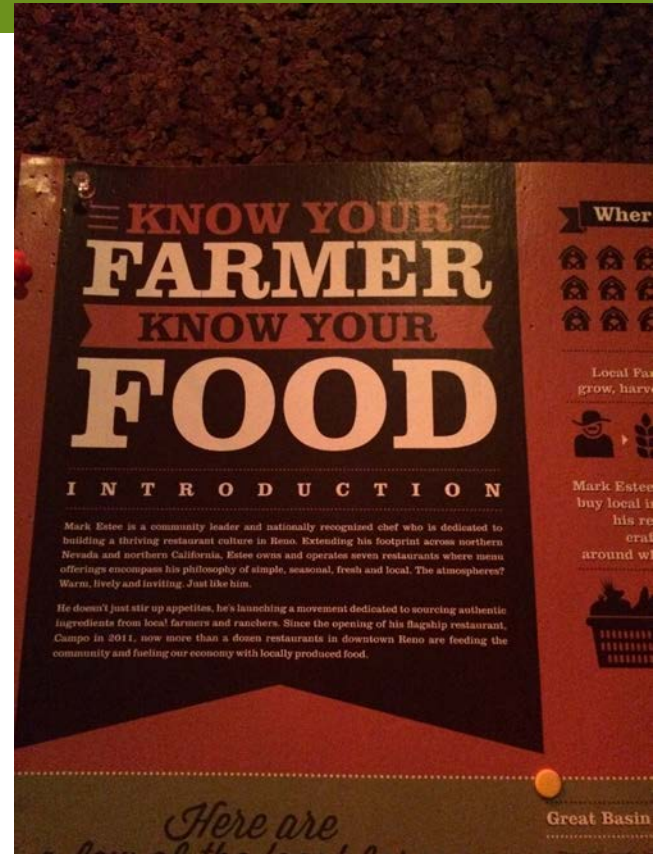
THIS MEANS LESS FERTILIZER AND SOIL EROSION, AND MORE DELICIOUS INGREDIENTS FOR

BETTER BURRITOS.

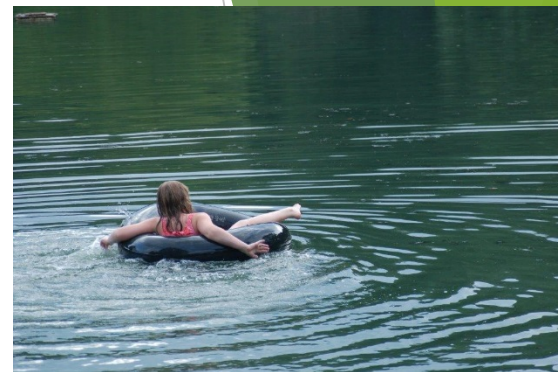
Current trends (cont):

2. Local/regional foods

- a. Energy savings
- b. Human health
- c. Local economies



Current trends (cont):



3. Sustainable ag investment

a. Ecosystem service markets

- a. Water
- b. Carbon

b. Public Investment



b. Impact investors

- i. Percent investing in food and agriculture: **63%**
- ii. Annual rate of increase: **32.5%**



Forest Farming



Silvopasture

USDA Investment in Agroforestry

- Executive Steering Committee
- Interagency Team
- Strategic Framework
- Programs
- Research

USDA National Agroforestry Center

Mission:

Advance the health, diversity, and productivity of working lands, waters, and communities through agroforestry



USDA Forest Service

- Research & Development
- State & Private Forestry

USDA Natural Resources
Conservation Service

Why are we here?

Why economics?



Economics on several levels

- Economic opportunities for practicing agroforestry
 - *Access to land and capital*
- Opportunities for gaining economic benefits from agroforestry:
 - Cooperatives
 - Markets
 - ✓ Products
 - ✓ Ecosystem services
 - ✓ Value-added processing
- Research
 - What we know
 - What is needed



What will we be doing?

- Presentations
- Large group discussion
- Small group discussion



Monday

Setting the stage through panels and open discussion

Producer perspectives

Victor Harris

- Reginaldo Haslett-Marroquin, Main Street Project, Minnesota
- Colin Muller, Muller Ranch, California
- Vickie Roberts-Ratliff, Shelton Roberts Properties, LLC, Mississippi
- Nate Olive, Ridge to Reef Farm, Virgin Islands
- Jacob Marty, Green Fire Farm, Wisconsin

Monday (cont.)

Economic factors affecting producer
access and decision-making

David Smith

- Marca Weinberg, USDA Economic Research Service
- Jay Variyam, USDA Economic Research Service

Tuesday Morning:

Panels, Large and Small Group Discussion



Theme 1: Accessing Resources

- Considerations for accessing land and capital, Larry Godsey, Missouri Valley College
- Land access and tenure, Keefe Keeley, Savanna Institute
- Private investment, Kevin Egolf, Iroquois Valley Farms LLC
- Public investment, Sarah Campbell, USDA Farm Service Agency



Tracy Coulter

Tuesday Afternoon

Panels, Large and Small Group Discussion



Theme 2: Accessing Markets

- Chris Chmiel, Integration Acres
- Mark Shepard, Forest Agriculture Enterprises LLC
- Emily Lachniet, Appalachian Sustainable Development





Wednesday Morning

Panels, Large and Small Group Discussion

Theme 3: Incentives and markets for ecosystem service benefits

- Incentives & markets for ecosystem service benefits, Jonas Epstein, USDA Forest Service
- Ecosystem service credits & markets, David Primozich, Freshwater Trust
- Payments for ecosystems services, Kelley Hamrick, Forest Trends
- Agroforestry and Virginia's Nutrient Trading Program, John Munsell, Virginia Tech

What will happen next?

- Synthesis of panels and sessions
- Production of draft workshop report
- Report review by workshop participants
- Final report



Windbreak



Alley Cropping



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Why are you here?
How will this workshop help you?
Do you have any questions?



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Thank you for
joining us!

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