
Appendix Section 1:

- Economic Budgeting for Agroforestry Practices
- Funding Incentives for Agroforestry in Missouri
- Tax Considerations for the Establishment of Agroforestry Practices

The following three Agroforestry in Action guides:

- *Economic Budgeting for Agroforestry Practices*
- *Funding Incentives for Agroforestry in Missouri*
- *Tax Considerations for the Establishment of Agroforestry Practices*

are available for viewing, printing or downloading from the University of Missouri Center for Agroforestry web site at www.centerforagroforestry.org.



Economic Budgeting for Agroforestry Practices

by **Larry D. Godsey**, *Economist, University of Missouri Center for Agroforestry*

Evaluation of the economic aspects of agroforestry provides a basis for estimating financial needs and feasibility, highlights trade-offs between multiple benefits, and monitors economic efficiency. The main technique used in economic analysis is budgeting.

Economic budgeting is a very flexible process. However, effective application of budgets requires an understanding of the commodity, practice or system to which it is being applied. Agroforestry poses some unique economic budgeting problems because it involves multiple enterprises with varying production cycles, such as trees, row crops, forages and/or livestock.

First, unlike most agricultural commodities, agroforestry has a “planning horizon” of greater than one season due to the tree component. A “planning horizon” is simply a time period in which all costs and revenues for a given practice are realized. For soybeans, a planning horizon may be six months to a year. For agroforestry, a simple planning horizon may be as long as 60-80 years when the timber value of trees are taken into consideration.

Unique characteristics of agroforestry

- *Long planning horizons;*
- *Irregular cost and revenue occurrences;*
- *Fixed tree component with variable crop or livestock component.*

Second, because of the long planning horizon of agroforestry practices, many of the revenues and costs do not occur at regular or predictable intervals throughout the entire planning horizon, but are irregular in occurrence.

Finally, because agroforestry practices typically incorporate a fixed tree component with a crop or livestock component, the crop or livestock component may change over time. For example, an alley cropping practice may start out as soybeans grown between rows of eastern black walnut trees, but by the time the trees are producing nuts, hay may be the crop grown between the rows

of trees because a smoother surface is required to mechanically harvest the nuts.

These three characteristics of agroforestry practices require a specific type of budgeting method that will be flexible enough to allow for variable crop and/or livestock components, as well as comprehensive enough to show annual cashflows for the entire planning horizon.

Agroforestry Budgeting

Agroforestry budgeting is a two-step process. The steps are to develop enterprise budgets and combine the enterprise budgets into a cashflow plan.

An enterprise budget is a complete, detailed listing of all the costs and revenues expected for each single enterprise, such as corn, livestock or nut and timber trees. A cashflow plan combines the details from the different enterprise budgets in the agroforestry practice and adds a time dimension. The enterprise budget provides a framework for reporting and monitoring the profitability of each enterprise, and the cashflow plan provides the information necessary to assess and forecast the economic feasibility of the agroforestry practice over time.

Developing the Enterprise Budgets

The development of an enterprise budget is a three-step process. The first step is to list all possible sources of revenue for an enterprise. For the tree component of an agroforestry practice, it is important to list not only the sources, but also list the timing of those revenues. For example, an alley cropping practice with eastern black walnut trees may receive Conservation Reserve Program (CRP) payments for the first 10 years of the planning horizon but not after that period. Income from nut production may start at year 10 or 12 and continue until the tree is harvested for wood in year 60.

The second step is to list, in detail, all possible sources of variable costs. Variable costs are those costs attributed to the productive use of resources. Variable costs can be grouped into cash and non-cash costs. Variable cash costs include payments for establishment, maintenance, harvesting and marketing. Variable non-cash costs do not require a cash outlay, but reflect



opportunity costs. Opportunity cost is simply the value of the next best alternative that is not chosen. For example, labor supplied by family members may not require a cash outlay, but could still be considered in the economic analysis.

Steps for Developing an Enterprise Budget

- List all possible sources of revenue;
- List all possible sources of variable costs (both cash and non-cash);
- List all possible sources of fixed costs (both cash and non-cash).

Reporting variable costs should include the source of the cost, the amount of the cost, and the time interval in which that cost will be incurred. For example, thinning trees may cost \$50 per acre and occur in years 21 and 25.

The third and final step to preparing an enterprise budget is to list all fixed costs. Fixed costs are typically those costs that are attributed to resource ownership. In other words, fixed costs occur regardless of any productive activity being attempted. Fixed cash costs usually include property taxes, insurance, interest on intermediate or long-term debt, and lease agreements. Fixed non-cash costs are important when developing an investment analysis, because these costs have significant influence on taxes. However, these costs are difficult to determine. Depreciation and land costs are the two main areas of fixed non-cash costs. Fixed costs may not change as often as the revenues and variable costs. In fact, any changes may be predictable, such as a 2 percent increase in property taxes every year. When reporting fixed costs, be sure and note the source, the amount and the estimated changes that will occur in the original amount.

Appendix A gives questions to consider for each step in enterprise budgeting. Appendix C is an example of an enterprise budget for an alley cropping practice using eastern black walnut. The enterprise budget reports all costs and revenues on a per acre basis. Species and spacing are clearly described so this budget will not be confused with other types of agroforestry practices.

From Enterprise Budgets to Cashflow Plans

Once enterprise budgets are created, a cashflow plan for the agroforestry practice can be developed. It is important to understand that an agroforestry practice may include more than one enterprise. For example, a well-established alley cropping practice may combine a tree enterprise with a hay and livestock enterprise. As mentioned earlier, often the tree enterprise is fixed while the crop or livestock enterprises vary over time.

Cashflow planning has two major characteristics that benefit agroforestry economic analysis:

- Allows for multiple enterprises to be considered;
- Incorporates a time dimension.

Using a cashflow plan in conjunction with enterprise budgets can simplify the process of economic analysis by allowing the enterprise budgets to reflect the detailed information and let the cashflow plans use minimal data to provide the analysis. Appendix B has questions to aid in cashflow planning while Appendix D is an example of a cashflow plan for an alley cropping practice that uses eastern black walnut along with bluegrass and white clover hay.

Common Indicators of Economic Performance

There are several common indicators used to analyze an agroforestry practice for economic performance. Supplementing these common economic indicators with some very basic indicators of economic performance can help both producers and

Examples of Agroforestry Revenues, Variable Costs and Fixed Costs

Revenues

Cost-share and CRP payments, nuts, biomass, grafted seedling sales, hunting rights, scionwood and cuttings, nature walks, timber (sawlogs, veneer logs, etc.), seedlings

Variable costs

Cash costs

Establishment: Site preparation (mechanical/chemical), seedlings, planting (labor and equipment), watering, staking

Maintenance: Fertilization, pest and disease control, grafting, thinning, pruning

Harvesting: Nut harvest, timber harvest

Marketing: Advertising, packaging, transportation

Non-cash costs

Family labor

Fixed costs

Cash costs

Property taxes, insurance, interest payments (intermediate debt), lease agreements, land - interest (Option 1)

Non-cash costs

Depreciation, land - opportunity cost (Option 2)

economists understand the economic performance of agroforestry practices.

A common economic analysis technique known as net present value (NPV) analysis can be conducted given the information provided in a good cashflow plan. Net present value is simply all future net income streams from the practice discounted to reflect their current or present value. Appendix E shows the formula for the calculation of NPV. This indicator is useful only as a basis for comparison. The net present value of the agroforestry practice can be compared to the net present value of other alternatives, such as a soybean monoculture, to see which practice is the most economically profitable. Assuming each practice is discounted using the same period of time and the same discount rate, the highest NPV would indicate the best alternative.

Common economic indicators

- *Net Present Value (NPV)*;
- *Internal Rate of Return (IRR)*;
- *Annual Equivalent Value (AEV)*.

The internal rate of return (IRR) is another common indicator of economic performance. The internal rate of return is the rate at which an investment is expected to grow. For example, a savings account pays 3 percent per year; therefore, an investor who puts money in a savings account is expecting to earn 3 percent on that investment. If an agroforestry practice has an IRR of 6 percent, then a rational investor would choose the agroforestry practice over the savings account earning 3 percent. However, the internal rate of return does not always capture the uncertainty of returns over time. Using the savings account example, an investor is assured that the money put into a saving account is relatively risk free; however, investment in agroforestry practices may face uncertainties that were not predicted or planned. Appendix E shows the calculations for deriving the IRR.

Another common indicator of economic performance that can be derived from a cashflow plan is the annual equivalent value (AEV). The annual equivalent value is an estimate of a level income stream that would have the same net present value as the actual income streams. Actual income streams for agroforestry practices may be positive one year and negative another; however, with the annual equivalent value, a level income estimate is established. The annual equivalent value can be used to compare alternative practices with the agroforestry practice to determine which practice has the highest expected income potential.

Supplemental Economic Indicators

All three of the common indicators can be used to evaluate the economic success of agroforestry practices. However, there are easier ways to help evaluate the economic feasibility of agroforestry practices without the complicated discounting equations.

Using a cashflow budget, three supplemental economic indicators can be derived:

- 1) *Frequency of negative cashflow;*
- 2) *Duration of negative cashflow;*
- 3) *Magnitude of positive and negative cashflows.*

The frequency of negative cashflow is simply determining the number of years in a planning horizon in which a practice will have a net loss. For many landowners, a practice that appears to be economically profitable according to a NPV analysis in the long run, may not be feasible due to several periods of net loss. Similar to frequency, duration of negative cashflow reflects the length of time that the practice returns a negative cashflow, or net loss. While frequency would describe a practice as having negative cashflow four out of 15 years, duration may indicate that three of those four years occurred consecutively. A landowner may not be concerned about having a negative cashflow occasionally. However, a continuous net loss may make a practice undesirable and infeasible.

The magnitude of positive and negative cashflow reflects the range of fluctuations that occur from year to year and throughout the planning horizon in net income. For example, one practice may have a very large net loss the first two years for startup costs, followed by several years of small net incomes. Over the long run, this practice may have a positive internal rate of return, but the periods of large net losses may make the practice infeasible. On the other hand, expected large net income in the future may make periods of small net losses tolerable.

The three supplemental indicators of frequency, duration and magnitude require no special training in finance or math and may have more influence on the decision process. The common indicators of net present value, internal rate of return and annual equivalent value are still important to help compare the agroforestry alternative to other possible alternatives. Using both types of economic indicators can help “fine tune” the economic analysis and aid in the decision process.

There are many other benefits to agroforestry besides those measured by economics. Environmental and social benefits also may have value to the decision maker. These benefits are often difficult to quantify. With economic analysis, these benefits can be considered in light of financial considerations.

Reassessment

Economic analysis is not meant to be – nor is it designed to be – a one-time activity. Economic analysis is designed to be a road map for a dynamic and living system. Reassessment takes the information gathered in the economic analysis and combines it with other information to change the original goals or fine tune the design so that it is more successful at meeting those goals. Reassessment is the continuous loop that helps redefine goals, adjust designs and modify indicators. Economic analysis is just one part of the reassessment loop.

Additional Resources

Training Manual for Applied Agroforestry Practices, University of Missouri Center for Agroforestry, 2006 Edition

Garrett, H.E. (ed.). 2009. North American Agroforestry: An Integrated Science and Practice. 2nd Edition. American Society of Agronomy, Inc., Madison, Wis.

Black Walnut Financial Model, available on the University of Missouri Center for Agroforestry Web site at <http://www.centerforagroforestry.org/profit/walnutfinancialmodel.asp>

Appendix A Agroforestry Enterprise Budgeting (Steps 1-4)

Step 1: Define the Enterprise

1. What practice is it? (alley cropping, silvopasture, riparian forest buffer, windbreak, forest farming)
2. What species? (common or scientific name)
3. What spacing? (30' x 30', 20' x 40', etc.)
4. What is the price basis? (\$/acre, \$/tree, \$/year, etc.)

Step 2: Estimate Revenues¹

1. What are all of the possible sources of revenue? (incentives, nuts, scionwood, etc.)
2. When are these revenues going to be earned? (years 1-10, after 10, after 60, etc.)

Step 3: Estimate Variable Costs (Operating Costs)

1. What are the costs to establish the practice? (site preparation, planting, etc.)
2. What are the costs to maintain the practice? (chemicals, grafting, thinning, etc.)
3. What will it cost to harvest? (nuts, timber, etc.)
4. What will it cost to market the products? (advertising, trans-

portation, spoilage, etc.)

5. Are there any variable non-cash costs?
6. When and how often will these costs occur?

Step 4: Estimate Fixed Costs (Ownership Costs)

1. What proportion of the property taxes can be attributed to the tree portion? (10 percent per acre in trees = 10 percent of per acre property tax)
2. What proportion of the property insurance bill can be attributed to the tree portion? (using machinery 10 percent of the time on trees = 10 percent of the per acre insurance bill)
3. Is there any interest being paid on capital? (interest on machinery debt, building debt, etc.)
4. What does it cost to own the land?² (current rental rates, interest payments on land, etc.)
5. Is there any capital that must be depreciated? (machinery, buildings, roads, etc.)
6. When and how often will these costs occur?

*1 When developing enterprise budgets for the tree component of an agroforestry practice, be sure to consider all possible sources of income.
2 The easiest method is the market cash rental method.*

Appendix B Agroforestry Cashflow Planning (Steps 1-6)

Step 1: Define the Practice

1. What practice is it? (alley cropping, silvopasture, riparian forest buffer, windbreak, forest farming)
2. What are the enterprises that make up the practice? (tree enterprise, crop and/or livestock enterprise)
3. Do the enterprise budgets match the practice? (spacing, species, trees per acre, etc.)
4. What price basis best represents all enterprises? (\$/acre, \$/bushel, \$/year)
5. What is the planning horizon for this practice? (10 years, 50 years, etc.)

Step 2: Calculate Annual Revenues

1. What are the total revenues each year for the tree enterprise? (year 1 = \$100, year 2 = \$50, etc.)
2. What are the total revenues each year for the crop or livestock component?¹ (year 1 = \$100, year 2 = \$50, etc.)
3. What are the total revenues each year for the tree, crop and/or livestock enterprises? (combine the annual tree and crop/livestock revenues)

Step 3: Calculate Annual Variable Costs

1. What are the total variable costs each year for the tree enterprise? (year 1 = -\$75, year 2 = -\$50, etc.)
2. What are the total variable costs each year for the crop or livestock component? (year 1 = -\$100, year 2 = -\$25, etc.)
3. What are the total variable costs each year for the tree, crop and/or livestock enterprises? (combine the annual tree and crop/livestock variable costs)

Step 4: Calculate Annual Fixed Costs

1. What are the total fixed costs each year for the tree enter-

prise? (year 1 = -\$15, year 2 = -\$15, etc.)

2. What are the total fixed costs each year for the crop or livestock component? (year 1 = -\$25, year 2 = -\$25, etc.)
3. What are the total fixed costs each year for the tree, crop and/or livestock enterprises?² (combine the annual tree, crop and/or livestock fixed costs)

Step 5: Calculate Net Income for Each Year

1. Total Revenues - Total Variable Costs - Total Fixed Costs = Net Income

Step 6: Analyze the Results

1. What is the net present value (NPV) of the calculated annual net incomes?
2. What is the internal rate of return (IRR) of the calculated annual net incomes?
3. What level payment (annuity) would have the same net present value at the same discount rate used above?³
4. What is the frequency of negative income occurrences (3 out of 10 years, 7 out of 10 years, etc.)
5. What is the duration of the negative incomes occurrences? (3 years in a row, 5 years in a row, etc.)
6. What is the magnitude of the negative income? (how large is the income deficit,⁴ how large is the deficit compared to expected future incomes, etc.)

*1 Crop and livestock enterprise budgets can be developed using similar enterprise budgeting methods as the tree component.
2 The total fixed costs for any practice should not exceed the amount that would be expected if all the assets set idle. If there is a difference, that difference would be a variable cost.
3 This is often called the annual equivalent value (AEV).
4 Deficit – a situation when expenses are greater than revenues.*

Agroforestry Enterprise Budget

Revenues	Amount		Time Interval	Variable Cash Costs	Amount		Time Interval
Cost Share Payments	\$ -			1. Establishment			
CRP	\$62.00		Year 1-10	a. Site Preparation	\$36.00		Year 1
Seedlings Sold	\$ -			Mechanical			
Grafted Seedlings Sold	\$ -			Chemical	\$ -		
Scionwood / Cuttings Sold	\$ -			b. Fertilizer			
Nuts (Yield will increase at 3% for 10 years)	\$255.00		Year 11-60	N-P-K	\$40.00		Year 1
Biomass	\$ -			Lime	\$18.00		Year 1
Hunting Rights	\$ -			c. Planting			
Nature Walks	\$ -			Seedlings (RPM Grafted)	\$312.00		Year 1
Timber (Thinnings)	\$1,200.00		Year 21	Labor	\$90.00		Year 1
Timber (Sawlogs, veneer logs, etc.)	\$1,000.00		Year 60	Equipment	\$6.00		Year 1
				d. Watering	\$ -		
				e. Staking	\$96.00		Year 1
Fixed Cash Costs				2. Maintenance			
Property Tax	\$0.40		Years 1-60	a. Fertilization (\$6.60 Yr 2-3/ \$10.20 Yr 4-6)	\$6.60		Year 2-6
Insurance	\$0.20		Years 1-60	b. Pesticide/Fungicide	\$100.00		Year 11-60
Interest Payments	\$ -			c. Herbicide	\$12.50		Year 1-10
Leases	\$15.00		Years 11-60	d. Mowing	\$ -		
Management	\$1.40		Years 1-60	e. Thinning	\$50.00		Year 21
Fixed Non-Cash Costs				f. Pruning	\$4.00		Year 4-10
Depreciation	\$ -			3. Harvesting			
Land	\$9.00		Years 1-60	a. Nut Harvest	\$74.00		Year 11-60
				b. Timber Harvest			
				4. Marketing			
				a. Advertising	\$ -		
				b. Transportation	\$ -		
				Variable Non-Cash Costs	\$ -		

Practice: Alley Cropping
Species: Black Walnut

Price Basis: \$/acre/year
Spacing: 30x30

Agroforestry Cashflow Plan

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Revenues											
Tree: Eastern Black Walnut	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$255.00
Crop: Hay	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$120.00
Total revenues:	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$62.00	\$375.00
Variable Costs											
Tree: Eastern Black Walnut	\$650.50	\$19.10	\$19.10	\$26.70	\$26.70	\$26.70	\$44.50	\$44.50	\$44.50	\$44.50	\$202.00
Crop: Hay	\$34.50	\$30.00	\$30.00	\$44.50	\$30.00	\$30.00	\$30.00	\$44.50	\$30.00	\$30.00	\$60.00
Total Variable Costs:	\$685.00	\$49.10	\$49.10	\$71.20	\$56.70	\$56.70	\$74.50	\$89.00	\$74.50	\$74.50	\$262.00
Fixed Costs											
Tree: Eastern Black Walnut	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$26.00
Crop: Hay	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00
Total Fixed Costs:	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$60.00
Net Income/(loss)	\$(668.00)	\$(32.10)	\$(32.10)	\$(54.20)	\$(39.70)	\$(39.70)	\$(57.50)	\$(72.00)	\$(57.50)	\$(57.50)	\$53.00
NPV @ 10%	(\$449.04)										
Internal Rate of Return	6.432%										
Annual Equivalent Value	\$45.72										

Practice: Alley Cropping
Species: Black Walnut
Crop: Hay

Price Basis: \$/acre/year
Spacing: 30x30

Agroforestry Cashflow Plan

	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Revenues										
Tree: Eastern Black Walnut	\$263.00	\$271.00	\$279.00	\$287.00	\$296.00	\$305.00	\$314.00	\$323.00	\$333.00	\$343.00
Crop: Hay	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00
Total revenues:	\$383.00	\$391.00	\$399.00	\$407.00	\$416.00	\$425.00	\$434.00	\$443.00	\$453.00	\$463.00
Variable Costs										
Tree: Eastern Black Walnut	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00
Crop: Hay	\$64.50	\$60.00	\$60.00	\$60.00	\$64.50	\$60.00	\$60.00	\$60.00	\$64.50	\$60.00
Total Variable Costs:	\$266.50	\$262.00	\$262.00	\$262.00	\$266.50	\$262.00	\$262.00	\$262.00	\$266.50	\$262.00
Fixed Costs										
Tree: Eastern Black Walnut	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00
Crop: Hay	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00
Total Fixed Costs:	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00
Net Income/(loss)	\$56.50	\$69.00	\$77.00	\$85.00	\$89.50	\$103.00	\$112.00	\$121.00	\$126.50	\$141.00

Practice: Alley Cropping
Species: Black Walnut
Crop: Hay

Price Basis: \$/acre/year
Spacing: 30x30

Agroforestry Cashflow Plan

	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	Year 31
Revenues										
Tree: Eastern Black Walnut	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00
Crop: Hay	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00
Total revenues:	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00
Variable Costs										
Tree: Eastern Black Walnut	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00
Crop: Hay	\$60.00	\$60.00	\$64.50	\$60.00	\$60.00	\$60.00	\$64.50	\$60.00	\$60.00	\$60.00
Total Variable Costs:	\$262.00	\$262.00	\$266.50	\$262.00	\$262.00	\$262.00	\$266.50	\$262.00	\$262.00	\$262.00
Fixed Costs										
Tree: Eastern Black Walnut	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00
Crop: Hay	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00
Total Fixed Costs:	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00
Net Income/(loss)	\$141.00	\$141.00	\$136.50	\$141.00	\$141.00	\$141.00	\$136.50	\$141.00	\$141.00	\$141.00

Practice: Alley Cropping
Species: Black Walnut
Crop: Hay

Price Basis: \$/acre/year
Spacing: 30x30

Agroforestry Cashflow Plan

	Year 43	Year 44	Year 45	Year 46	Year 47	Year 48	Year 49	Year 50	Year 51	Year 52
Revenues										
Tree: Eastern Black Walnut	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00
Crop: Hay	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00
Total revenues:	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00
Variable Costs										
Tree: Eastern Black Walnut	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00
Crop: Hay	\$60.00	\$64.50	\$60.00	\$60.00	\$60.00	\$64.50	\$60.00	\$60.00	\$60.00	\$64.50
Total Variable Costs:	\$262.00	\$266.50	\$262.00	\$262.00	\$262.00	\$266.50	\$262.00	\$262.00	\$262.00	\$266.50
Fixed Costs										
Tree: Eastern Black Walnut	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00
Crop: Hay	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00
Total Fixed Costs:	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00
Net Income/(loss)	\$141.00	\$136.50	\$141.00	\$141.00	\$141.00	\$136.50	\$141.00	\$141.00	\$141.00	\$136.50

Practice: Alley Cropping
Species: Black Walnut
Crop: Hay

Price Basis: \$/acre/year
Spacing: 30x30

	Year 53	Year 54	Year 55	Year 56	Year 57	Year 58	Year 59	Year 60
Revenues								
Tree: Eastern Black Walnut	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$343.00	\$1,343.00
Crop: Hay	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00	\$120.00
Total revenues:	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$463.00	\$1,463.00
Variable Costs								
Tree: Eastern Black Walnut	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00	\$202.00
Crop: Hay	\$60.00	\$60.00	\$60.00	\$64.50	\$60.00	\$60.00	\$60.00	\$64.50
Total Variable Costs:	\$262.00	\$262.00	\$262.00	\$266.50	\$262.00	\$262.00	\$262.00	\$266.50
Fixed Costs								
Tree: Eastern Black Walnut	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00	\$26.00
Crop: Hay	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00
Total Fixed Costs:	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00
Net Income/(loss)	\$141.00	\$141.00	\$141.00	\$136.50	\$141.00	\$141.00	\$141.00	\$1,136.50

Practice: Alley Cropping
Species: Black Walnut
Crop: Hay

Price Basis: \$/acre/year
Spacing: 30x30

Appendix E: Calculations

Net Present Value (NPV) is an estimate of the current value of all future incomes from an investment. To determine net present value, future net incomes or net losses, called cashflows, must be discounted to reflect the fact that a dollar today will purchase more than a dollar in the future.

$$NPV = cashflow_0 + cashflow_1 \left[\frac{1}{(1+i)^1} \right] + cashflow_2 \left[\frac{1}{(1+i)^2} \right] + \dots + cashflow_n \left[\frac{1}{(1+i)^n} \right]$$

Where:

NPV = Net Present Value

cashflow_n = net income or net loss for the year “n,” for example *cashflow₁* is the net income from the first full year of production.

i = discount rate, or the opportunity cost of investing. For example, the dollars could have been invested in the stock market with an expected return of 14 percent instead of being invested in an agroforestry practice, therefore, the opportunity cost of the agroforestry practice would be 14 percent.

n = number of years included in the budget.

Internal Rate of Return (IRR) uses the same equation as net present value; however, instead of solving for the NPV, an arbitrary NPV of \$0 is assumed. The discount rate becomes the unknown variable in the equation. The “*i*” now represents the rate at which all discounted cashflow will equal zero. Or, in other words, the rate at which future incomes will return the initial investment (*cashflow₀*).

$$0 = cashflow_0 + cashflow_1 \left[\frac{1}{(1+i)^1} \right] + cashflow_2 \left[\frac{1}{(1+i)^2} \right] + \dots + cashflow_n \left[\frac{1}{(1+i)^n} \right]$$

Since *cashflow₀* is not affected by the variability of the discount factor, it is moved to the other side of the equation.

$$- cashflow_0 = cashflow_1 \left[\frac{1}{(1+i)^1} \right] + cashflow_2 \left[\frac{1}{(1+i)^2} \right] + \dots + cashflow_n \left[\frac{1}{(1+i)^n} \right]$$

Annual Equivalent Value (AEV) modifies the equation used in the other two indicators. The AEV calculates an annuity (or an annual set payment) that would give the equivalent net present value at the same discount rate. The equation used in the NPV calculation assumes varying cashflows for each year. The AEV equation assumes that the cashflow is the same each year; therefore, the equation can be modified as follows:

$$NPV = Cashflow \left[\sum_{t=1}^n \frac{1}{(1+i)^t} \right]$$

To calculate the AEV using this equation, the *NPV*, *n*, and *i* must be known. The *cashflow* is the annual equivalent value that is being calculated. The above equation can be manipulated as follows:

$$Cashflow = \left[\frac{NPV}{\sum_{t=1}^n \frac{1}{(1+i)^t}} \right]$$

Although this looks like a difficult equation, the summation portion (annuity discount factor) of the equation can be simplified as follows:

$$\sum_{t=1}^n \frac{1}{(1+i)^t} = \frac{1}{i} - \frac{1}{i(1+i)^n}$$

To show how this equation works, let's assume that we have budgeted for an agroforestry practice using the enterprise and cashflow plans described in this paper. Assuming that the opportunity cost of investing in this practice is 8 percent and the planning horizon is 50 years, we calculated that the $NPV_{(8\%, 50)}$ is \$1,200. To calculate the AEV, all we need to do is estimate the annuity discount factor shown above and divide that factor into the NPV.

$$\frac{1}{.08} - \frac{1}{.08(1+.08)^{50}} \rightarrow 12.5 - \frac{1}{.08(46.902)} \rightarrow 12.5 - \frac{1}{3.752} \rightarrow 12.5 - 0.2665 \rightarrow \underline{12.233}$$

$$Cashflow = \frac{NPV}{12.233} \rightarrow \frac{\$1,200}{12.233} = \underline{\$98.00}$$

This indicates that the series of cashflows expected with this practice have the same net present value as an annuity that pays \$98 per year. This does not, however, reflect the variability of those cashflows or the time it takes to start generating positive cashflows.

Most spreadsheet programs have these equations programmed in. However, it is good to understand what the equation is doing and what the indicator is telling you. Misinterpreted financial indicators can lead to bad decisions.



Produced by the
University of Missouri Center for Agroforestry

Shibu Jose, Ph.D., Director
203 ABNR Columbia, MO 65211

Technology Transfer and Outreach Unit

Michael Gold, Ph.D., Associate Director
Larry D. Godsey, Economist
Dusty Walter, Technical Training Specialist
Julie Rhoads, Events Coordinator
Michelle Hall, Sr. Information Specialist

 **Center for Agroforestry**
University of Missouri

For more information, visit www.centerforagroforestry.org
573-884-2874; umca@missouri.edu

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Funding Incentives for Agroforestry in Missouri

by Larry D. Godsey
Economist, University of Missouri Center for Agroforestry

Agroforestry describes a set of land use practices that incorporate trees, shrubs, forages, crops and/or livestock designed in a way that provide environmental, social, and economic benefits. Agroforestry practices help landowners to diversify products, markets, and farm income; improve soil and water quality; and reduce erosion, non-point source pollution and damage due to flooding. The integrated practices of agroforestry enhance land and aquatic habitats for fish and wildlife and improve biodiversity while sustaining land resources for generations to come. The five recognized agroforestry practices are : 1) alley cropping, 2) windbreaks, 3) riparian buffers, 4) silvopasture, and 5) forest farming.

This publication is designed to help landowners and natural resource professionals find appropriate sources of funding for establishing and maintaining agroforestry practices. The financial success of agroforestry practices does not depend on the availability of government funding programs, nor should it. However, the funding programs noted in this publication were developed as incentives for good stewardship and, when properly designed and managed, agroforestry is good stewardship. Although there are more funding programs than described in this document, the programs listed represent federal, state, and private sources with the greatest application to agroforestry.

Changes in farm policy resulting from the 2002 Farm Bill are included in this publication and they may be subject to further change as the details of that policy are worked out over the next few years. For more detailed and up-to-date policies, contact the listed agencies sponsoring each program.



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1. Federal Funding Incentives for Agroforestry

Most federal funding for agroforestry is administered through United States Department of Agriculture agencies, including the Farm Service Agency (USDA/FSA), Natural Resource Conservation Service (USDA/NRCS), Forest Service (USDA/FS) and the Sustainable Agriculture Research and Education program (SARE). Other federal funding for agroforestry can come from the United States Fish and Wildlife Service (USFWS). Some federal funding programs are joint efforts with State agencies such as the Missouri Department of Conservation (MDC) and the Missouri Department of Agriculture (MDA). Figure 1 lists the federal funding programs and the agencies that support them. Figure 17, presented at the back of this publication, provides a detailed list of federal funding incentives by practice/benefit.

1.1 USDA/FSA Incentive Programs for Agroforestry

The USDA/FSA has three major programs that can be used to establish and maintain agroforestry practices on private land. They are the Conservation Reserve Program (CRP), the Continuous Conservation Reserve Program (CCRP) and the Conservation Reserve Enhancement Program (CREP) in partnership with each state. Each of these programs is designed to take environmentally sensitive and highly erodible land out of production by offering a soil rental payment, cost-share for the establishment of various conservation practices, and other financial incentives to landowners who offer to set aside their land.



Figure 1: Federal funding incentives and their sources that support landowner adoption of agroforestry practices.

1.1.1 Conservation Reserve Program (CRP)

The Conservation Reserve Program (CRP) is a voluntary program of land retirement that offers annual soil rental rate (SRR) payments, cost-share payments and annual maintenance payments. Annual SRR payments are based on the local average cash rental rates. Cost share payments cover up to fifty percent of the cost to establish conservation practices. Maintenance payments of \$5 per acre are paid annually in addition to the soil rental payments (Figure 2). Conservation practices (CP's) funded through CRP that involve tree planting include:

- CP3A Hardwood tree planting,
- CP4B Wildlife corridors,
- CP4D Wildlife habitat,
- CP11 Tree cover - established,
- CP25 Rare and declining habitat:
oak savanna restoration,
bottomland forest restoration.

The hardwood tree planting practice (CP3A) will allow the landowner to recover a portion of the tree planting costs. The minimal requirement for stand density is 302 stems per acre. The acreage planted to the CP3A can be "rolled over" into the established tree cover practice (CP11). This allows landowners to continue earning an annual soil rental payment and an annual maintenance payment while the trees are growing.

Wildlife corridors (CP4B) and wildlife habitats (CP4D) promote restoration of warm season grasses and woody vegetation for the benefit of wildlife. As a minimum requirement, CP4B and CP4D areas must be at least 66 feet wide and include at least 10 percent woody vegetation. Maximum width for both practices is 198 feet.

Finally, the restoration of rare and declining habitats (CP25) allows for the establishment of oak savannas

and riparian forests. For the restoration of the oak savanna, the minimum tree spacing is 30' x 30', or 48 trees per acre. Trees must comprise at least 10 percent of the field but not more than 50 percent, with a mix of oak, persimmon, and hickory. Restoring riparian forests only applies to land that is adjacent to perennial streams or land already enrolled as a CP22 riparian buffer or a CP25 riparian forest. Tree stocking rates and species follow the same guidelines as the CP3A hardwood tree planting practice and are identified in NRCS Standard 612.

For more information about CRP, contact your local USDA/FSA office.

1.1.2 Continuous Conservation Reserve Program (CCRP)

The CCRP is a voluntary program that focuses on funding CP's protecting environmentally sensitive land, including wetlands and riparian areas. Landowners with eligible land who wish to enroll that land in the CCRP may sign-up at any time during the year. Available funding through the CCRP can include:

- annual soil rental rate payments that can be up to 120 percent of the average soil rental rate for the area,
- annual maintenance payments of \$5 to \$10 per acre,
- cost share payments up to 50 percent of the establishment cost.

CRP	CCRP
Soil Rental Rate (SRR)	Soil Rental Rate (SRR) - up to 120 percent of the local average soil rental rate
50 percent Cost Share	50 percent Cost Share
Maintenance - \$5	Maintenance - between \$5 and \$10 Signing Incentive Payment (SIP) Practice Incentive Payment (PIP)

Figure 2: Payments and incentives available through CRP and CCRP for agroforestry.

Along with the three payments mentioned above, CCRP also has two one-time incentive payments available for certain CP's, including:

- a signing incentive payment (SIP) equal to \$10 per acre per number of contract years,
- a practice incentive payment (PIP) equal to 40 percent of the establishment costs.

Figure 2 highlights the CRP and CCRP payments and incentives.

There are 16 practices that are eligible for the CCRP. However, out of the 16, only eight allow for tree planting, including:

- CP5A Field windbreaks
- CP9 Shallow water areas
- CP16A Shelterbelts
- CP22 Riparian buffers
- CP23 Wetland Restoration
- CP29 Wildlife Habitat buffer on marginal pastureland
- CP30 Wetland buffer on marginal pastureland
- CP31 Bottomland timber establishment on wetlands

Field windbreaks designed and funded under CP5A are eligible for SIP, PIP, 120 percent SRR, and annual maintenance payments (Figure 3). The maximum width for field windbreaks in Missouri is one tree row. Tree species and spacing within the tree row is determined by the desired purpose of the windbreak. Design characteristics for field windbreaks are specified in NRCS Standard 380.

Riparian buffers have become a priority for most USDA agencies. Under the requirements of the CCRP's riparian forest buffer practice (CP22), landowners must establish at least a two-zone buffer. The total width of the riparian forest buffer will vary depending on the size of the stream and landowner objectives. For first and second order streams, the buffer must be at least 50 feet wide and cannot exceed 180 feet. Buffers along third order streams must be at least 100 feet wide. Riparian forest buffers along the Missouri and Mississippi Rivers may be increased to 300 feet. Buffers may be

Field Windbreaks (CP5A)

- 10-15 year contracts
- Continuous Sign-up
- SIP, PIP, and 120 percent SRR
- \$7 per acre per year maintenance payments
- Maximum width of one row for Missouri

Figure 3: Brief description of the CCRP funding and design characteristics that support the establishment of field windbreaks (CP5A)

extended beyond 180 feet or 300 feet for the purpose of improving water quality benefits. Figure 4 gives a brief description of the funding and design characteristics of the riparian forest buffer (CP22) practice. NRCS Standard 391 identifies the guidelines for establishing a riparian forest buffer for the CCRP.

The restoration of wetlands (CP23) allows for some tree planting. However, wetland areas must be restored to their original vegetation, thus, if the area being restored consists of grassland soils, then the area must be returned to grassland.

Riparian Forest Buffer (CP22)

- 10- to 15-year contracts
- Continuous CRP
- Eligible for the following CRP financial incentives
 - 120 percent SRR
 - 50 percent regular cost share
 - SIP
 - PIP
 - \$7-\$10 maintenance
- Width requirements (1st and 2nd order streams)
 - Grass zone: 25 feet max.
 - Minimum buffer width: 50 feet
 - Maximum buffer width: 180 feet
- Width requirements (3rd order streams)
 - Grass zone: 25 feet max.
 - Minimum buffer width: 100 feet
 - Maximum buffer width: 180 feet

Figure 4: Brief description of the CCRP funding and design characteristics that support the establishment of riparian forest buffers (CP22)

The shallow water area practice (CP9) consists of an area no larger than ten acres used to capture and hold water. The depth of the water cannot exceed an average of 18 inches. The area of shallow water must be surrounded by a buffer area between 20 and 120 feet in width. This buffer may be designed using the guidelines for the CP22 riparian buffer practice.

Shelterbelts (CP16A) can be used to protect farmsteads or livestock. Design characteristics allow for a 2- to 4-row shelterbelt for a farmstead or feed lot. For wildlife protection, a 5- to 10-row shelterbelt may be established.

The wetland restoration (CP23) and bottomland timber establishment on wetlands (CP31) practices are used to restore wetland ecosystems that have been under agricultural use. These practices support planting of hardwood and shrub species adapted to wet conditions. The wildlife habitat buffer on marginal pastureland (CP29) and wetland buffer on marginal pastureland (CP30) practices can help landowners plant trees and shrubs on marginal pasturelands. The incentives and buffer dimensions are similar in size to those associated with riparian buffers (CP22).

For more information about the CCRP, contact your local USDA/FSA office.

Missouri CREP Counties		
Adair	Daviess	Montgomery
Andrew	Dekalb	Nodaway
Bates	Gentry	Pettis
Barton	Harrison	Pike
Benton	Howard	Putnam
Buchanan	Johnson	Ralls
Caldwell	Knox	Randolph
Cass	Lafayette	Ray
Chariton	Lewis	Schuyler
Clark	Linn	Scotland
Clay	Macon	Shelby
Clinton	Monroe	Sullivan

Figure 5: Counties included in the Missouri Conservation Reserve Enhancement Program

1.1.3 Conservation Reserve Enhancement Program (CREP)

The conservation reserve enhancement program (CREP) is a joint Federal - State land retirement conservation program targeted to address local, state, and nationally significant agriculturally related environmental concerns. CREP is designed to reduce by 50 percent the risk of

CREP Practices

- Introduced grasses and legumes (CP1)
- Native grasses and legumes (CP2)
- Hardwood tree planting (CP3A)*
- Wildlife habitat (CP4D)*
- Contour grass strips (CP15A)
- Filter strips (CP21)
- Riparian forest buffers (CP22)*
- Wetland restoration (CP23)*

*Permit tree planting

Figure 6: Practices that are eligible for CREP funding

nutrients and sediment from farms entering the streams and reservoirs that supply rural water supplies to over 375,000 people. Missouri's goal is to retire 50,000 acres of highly erodible and environmentally sensitive land in 36 counties (Figure 5).

CREP is a voluntary program encouraging farmers and ranchers to enroll in CRP practices that address sediment run-off and water quality concerns by providing five financial incentives in addition to payments available through CRP. The additional financial incentives include:

- Signing Incentive Payment (SIP),
- Practice incentive payment (PIP),
- Soil rental rate increase of 15 percent or 25 percent of the dryland cash rental rate,
- State cost-share assistance (25 percent),
- State lump sum, one-time incentive equal to 150 percent of the annual rental rate.

There are eight practices eligible for the MO-CREP (Figure 6). Out of the eight eligible practices, four allow for tree planting, including CP3A, CP4D, CP22, and CP23. The first five

practices in Figure 6 pay 115 percent of the average soil rental rate, and the last three pay 125 percent.

CREP contracts are 14- to 15-year (contract length depends on sign-up time) and land enrollment follows the same guidelines as the CCRP enrollment. Marginal pastureland does not qualify for the MO-CREP.

For additional information on the MO-CREP, contact your local USDA/FSA office.

1.2 USDA/NRCS Funding Incentives for Agroforestry

The USDA/NRCS has four main programs that offer funds for tree planting and agroforestry. They are the Environmental Quality Incentives Program (EQIP), the Wildlife Habitat Incentive Program (WHIP), the Wetland Reserve Program (WRP) and the Conservation Security Program (CSP). In conjunction with the funding programs noted, the USDA/NRCS also provides technical assistance to landowners who are interested in conservation planning and application.

1.2.1 Environmental Quality Incentives Program (EQIP)

EQIP was created by the 1996 Farm Bill and combines the functions of the Agricultural Conservation Program (ACP), Water Quality Incentives Program (WQIP), and a couple of programs used primarily in the western United States. Funding through EQIP, directed states to establish designated, specific, targeted watersheds known as Conservation Priority Areas (CPA's) along with a state-wide program; however, the 2002 Farm Bill eliminated CPA's and made EQIP funds available state-wide. The State of Missouri has identified ten primary concerns to be addressed by EQIP funding. They are:

- Nutrient and pest management,
- Animal waste management,
- Health of grazing lands,
- Soil quality,
- Wildlife habitat,
- Forest health and management,

- Water conservation,
- Soil erosion,
- Stream bank protection,
- Expanded wildlife habitat management.

Sixty percent of the annual EQIP funding is designated for environmental concerns associated with livestock production. Landowners engaged in livestock or agricultural production can apply for 1- to 10-year contracts through a competitive application process based on environmental benefits. Eligible lands include cropland, rangeland, pasture, forestland, and other farm and ranch lands. Conservation practices are designed with the help of USDA/NRCS and other agencies to address the locally-identified priority resource concerns. EQIP contracts provide cost-share payments up to 50 percent of the establishment cost for conservation practices. Limited-resource farmers and ranchers may be eligible for up to a 75 percent cost-share.

Agroforestry Practices Funded by EQIP

1. Alley Cropping - \$50 payment per acre for up to 3 years on the land planted to trees and grass strip adjacent to trees. No more than 50 percent of the cropland can be enrolled.
2. Riparian Forest Buffers - \$50 per acre per year for up to 3 years.
3. Windbreak/Shelterbelt Establishment - a one-time incentive payment of \$0.10 per linear foot.

Figure 7: Agroforestry practices funded through EQIP

Additional incentive payments may be available for up to three years in order to support the use and management of the new conservation practice.

Specific agroforestry practices that can be funded through EQIP include: alley cropping, riparian forest buffers, and windbreak/shelterbelt establishment (Figure 7). For the alley cropping practice, funding incentives include a \$50-per-

acre payment for three years on the acres planted to trees and the grass buffer strip adjacent to the trees. These incentives can be paid on up to 50 percent of the acres in any cropland field.

For the establishment of riparian forest buffers, landowners may receive up to \$50 per acre on grassland or existing woodland located adjacent to permanent or intermittent streams, lakes, ponds, wetlands, and areas with ground water recharge. Using EQIP funds for riparian forest buffers on cropland is not recommended due to the availability of substantial funding in CCRP for riparian forest buffers on cropland.

EQIP will assist landowners who wish to establish a windbreak/shelterbelt by paying a one-time incentive payment of \$0.10 per linear foot.

EQIP also has funding available for certain practices that are not specifically considered agroforestry, but could indirectly assist landowners who are considering agroforestry. These practices are:

Forest harvest trails and landings - a flat rate cost-share used for the rehabilitation of areas frequently and intensively used in timber harvesting (\$300 for the first 20 acres, then \$15 for each additional acre).

Forest site preparation - a flat rate cost-share payment available for preparing sites for natural regeneration or tree and shrub planting (\$10 per acre for cropland sites and \$15 per acre for light preparation, \$40 per acre for medium preparation, and \$65 per acre for heavy preparation on non-cropland sites);

Forest stand improvement - flat rate cost-share payments are available for improving forest health and management through removal of competing vegetation (\$25 per acre for light improvement, \$40 per acre for medium improvement, and \$55 per acre for heavy improvement);

Tree/shrub establishment - 50 percent cost share for planting woody species, chemical or mechanical weed control measures for the first 5 years, tree shelters, weed barriers, root dips, fertilizer, and other animal damage control devices, fencing, and seedbed preparation;

Upland wildlife habitat management (Savanna restoration) - 50 percent cost-share payment for woody control, removal of individual trees that are not accessible to mechanical methods, and permanent forest openings which require some woody species removal.

The availability of this funding, potential contingencies and the applicability of each of these programs to specific on-farm goals, should be discussed with your local USDA/NRCS agent.

1.2.2 Wetland Reserve Program (WRP)

WRP is a voluntary land retirement program designed to establish and improve wetland areas. Three options are available to landowners, including: 1) a permanent land easement, 2) a 30-year land easement, and 3) a restoration cost-share agreement (Figure 8).

Under the permanent easement option, USDA/NRCS pays 100 percent of the costs of restoration and buys a perpetual land easement. The land easement is purchased at a value that is equal to the lesser of the agricultural value of the land, an established payment cap, or an amount offered by the landowner. The 30-year easement option pays 75 percent of the restoration costs and USDA/NRCS buys a 30-year easement at 75 percent of the value that would have been paid for a permanent easement. Finally, the restoration cost share option is a 10-year agreement that pays up to 75 percent of the costs for restoring degraded wetland habitat.

Wetland Reserve Program Options	
Permanent Easement	<ul style="list-style-type: none">• 100 percent cost-share for restoration• 100 percent land easement payment
30-year Easement	<ul style="list-style-type: none">• 75 percent cost-share for restoration• 75 percent land easement payment
Restoration Cost Share	<ul style="list-style-type: none">• 75 percent cost-share for restoration• 10-year agreement

Figure 8: Three options available through the Wetland Reserve Program (WRP)

Restoration of wetlands includes the planting of trees and shrubs. However, the trees and shrubs planted must be commonly found in wetland areas.

Land enrolled in the WRP still can be used for hunting, fishing, and other undeveloped recreational activities. In some cases, WRP land may even be grazed, cut for hay or harvested for wood products, providing wetland values are maintained.

To qualify for the permanent or 30-year easement, a landowner must have owned the land at least one year prior to enrolling in the WRP. However, to qualify for the restoration cost share, a landowner needs only to show proof of ownership.

Most farmed wetlands are eligible for WRP. However, ineligible land includes wetlands converted after Dec. 23, 1985; lands with timber stands established with CRP; federal lands; and lands where restoration is impossible.

1.2.3 Wildlife Habitat Incentive Program (WHIP)

WHIP is a program designed to develop and improve wildlife habitat on private land. Under

WHIP, the landowner and USDA/NRCS enter into a 5- to 10-year agreement that pays the landowner up to 75 percent of the cost to establish wildlife habitat practices, and allows USDA/NRCS agents the right to monitor the success of those practices. Forest land practices that qualify for WHIP funding include forest stand improvement, prescribed burning, woody cover removal (prairies and savannas), and wildlife herbaceous cover plantings. For agroforestry, the practices supported by WHIP can put existing timber stands under management which can lead to forest farming.

1.2.4 Conservation Security Program (CSP)

CSP, established by the 2002 Farm Bill, is designed to provide payments to producers for adopting or maintaining a wide range of management, vegetative, and land-based structural practices that address one or more resources of concern, such as soil, water, or wildlife habitat. Cropland, grazing land, and forest land that is an incidental part of the agricultural operation is eligible for the CSP program. However, cropland must have been cropped 4 out of 6 years prior to 2002. Lands enrolled in CRP, WRP, or the grass-

Conservation Security Program “Tiers” of Participation

- Tier I
Address one resource concern on a portion of the farm
5-year contracts (certain requirements for renewal),
Payment equal to 5 percent of average land rental for the specific land use,
50% cost share for adoption or maintenance of conservation practices,
\$20,000 payment limit per year.
- Tier II
Address one resource concern on entire farm
5- to 10-year contracts (renewable),
Payment equal to 10 percent of average land rental for the specific land use,
50% cost share for adoption or maintenance of conservation practices,
\$35,000 payment limit per year.
- Tier III
Address all resource concerns on entire farm
5- to 10-year contracts (renewable),
Payment equal to 15 percent of average land rental for the specific land use,
50% cost share for adoption or maintenance of conservation practices,
\$45,000 payment limit per year.

Figure 9: Summary description of the Conservation Security Program (CSP) tiers.

lands reserve program are not eligible. Animal waste storage or treatment facilities are also ineligible for the CSP.

Producers can participate in the CSP at one of three levels (tiers). Higher tiers require a greater conservation effort and offer greater payments. Figure 9 describes the conservation effort and the funding levels for each of the three tiers for the CSP.

Payments consist of a base payment and a cost share payment. The base payment is a percentage of the national per-acre average land rental rate for the specific land use, or another appropriate rate that ensures regional equity. The cost share is equal to 50 percent of the average county cost of adopting or maintaining practices.

The CSP also offers enhanced payments if the landowner uses multiple conservation practices; addresses local conservation priorities; participates in on-farm conservation research, demonstration, or a pilot project; is part of a watershed or regional resource conservation plan involving at least 75 percent of the producers in that area; or carries out assessment and evaluation activities for the conservation security plan.

None of the practices identified in the CSP are specifically agroforestry practices; however, agroforestry practices can be incorporated into the conservation security plan in order to meet the goals of certain practices. For example, one particular practice mentioned is conversion of a portion of cropland from a soil-depleting to a soil-conserving use. This soil conservation can be accomplished by using a well designed agroforestry practice.

CSP is available to landowners in specified watersheds only. For more information about CSP, contact your local USDA/NRCS office.

1.3 USDA/FS Incentive Program for Agroforestry

The USDA/FS has one program that supports private land management and agroforestry prac-

tices. The Forest Land Enhancement Program (FLEP) is a new program established by the 2002 Farm Bill that emphasizes sustainable management of private woodlots and other nonindustrial forested acres.

1.3.1 Forest Land Enhancement Program (FLEP)

The 2002 Farm Bill repealed the often underfunded Forestry Incentive Program (FIP) and the Stewardship Incentive Program (SIP), which were established by the Cooperative Forestry Assistance Act of 1978. In their place, the 2002 Farm Bill created the Forest Land Enhancement Program (FLEP). The program has seven major objectives including enhancing the implementation of agroforestry practices.

Specific activities and practices for Missouri that would qualify for up to a 75 percent cost share are;

1. the development of management plans,
2. afforestation and reforestation, including; tree and shrub establishment, woodland site prep, woody and herbaceous vegetation control, bottomland/wetland restoration,
3. forest stand improvement, including; woody vine control and woody vegetation control,
4. agroforestry implementation, including; alleycropping, shelterbelt/windbreak establishment and tree/shrub pruning,
5. water quality improvement and watershed protection, including; riparian woodland buffers, stream bank restoration and fencing,
6. fish and wildlife habitat improvement, including; prescribed burning, early successional management, herbaceous vegetation establishment and tree/shrub establishment,
7. forest health and protection, including woody vine and vegetation control,
8. invasive species control
9. fire and catastrophic risk reduction,
10. fire and catastrophic event reduction,
11. special practices, including; demonstration

sites, harvest prescription and timber marketing and restoration of fire-dominated forest communities.

Of the listed practices, top priority is given to practices 2 through 5 above.

To be eligible for the cost-share, you must be a non-industrial private forest landowner with at least 10 acres. Also, you must work with a state forester, another state official, or a professional resources manager to develop and implement a management plan that addresses site-specific activities and practices. Each nonindustrial private forest landowner can incorporate up to 1,000 acres into FLEP (this can be increased to 5,000 acres if the Secretary of Agriculture, in consultation with the state forester, determines that there are significant benefits from the acreage increase).

This USDA/FS program is administered through MDC. This program was not funded in 2004. For more information about FLEP, contact your local MDC office.

1.4 Sustainable Agriculture Research and Education Program (SARE) Funding Incentives

SARE funds are designed to help increase farmer and rancher knowledge and adoption of practices that are “economically viable, environmentally sound, and socially responsible.” SARE assigns funds based on a competitive grants program. Proposals submitted for funding through SARE are peer reviewed by regional administrative councils. Regional administrative councils are made up of diverse groups of producers, farm consultants, university researchers and administrators, state and federal government agency staff and representatives from non-profit organizations. Missouri is part of the North Central Region.

1.4.1 SARE Research and Education, Professional Development and Producer Grants

SARE has three types of funding. They are: 1) research and education grants; 2) professional development program grants; and 3) producer grants. Figure 10 gives a brief summary of the basics of each funding type.

Of the three funding types available through SARE, only one, the producer grant, is aimed at the landowner. Landowners who submit accepted proposals can receive up to \$15,000 to establish and maintain the sustainable practice that they propose. For groups of three or more landowners who develop a proposal together, funding is available for up to \$18,000. Partners or family members farming the same tract of land do not qualify as a group.

Agroforestry practices can be economically viable, environmentally sound and socially responsible. Therefore, landowners who want to adopt agroforestry practices can apply for SARE funding. However, due to the competitive grant process, there is no guarantee that a landowner’s proposal will be accepted. To find out more

SARE Funding Types
1. Research and education grants <ul style="list-style-type: none">• led by universities or nonprofit organizations• generally range from \$30,000 - \$200,000
2. Professional development program grants <ul style="list-style-type: none">• sponsor professional development training for Cooperative Extension, NRCS, and other agricultural professionals
3. Producer grants <ul style="list-style-type: none">• provide funds for landowners conducting on-farm research or demonstration projects• grants typically run between \$500 and \$15,000• three or more legally separate producers may receive up to \$18,000

Figure 10: Three types of funding programs administered by the Sustainable Agriculture Research and Education program (SARE).

about SARE producer grant applications and tips on how to write a winning proposal, visit SARE's website at www.sare.org/ncrsare, or contact the staff of the North Central Region SARE at:

*North Central Region SARE
University of Nebraska - Lincoln
13A Activities Building
P.O. Box 830840
Lincoln, NE 68583-0840
(402) 472-7081 email: ncrsare@unl.edu*

1.5 USFWS Partners for Fish and Wildlife (PFW) Funding Incentive

The PFW Program emphasizes native habitat restoration on an ecosystem and landscape scale, including riparian corridors, in-stream habitat, wetlands, upland native grasslands, and others. The goal of PFW is to help conserve, protect and enhance fish, wildlife, plants, and their habitats. A voluntary program, PFW focuses on restoring native vegetation to areas that have been affected by intensive land-use practices. Stream habitat restoration projects are prioritized based on imperiled species which are in greatest need of habitat restoration. For Missouri, these species include: Topeka shiner, Niangua darter, scaleshell mussel, Ozark cavefish, Neosho mucket, Arkansas darter, and Neosho madtom.

Landowners who wish to participate in this program must voluntarily agree to maintain/manage the habitat in its restored condition for no less than 10 years. The USFWS will provide at least 75 percent of the costs to restore the project area. If landowners agree to maintain/manage the area for additional years, the cost-share could reach as much as 95 percent. Cost-share funds are provided for native trees, shrubs, grasses, fencing, alternative watering sources for livestock, and contracted labor.

For more information on the PFW program, contact your local MDC Private Land Conservationist or the USFWS in Columbia, Missouri, toll free: 1-877-275-9134 .

2. State Funding Incentives for Agroforestry

In Missouri, three agencies provide the majority of the available state funding in support of agroforestry. These agencies are the Missouri Department of Agriculture (MDA), the Missouri Department of Conservation (MDC), and the Missouri Department of Natural Resources (DNR) (Figure 11).

2.1 Missouri Department of Agriculture Incentive Programs for Agroforestry

The Missouri Department of Agriculture (MDA) has one main program that can be used to establish agroforestry practices: the Alternative Loan Program.

2.1.1 Alternative Loan Program

The MDA offers direct loans through the Agriculture Development Fund to finance the production, processing, and marketing needs of an alternative agricultural enterprise. Alternative loans can be for up to \$20,000, with an interest rate of 7.5 percent and maximum term of 5 years with semi-annual payments.

Alternative agricultural enterprises that would be common in agroforestry settings include horticultural production and marketing; tree farming, shrubs and landscaping plants; fee hunting; apiaries; and value added enterprises such as processing equipment and packaging. Other projects that are funded include organic production enterprises; portable greenhouses, and irrigation equipment. This list is only a sample of possible enterprises.

The purpose of the alternative loan program is to promote entrepreneurial thinking, therefore, there is a great deal of flexibility as to what can be funded. MDA does recommend that potential borrowers check resources, talk to others, look for something in demand, visit markets and observe what is selling, attend conferences and workshops, read and plan.

For more information on the Alternative Loan Program, contact:

*Missouri Department of Agriculture
Market Development Division
Agriculture Development Fund Program
P.O. Box 630
Jefferson City, MO 65102
Phone: (573)751-4762*

2.2 Missouri Department of Conservation Incentive Programs for Agroforestry

The Missouri Department of Conservation (MDC) is a valuable resource for landowners who wish to adopt agroforestry. Much of the help offered by MDC is in the form of technical advice and partnerships with other agencies. However, MDC does have two programs that offer financial incentives to landowners who wish to adopt agroforestry practices. These two programs are called the Missouri Agroforestry Program and the MDC Cost Share Program. Availability of funds for these and other MDC programs are dependent upon year-to-year state budget constraints.

Missouri State Funding Incentives for Agroforestry

Missouri Department of Agriculture (MDA)

- Alternative Loan Program

Missouri Department of Conservation (MDC)

- Missouri Agroforestry Program
- MDC Cost Share Program

Missouri Department of Natural Resources

- Soil and Water Conservation Program (SWCP) Cost Share
- Agricultural Non-Point Source (AgNPS) Special Area Land Treatment Program (SALT) Grants

Figure 11: Funding Incentives for agroforestry offered through Missouri state agencies

2.2.1 *The Missouri Agroforestry Program*

The Missouri Agroforestry Program was established in 1990 with the passage of the Missouri Economic Diversification and Afforestation Act. This act was amended in 2001 with the passage of House Bill 904. The program is designed to compliment an existing or new Conservation Reserve Program (CRP) plan by providing financial assistance to share the cost (up to 75 percent) of establishing the trees and/or shrubs to be used in an agroforestry management program. Similar to CRP, enrollment in this program also entitles landowners to receive an annual incentive payment for up to 10 years. The amount of the incentive payment made to the landowner will be the lesser of:

1. an amount which when added to any cash or in-kind net income produced by crops raised on the land, is substantially equal to the amount per acre previously paid or would have been paid to the landowner under the CRP program; or
2. an amount less than that provided in 1 above, if such lesser amount does not significantly reduce the number of acres for which agroforestry incentive payments are made.

In other words, landowners are expected to pursue alternative market opportunities that are made available through the establishment of agroforestry practices. Therefore, they are allowed to generate income from the trees, shrubs or alternative crops. In years where no income from these alternative products is earned, the landowner will receive an incentive payment equal to the amount received as a soil rental payment from CRP. For example, if CRP would have paid the landowner \$65 per acre as a soil rental payment, then the program would pay the landowner \$65 per acre. Participants who are successful at generating an income from their alternative products may still receive an annual incentive payment. However, the annual incentive payment will be equal to the anticipated CRP soil rental payment (for example, the \$65 per acre soil rental payment) minus the net

income per acre earned through the marketing of alternative products.

Agroforestry practices that are covered by the Missouri Agroforestry Program include alley cropping, forested-riparian buffers, silvopasture, and windbreaks. To participate in the program, a written application must be submitted to the MDC. Landowners who qualify for this program will work closely with MDC personnel to ensure that the practice meets design and establishment criteria. Eligible lands include highly erodible land that has an erodibility index equal to or greater than eight over at least one-third of the designated field. Highly erodible land that has been enrolled in CRP on or after 1990 is also eligible.

Currently, the Missouri Agroforestry Program is not funded and may be subject to the limited application periods of the CRP regular sign-up. However, the State of Missouri is working on providing funds for this program.

2.2.2 *MDC Cost Share Program*

The MDC Cost Share Program offers cost share funds to private landowners who are not enrolled in any other federal or state incentive program. There are two areas of the Cost Share Program that can be applied to agroforestry: 1) MDC 700 tree/shrub establishment (Figure 12); and 2) MDC 900 woodland improvement (Figure 13). Both of these areas offer a 75 percent cost share on all approved practices, unless a flat fee has been established for the practice

The tree and shrub establishment practice (MDC 700) allows landowners to plant native trees and shrubs where needed for conservation purposes such as reforestation, watershed protection, wildlife habitat, erosion control, pollution control, filter or buffer strips, and energy conservation. Orchards and Christmas tree plantations are not eligible. MDC will pay a flat rate or a 75 percent based on approved component costs up to a total of \$15,000 per landowner per year, inclusive of all cost-shared practices. Cost share funds can be used to cover the costs of

nursery stock, root production method (RPM) seedling establishment, planting, weed control, site preparation for natural and artificial regeneration, and seeding. In return for the cost share assistance, landowners must maintain the plantings for a minimum of 15 years following the installation of all required practices. From an agroforestry standpoint, these funds could be used to establish riparian buffers and windbreaks.

MDC 700 Tree/Shrub Establishment

- 75 percent cost share for:
nursery stock
RPM seedling establishment
planting
weed control
site preparation
seeding
- 15-year agreement
- Orchards, Christmas tree plantations, and land enrolled in CRP are not eligible

Figure 12: Summary of the MDC 700 tree/shrub establishment cost share program.

The woodland improvement practice (MDC 900) can be used to improve timber production, wildlife habitat and forest health. Cost share funds can be used to offset the cost of thinning, chemicals used to remove competing vegetation, pruning, and crop tree release. Three different levels of thinning can be applied based on the basal area (BA) that is being removed:

- light thinning (20-30 BA)
- medium (30-40 BA)
- heavy (>40 BA).

Funds cannot be used for commercial thinning, Christmas tree plantings, or orchards. Livestock and grazing must be excluded from the treated acreage. Landowners can receive up to 75 percent reimbursement on projects costing up to \$5000 each year, and all practices must be maintained for at least 10 years. The MDC 900 cost share funds can be used to prepare an existing timber stand for a forest farming practice if approved by a MDC resource professional.

MDC 900 Woodland Improvement

- Pays for thinning, pruning, chemicals and crop-tree release
- 75% cost share
- \$3,750 maximum annual payment per project
- 10-year agreement
- Does not apply to commercial thinning
Christmas tree plantings, or orchards
- Does not allow livestock grazing

Figure 13: Summary of the MDC 900 woodland improvement practice.

2.3 Missouri Department of Natural Resources Incentive Programs for Agroforestry

The Missouri Department of Natural Resources (DNR) has two programs funded through the Soil and Water Conservation Program (SWCP) that can be used to offset the costs of establishing and maintaining certain agroforestry practices. These programs include a State SWCP cost share and the Agricultural Nonpoint Source (AgNPS) Special Area Land Treatment (SALT) program grants.

2.3.1 State SWCP Cost Share

The State Soil and Water Conservation Program (SWCP) cost share is a program funded by a portion of the Missouri Parks and Soils Sales Tax. Landowners who implement approved soil and water conservation practices that conserve soil, and consequently improve water quality by reducing sedimentation, may receive up to 75 percent cost share for the establishment of these practices.

There are numerous practices listed that are eligible for cost share; however, only one of the practices has direct application for agroforestry. Forest plantation (DFR-4) allows landowners to plant trees on marginal sites in order to encourage less intensive use and to reduce soil erosion. The stated goal of this practice is to convert marginal land into woodland. Cost share is authorized for :

- Seed or seedlings, seedbed preparation and seeding or planting.

- Field fencing to exclude livestock from woodland that lies within an existing functional interior or property line fence.
- Site preparation that is necessary to level gullies to accommodate a mechanical tree planter. Site preparation should not be used simply to clear or remove undesirable tree species so that desirable species can be planted.

Planting of orchard trees, ornamental trees and Christmas trees is not authorized for cost share funding. For land to be eligible, it must be subject to excessive erosion or have slopes of greater than 10 percent.

2.3.2 Agricultural Non-point Source (AgNPS) Special Area Land Treatment (SALT) Program

The Special Area Land Treatment (SALT) program is another element of the Soil and Water Conservation program that provides financial assistance to landowners who are willing to implement best management practices (BMP's) on their land for the purpose of improving water quality. Originally, the SALT program only focused on reducing water pollution caused by sedimentation resulting from erosion of agricultural land. The Agricultural Non-point Source SALT (AgNPS/SALT) program is the latest version of the SALT program and is designed to reduce all forms of agricultural non-point source pollution, including sedimentation.

The AgNPS/SALT program awards grants of up to \$750,000 to Soil and Water Conservation Districts (SWCD's) that identify priority watersheds that are suffering degradation caused by agricultural non-point source pollution problems. Local SWCD's can apply for one of these grants by identifying a

watershed needing protection, and setting goals by prioritizing BMP's to lessen the impacts of water quality impairments related to agricultural production. The purpose of the AgNPS/SALT program is to provide the resources for local people to identify and solve local problems.

Landowner's within the selected watersheds may apply to the local SWCD's to receive a cost share of up to 75 percent for the establishment of priority BMP's. In addition to the forest plantation (DFR-4) practice described in the SWCD cost share program, acceptable agroforestry BMP's include riparian forest buffers (N391) and windbreak/shelterbelt establishment (N380) (Figure 14).

Riparian forest buffers (N391) can be established on areas adjacent to permanent or intermittent streams, public drinking water reservoirs, and wetlands and ground water recharge areas. Cost share is offered at 75 percent of county average cost or actual cost for establishment of those components technically necessary to certify the practice according to NRCS standards. An out-of-production incentive payment may be authorized on a per acre, per year, basis not to

Agroforestry Practices Supported by AgNPS/SALT

- Forest Plantations
 - Up to 75 percent cost share
 - Pays for seeds, seedling, site prep, and field fencing
 - Does not include orchard plantings
- Riparian Forest Buffers
 - Up to 75 percent cost share
 - Out-of-production incentive payment may be authorized
 - 10-year agreement
- Windbreak/Shelterbelt
 - Only approved in seven counties in Missouri
 - Up to 75 percent cost share
 - One time incentive payment of \$1.50 per foot, per row
 - 10-year agreement

Figure 14: Three agroforestry practices funded by the AgNPS/SALT program

exceed 3 years per participant. The landowner must maintain the practice in accordance with NRCS standards and specifications for 10 years.

Windbreak/shelterbelt establishment (N380) can be approved for areas in Butler, Scott, Stoddard, Mississippi, New Madrid, Dunklin, or Pemiscot counties where woody plants are suited. The purpose of establishing a windbreak/shelterbelt is to reduce soil losses from wind erosion, protect plants and improve irrigation efficiency to maintain water quality.

Applicants must develop and apply a management plan based on NRCS standards for at least one of these stated purposes. Approved plans can receive up to a 75 percent cost share of the county average cost or actual cost, whichever is less, of the components technically required to install the practice. Along with the cost share, a one-time incentive payment of \$1.50 per foot, per row, of windbreak/shelterbelt is authorized for approved plans. The landowner must maintain the practice in accordance with NRCS standards and specifications for 10 years.

3. Private Funding Sources for Agroforestry

Besides the funding available through Federal and State programs, landowners may also wish to check for opportunities from private organizations (Figure 15). Numerous private organizations offer grants, cost-share and equipment-on-loan for landowners who are improving wildlife habitat with timber stand improvement or by planting shrubs, trees and forages. Examples of these private organizations include the National Fish and Wildlife Foundation (NFWF), the National Wild Turkey Federation (NWTf), Quail Unlimited (QU), Ducks Unlimited (DU) and Pheasants Forever (PF).

3.1 The National Fish and Wildlife Foundation (NFWF) Grant Programs

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, 501(c)(3) tax-exempt organization established by Congress in 1984. NFWF works to foster cooperative partnerships to conserve fish, wildlife and plant resources through the use of Challenge Grants. NFWF grants are called “Challenge Grants” because funding is based on an applicant’s ability to generate additional sources of funding. These additional funds generated by the grantee are called “Challenge Funds.” Challenge funds must be:

- Non-federal in origin (federally appropriated or managed funds cannot be used to

- match a Foundation grant);
- Derived from sources other than the project grantee (i.e., third party);
- Raised and dedicated specifically for the project in question;
- Applied only to the Foundation grant and not to other federal matching programs.

Many grants are available through NFWF; however, two grant programs have implications for private-land agroforestry. They are the Native Plant Conservation Initiative in partnership with the Plant Conservation Alliance (PCA), and Conservation on Private Lands in partnership with NRCS.

3.1.1 The Native Plant Conservation Initiative

The Plant Conservation Alliance (PCA) in partnership with the National Fish and Wildlife Foundation (NFWF) offers a challenge grant program that promotes funding for the benefit of declining native plant species. The NFWF will match Challenge Funds at a 1:1 ratio (i.e. one dollar of non-federal funds will be matched with one dollar of federal funds). The call for proposals begins in early June and closes in mid-August. Successful grants are those seeking funding for projects that:

- Provide plant conservation benefits,
- Provide benefits to multiple species,
- Have direct benefits to plants, fish, wildlife and other biotic resources on public lands,
- Have multiple and innovative partnerships, demonstrate the ability to find matching funds exceeding the minimum 1:1 federal/non-federal requirement,
- Use innovative ideas, such as landscape approaches, shareable new technologies, and teaching by example opportunities, achieve a variety of resource management objectives,
- Meet NEPA, Section 7 ESA, or other legal requirements and have all necessary permits and clearances.

<p>Private Funding Sources for Agroforestry</p> <p>National Fish and Wildlife Foundation (NFWF)</p> <ul style="list-style-type: none">-Native Plant Conservation Initiative-Conservation on Private Lands <p>National Wild Turkey Federation (NWTf)</p> <p>Quail Unlimited (QU)</p> <p>Ducks Unlimited (DU)</p> <p>Pheasants Forever (PF)</p>

Figure 15: Private funding sources for agroforestry

3.1.2 Conservation on Private Lands

The NFWF has partnered with the NRCS to provide a challenge grant that promotes effective conservation and stewardship on private lands. This particular challenge grant recommends that the applicant find additional funding at a 2:1 ratio. In other words, for every two dollars in non-federal funds, goods, or services, one dollar will be awarded by the Foundation. Qualified projects must meet the following criteria:

- Conservation on Working Landscapes - projects that integrate conservation practices in ongoing agriculture, ranching and forestry operations; and projects that link NFWF Challenge Grants with larger NRCS programs such as WRP, CRP and EQIP.
- Demonstrated Value for Fish and Wildlife - projects must clearly define the conservation problem that is being addressed and explain how the project will provide measurable benefits for fish and wildlife.
- Partnerships - projects must demonstrate diverse partnerships among a variety of stakeholders, with special emphasis on projects that unite conservation and agricultural interests.
- Leverage - projects must meet the minimum 1:1 match ratio, with a 2:1 match ratio strongly encouraged.
- On-The-Ground - projects must have a strong “on-the-ground” component, although capacity building, community development and other goals may be included.
- Landscape Scale - projects that address agricultural conservation at a watershed or landscape scale will be given preference.
- Immediacy of Need - projects must demonstrate a clear need for funding and proposals should define a time-line for implementation (which should be less than 1 year).

For more information about these two Challenge Grant programs, contact the National Fish and Wildlife Foundation at:

<http://www.nps.gov/plants/nfwf/index.htm>

http://www.nfwf.org/programs/grant_apply.htm

or contact NFWF at (202) 857-0166.

3.2 National Wild Turkey Federation Funding Incentives

The National Wild Turkey Federation (NWTf) is a private organization that promotes scientific wildlife management on public, private and corporate lands as well as wild turkey hunting as a traditional North American sport. Members of the NWTf may purchase tractor-trailer loads of seed for the cost of shipping through the Conservation Seed Program for habitat improvement projects. The Wild Turkey Woodlands program provides opportunities for landowners who actively manage their farms, ranches or woodlands for wild turkey and other wildlife to purchase seed and seedlings at a reduced cost. For more information about the NWTf contact the organization at:

*The National Wild Turkey Federation
Post Office Box 530
Edgefield, SC 29824-0530
1-800-THE-NWTf
<http://www.nwtf.org>.*

3.3 Quail Unlimited Funding Incentives

Quail Unlimited (QU) is a national, non-profit conservation organization dedicated to the wise management and conservation of America’s wild quail as a valuable and renewable resource. Local QU chapters raise funds for local habitat and education projects, state wildlife departments, upland game bird management, habitat research and education programs. QU organizations are involved in:

- Challenge Grants with the NFWF,
- Answer the Call, a partnership program with the USFS emphasizing quail management throughout the U.S.,
- Quail Habitat Improvement Programs, that

provide local chapters with free seed, low cost trees/shrubs, equipment on loan. QU supports numerous other habitat improvement practices.

To find out more about Quail Unlimited, contact your local chapter, Or write to:

Quail Unlimited National Headquarters
31 Quail Run or P. O. Box 610
Edgefield, SC 29824
Phone: (803) 637-5731
Fax: (803) 637-0037
<http://www.qu.org>

3.4 Ducks Unlimited Funding Incentives

Ducks Unlimited (DU) is a private conservation group that was started about 65 years ago by a group of sportsmen and has become the largest wetland and waterfowl conservation organization in the world. DU offers a variety of programs to restore grasslands, replant forests, and restore watersheds. These programs are designed to:

- help landowners enroll in government-subsidized easement and set-aside programs;
- purchase and distribute, on-loan, planting equipment for replanting natural grasses on lands no longer used for agriculture;
- plant hardwood seedlings in the Mississippi Alluvial Valley;
- restore drained wetlands, protect stream corridors, and establish buffer strips.

DU works in partnership with landowners, federal agencies and other private agencies to implement their programs. Their programs include:

- purchasing land, restoring land and donating land to agencies that will manage it for wildlife;
- purchasing perpetual conservation easements;
- offering financial incentives to landowners who agree to manage their land for waterfowl and other wetland wildlife for a period of 10 years;

-challenge grants that provide landowners with cost share through the North American Wetlands Conservation Act (NAWCA) of 1989.

For more information about programs offered by DU, visit their website at <http://www.ducks.org>, or write to:

Ducks Unlimited, Inc.
One Waterfowl Way
Memphis, TN, 38120
Phone: 1-800-45DUCKS or (901) 758-3825

3.5 Pheasants Forever Funding Incentives

Pheasants Forever (PF) is a private, non-profit conservation organization founded in 1982 in response to a declining ring-necked pheasant population. PF is dedicated to the protection and enhancement of pheasant and other wildlife populations in North America through habitat improvement, land management, public awareness, and education. Such efforts benefit landowners and wildlife alike. PF's unique system of county chapters allows 100 percent of net funds raised by chapters to remain at the chapter level for local habitat projects.

Local PF chapters raise money to support five habitat restoration programs. These five programs are:

- food plots,
- nesting cover,
- woody cover,
- land purchases,
- wetland restoration.

For more information about PF and programs that are available, contact your local PF chapter, visit on the web at <http://www.pheasantsforever.org>, or write to:

Pheasants Forever
1783 Buerkle Circle
St. Paul, MN 55110
Phone: (651)773-2000
or toll free: 1-877-773-2070

Federal Funding Incentives by Practice/Benefit

Agency/Program

Practice/Benefit

	Alley Cropping	Riparian Buffers	Wind-breaks	Silvo-pasture	Forest Farming	Timber Stand Improvement	Tree Planting	Wildlife
USDA/FSA								
Conservation Reserve Program (CRP)							CS,LE,M	CS,LE,M
Continuous Conservation Reserve Program (CCRP)		CS,LE,IP,M	CS,LE,IP,M					
Conservation Reserve Enhancement Program (CREP)		CS,LE,IP,M					CS,LE,IP,M	CS,LE,IP,M
USDA/NRCS								
Environmental Quality Incentives Program (EQIP)	IP	IP	IP				CS	CS
Wetland Reserve Program (WRP)		CS,LE					CS,LE	CS,LE
Wildlife Habitat Incentive Program (WHIP)					CS			CS
Conservation Security Program (CSP)	CS,LE	CS,LE	CS,LE	CS,LE				CS,LE
USDA/FS								
Forest Land Enhancement Program (FLEP)	CS	CS	CS	CS		CS	CS	CS
SARE								
Producer Grants	G	G	G	G	G	G	G	G
USFWS								
Partners for Fish and Wildlife (PFW)		CS					CS	

CS = Cost Share (ranges from 50% to 90%, based on a predetermined expected cost structure)

LE = Land Easement (Rental payments based on an average rental rate per land use type; easements are typically 5, 10, 15, 30 years or permanent)

M = Annual maintenance payments (range from \$5 - \$10 per acre)

IP = Additional incentive payments (payments could include sign-up bonuses, additional cost-share, and/or increased land easement rates)

G = Grants

State and Private Funding Incentives by Practice/Benefit

Agency/Program	Practice/Benefit									
	Alley Cropping	Riparian Buffers	Wind-breaks	Silvo-pasture	Forest Farming	Timber Stand Improvement	Tree Planting	Wildlife		
MDA Alternative Loan Program					X					
MDC Missouri Agroforestry Program	CS,LE	CS,LE	CS,LE	CS,LE						
MDC Cost Share Program						CS	CS			
DNR Soil and Water Conservation Program (SWCP) Cost Share							CS			
Agricultural Non-Point Source (AgNPS)Special Area Land Treatment Program (SALT) Grants		CS,IP	CS,IP				CS			
NFWF Native Plant Conservation Initiative Conservation on Private Lands									CG	CG
NWTF Member Programs							CS			
QU Member Programs							CS			
DU Member Programs		CS,LE					CS			
PF Member Programs		CS,G				CS,G				

CS = Cost Share (ranges from 50% to 90%, based on a predetermined expected cost structure; or relates to a reduced cost for seeds or seedlings)

IP = Additional incentive payments (payments could include sign-up bonuses, additional cost-share, and/or increased land easement rates)

G = Grants

CG = Challenge Grants (applicants must generate additional sources of funding)

X = General applicability (indirectly applies to a specific benefit)

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**Produced by the University of Missouri
Center for Agroforestry**

Gene Garrett, Ph.D., Director

Technology Transfer and Outreach Unit

Michael Gold, Ph.D., Associate Director

Larry D. Godsey, Economist

Dusty Walter, Technical Training Specialist

Julie Rhoads, Events Coordinator

Rachel McCoy, Sr. Information Specialist

Phone: 573-884-2874 email: umca@missouri.edu

www.centerforagroforestry.org



Tax Considerations for the Establishment of Agroforestry Practices

by *Larry D. Godsey, Economist, University of Missouri Center for Agroforestry*

Agroforestry is an integrated set of land management practices that helps land and forest owners to diversify products, markets and farm income, while simultaneously improving soil and water quality, enhancing wildlife habitat and sustaining land resources for long-term use. The five practices of agroforestry — alley cropping, silvopasture, riparian forest buffers, forest farming and windbreaks — offer a landowner opportunities for long-term income from areas that may not be currently utilized.

However, federal tax incentives may provide the greatest benefit to some landowners. Accordingly, agroforestry tax advantages can also be derived from four areas: 1) reforestation; 2) business investment; 3) conservation tax laws; and 4) long-term capital gains. These four areas of the Internal Revenue Code (IRC) are reviewed in this document.

According to the Internal Revenue Service (IRS), a farm business is defined as "... the trade or business of cultivating land or raising or harvesting any agricultural or horticultural commodity. This includes "... raising or harvesting of trees bearing fruits, nuts, or other crops. ..." In other areas of the IRC, the IRS specifically says "you are not farming if you are engaged only in forestry or the growing of timber." This seems to complicate the position of the taxpayer who has adopted agroforestry practices for the production of both agricultural commodities and timber. However, because agroforestry consists of raising trees and agricultural commodities, tax advantages for the agroforester can come from both forestry and farming incentives.

Reforestation Incentives

Tax law changes in 2004 phased out the section 48 reforestation tax credit, but increased the advantages from the section 194 reforestation deduction. Reforestation costs up to \$10,000 that are incurred on or before October 22, 2004, are still eligible for the reforestation tax credit and reforestation amortization deduction. However, reforestation costs that are incurred after October 22, 2004, are now subject to the new rules in section 194.

Section 194

Section 194 of the IRC describes the reforestation deduction and the amortizable basis deduction. This incentive is directed towards "commercial timber production" and is applicable to agroforestry. Under section 194, the taxpayer may deduct (expense) up to \$10,000 (\$5,000 if married and filing separately) per qualified property per year of reforestation expenditures and amortize the remaining expenditures over an 84-month period. This change eliminates the \$10,000 amortization deduction limit.

As an example, suppose a landowner spends \$30,000 in 2009 on qualified reforestation costs, then they may deduct \$10,000 and amortize the remaining \$20,000. Table 1 (next page) shows the annual percentage deduction for an 84-month amortization period. The total deductions from this reforestation would be as follows:

- *Year 1: \$10,000 recorded on Schedule F (Form 1040) line 34a-f (Other expenses) as an itemized deduction, \$1,428.57 ($\$20,000 \times 1/14$) recorded as "qualified forestation and reforestation costs" on line 42 of Form 4562.*
- *Years 2-7: \$2,857.14 ($\$20,000 \times 1/7$) per year, recorded as "qualified forestation and reforestation costs" on Form 4562.*
- *Year 8: \$1,428.57 ($\$20,000 \times 1/14$) recorded as "qualified forestation and reforestation costs" on Form 4562.*

When filling out Form 4562, a separate sheet of paper should be attached for each property with the following information:

- *A description of the costs and the dates they were incurred;*
- *A description of the type of timber being grown and the purpose for which it is being grown.*

This form needs to be filed on a timely basis, including extensions, in the year in which the expenses are incurred. However, if the taxpayer did not choose to take the deduction on a timely filed return, but decides to take the deduction later, it is still possible. The taxpayer may file an amended return within six months of the due date of the original return, not including extensions.



Table 1: Annual Reforestation Amortization Deduction Percentage	
Year of Deduction	Percentage of Amortizable Reforestation Expenses Deducted
Year 1	1/14 or 7.14%
Years 2-7	1/7 each year or 14.29% each year
Year 8	1/14 or 7.14%

Figure 1 (above right) details what the IRS considers “qualified forestation and reforestation costs.” This deduction does not apply to Christmas tree production, ornamental tree production, trees planted solely to produce nuts or fruit, shelterbelts or windbreaks. The reforested area must be at least one acre in size and located in the United States.

The goal of this program is timber production. Growing trees for purposes other than timber production would not qualify for the reforestation deduction and amortization basis deduction. For example, eastern black walnut trees planted in an alley cropping practice can benefit from the reforestation amortization deduction if the trees are maintained in such a way that 1) a marketable butt log will be harvested in the future; and 2) timber production is the primary purpose of the plantation. Any nut crop would be an incidental enterprise that would be taxed as ordinary farm income. Expenses that are incurred in the harvesting and marketing of the nut crop would be deducted as ordinary farm expenses.

As mentioned earlier, “commercial timber production” would have to be the focus of the agroforestry practice for it to qualify for the reforestation amortization deduction. The IRS recognizes a written forest management plan as one way of indicating a focus on “commercial timber production.”

Business Investment Incentives

As a landowner engaged in an active farming or forestry business, section 179 of the IRC provides a special deduction for personal property. Personal property that is used more than 50 percent in a farming or forestry business qualifies for the deduction.

Section 179¹

Section 179 of the IRC provides a taxpayer with the option of deducting the cost of certain qualifying property in the year it was placed in service instead of taking the annual depreciation deductions. Under the rules of the section 179 deduction, a taxpayer may elect to deduct costs up to \$250,000 for personal property that is used in an active trade or business. Since agroforestry often involves active participation in the business of growing crops, livestock, or timber, the section 179 deduction should be considered. The deduction cannot exceed total taxable income from all sources in the year that the qualifying property is

Figure 1: IRS Qualified Reforestation Expenditures

“Direct costs incurred in connection with forestation or reforestation by planting or artificial or natural seeding, including costs -

- (i) for the preparation of the sites;
- (ii) of seed or seedlings; and
- (iii) for labor and tools, including depreciation of equipment such as tractors, trucks, tree planters, and similar machines used in planting or seeding.”

(Internal Revenue Code: Title 26, Subtitle A, Chapter 1, Subchapter B, Part VI, section 194)

put into service. Therefore, the deduction is the smaller of total taxable income or \$250,000. If total taxable income is less than \$250,000, then the difference between \$250,000 and total taxable income can be carried forward to the next year.

The property must qualify based on the rules described by section 1245 which basically states that it must be depreciable personal property that is used as an integral part of an active trade or business. This does not include investment property or other property that is purchased solely for the production of income. Figure 2 has a partial list of qualifying property for section 179.

Calculating the Section 179 Deduction

Calculation of the section 179 deduction is relatively straightforward. However, it is subject to three limits:

- The maximum dollar limit;
- The investment limit;
- Taxable income limit.

Along with these three limits, it is also important to note that the section 179 deduction must be figured before determining the depreciation deduction. This prevents the taxpayer from taking both the section 179 deduction and a depreciation deduction on the same dollar value of property.

As an example of the maximum dollar limit, suppose a taxpayer purchases qualifying property in the year 2009 that totals \$260,000. Based on the maximum dollar limit, only \$250,000 of that purchase can be considered for the section 179 deduction. The remaining \$10,000 becomes the unadjusted basis for the purchased property and can be depreciated. It is important to understand that section 179 does not specify how the maximum dollar limit is met by the taxpayer. In other words, suppose in the year 2009 a taxpayer purchases a tractor for \$30,000, a walnut harvester for \$10,000, and fully operational shelling operation for \$220,000. Each of these purchases qualifies for the section 179 deduction, but it is up to the taxpayer to determine how to meet the \$250,000 maximum dollar limit. For example, the taxpayer may choose to deduct the purchase prices for the tractor and the

¹ Section 179 limits change yearly. Consult a tax accountant for current limits.

shelling operation (\$30,000 + \$220,000 = \$250,000) and depreciate the harvester (\$10,000). Or, the taxpayer may choose to deduct the cost of the tractor, harvester, and part of the shelling operation (\$30,000 + \$10,000 + \$210,000 = \$250,000) and depreciate the remaining shelling operation cost (\$10,000).

Figure 2: Qualifying Property Under Section 179

- **Tangible personal property** (e.g. agricultural fences, machinery, and equipment);
- **Business property** (all business property, other than structural components, contained in or attached to a building... e.g. office equipment);
- **Livestock;**
- **Single purpose agricultural** (livestock) or horticultural structures.

(IRS Publication 225, Farmer's Tax Guide. 2009)

The second limit placed on the section 179 deduction is the investment limit. The maximum dollar limit will be reduced if the taxpayer exceeds the maximum investment limits of \$800,000. If a taxpayer has over \$800,000 of qualified property for a given year, then the \$250,000 deduction limit is reduced one dollar for every dollar of qualified property over \$800,000. For example, if a taxpayer purchases \$850,000 of qualified property in a given year, then the \$250,000 maximum dollar limit must be reduced by \$50,000, making the maximum deductible amount \$200,000.

The final limit on the section 179 deduction is the taxable income limit from the conduct of any active trade or business during the year. As an example, suppose a \$12,000 tractor is purchased that will be used to plant, prune, or harvest crops and timber in an alley cropping practice. If the taxpayer's total taxable income from the farming business for the year in which the tractor was purchased is \$20,000, then the taxpayer may deduct \$12,000 from that amount. However, if the taxpayer's total taxable income from the farming business in the year the tractor was purchased is only \$10,000, then \$10,000 of the tractor cost may be deducted and the remaining \$2,000 must be carried forward for deduction in the following year.

For many landowners, there may be more than one type of deduction that is based on taxable income, such as a charitable contribution.

The IRS suggests the following eight-step method to determine the amount of deductions to take:

- *Step 1: Figure taxable income without the section 179 deduction or the other deduction. For example, suppose that the taxable income before the section 179 deduction or the charitable contribution deduction was calculated at \$15,000.*
- *Step 2: Figure a hypothetical section 179 deduction using the taxable income figured in Step 1. Suppose the taxpayer had \$13,000 worth of qualifying property. Based on the limits determined by*

section 179, this taxpayer's maximum section 179 deduction can only be \$13,000.

- *Step 3: Subtract the hypothetical section 179 deduction figured in step 2 from the taxable income figured in step 1. This equals \$2,000 (\$15,000 - \$13,000).*
- *Step 4: Figure a hypothetical amount for the other deduction using the amount figured in Step 3 as taxable income. Using the \$2,000 from step 3 as taxable income and applying the 50 percent rule for charitable contributions, the taxpayer may hypothetically deduct up to \$1,000 for charitable contributions.*
- *Step 5: Subtract the hypothetical other deduction figured in step 4 from the taxable income figured in step 1. This equals \$14,000 (\$15,000 - \$1,000).*
- *Step 6: Now figure the actual section 179 deduction using the taxable income figured in Step 5. Using the \$14,000 figured in step 5, the taxpayer would still be able to deduct \$13,000.*
- *Step 7: Subtract the actual section 179 deduction figured in step 6 from the taxable income figured in step 1. This equals \$2,000 (\$15,000 - \$13,000).*
- *Step 8: Figure the actual other deduction using the taxable income figured in step 7. The taxable income figured in step 7 was \$2,000. The actual deduction for charitable contributions would be \$1,000.*

Because of the numerous assumptions and exceptions to taxable income deductions, it would be to the advantage of the taxpayer to seek professional guidance when more than one deduction is available.

Reporting the Section 179 Deduction

The section 179 deduction is reported on Form 4562 and can be filed with either an original tax return filed in the year the property was placed in service or a "timely filed" amended return. If the taxpayer is filing IRS Form 4562 with an original tax return, the return does not have to be filed on time. However, if the taxpayer is filing IRS Form 4562 with an amended return, it will not be accepted if it is not filed on time, including any extensions.

Conservation Incentives

As a general rule, any improvements made to land are considered capital improvements and must be added to the basis of the land. However, landowners who make improvements for conservation or erosion control may choose to deduct a portion of those expenses under section 175. Likewise, payments received by landowners for implementing conservation practices may be excludable from taxable income under section 126. These two tax incentives are described in this section.

Section 175

According to Internal Revenue Code, section 175, if a taxpayer is in the business of farming, as defined earlier, then some soil and water conservation practices may qualify for deduction in the year that they occur. Typically, these expenditures would be considered capital expenses and would be added to the basis for the land. However, under section 175, expenses up to 25 percent of the gross farm income can be deducted. This deduction is possible as long as the taxpayer is a material, or active, participant in the farm business. The list of acceptable conservation practices includes, but is not limited to:

- *Treatment or movement of earth (such as leveling, conditioning, grading, terracing, contour furrowing and restoration of soil fertility);*
- *Construction, control and protection of diversion channels; drainage ditches; irrigation ditches; earthen dams; and watercourses, outlets and ponds;*
- *Eradication of brush;*
- *Planting of windbreaks.*

The last two items on the list above are key elements that apply to agroforestry.

For soil and water conservation expenses to qualify for this deduction, they must be consistent with a plan approved by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), such as:

- *NRCS individual site plans;*
- *NRCS county plans;*
- *Comparable state agency plans.*

It is important to remember that section 175 only applies to capital expenses on productive farmland for soil or water conservation and erosion control. If the conservation expenses will benefit both non-productive and productive farmland then you must allocate the expenses. For example, if the conservation practice will benefit 200 acres of your land, and only 120 acres of it qualifies as productive land, then you can only deduct 60 percent ($120 \div 200$) of the expenses.

Calculating the Section 175 Deduction

The section 175 deduction is limited to 25 percent of gross income in a given year. Gross income is the sum of all income earned from the farming business, such as the sale of crops, livestock, fruits, vegetables, and other farm products. Gross income does not include the sale of capital assets such as equipment or land. Any conservation expenses that exceed 25 percent of gross income for a given year may be carried over to the next year. However, the deduction in any given year may not exceed 25 percent of gross income for that year. It is also important to note that you cannot take the section 175 deduction if you received cost share and choose to exclude that cost share payment under section 126 described below.

Reporting the Section 175 Deduction

Conservation expenses that are deductible under section 175 must be deducted in the year that they are incurred using Form 1040, Schedule F, line 14. Expenses that are not deducted must be capitalized. If the taxpayer wishes to change methods of treating soil and water conservation expenses or capitalize some conservation expenses and deduct others, the IRS must approve the change of methods. To get approval from the IRS, a written request must be submitted before the due date of the return for the first tax year the new method will apply. The written request must include the following:

- *Name and address of the taxpayer;*
- *First tax year the method or change of method is to apply;*
- *Whether the method or change of method applies to all soil and water conservation expenses or only to those for a particular farm or project. If the method or change of method does not apply to all expenses, identify the project or farm to which the expenses apply;*

- *Total expenses paid or incurred in the first tax year the method or change of method is to apply;*
- *A statement that indicates the intention of the taxpayer to maintain separate accounting records for the expenses to which this method or change of method relates.*

The request should be mailed to the following address:

**Cincinnati Submission Processing
Cincinnati, OH 45999**

Section 126

Section 126 allows landowners to exclude from gross income all or a portion of cost-sharing payments received from programs that promote conservation, reclamation and restoration. This exclusion only applies to the portion of the payment that meets the three following criteria:

1. *It was for a capital expense. However, capital expenses that can be deducted under section 175 above must be included in gross income and the costs incurred must be deducted as described above.*
2. *It does not substantially increase your annual income from the property for which it is made. Your income is considered to be substantially increased if it is more than the greater of the two following amounts:*
 - a. *10 percent of the average annual income from the affected acres during the past three tax years (not including this tax year),*
 - b. *\$2.50 times the number of affected acres.*
3. *The Secretary of Agriculture certified that the payment was primarily made for conserving soil and water resources, protecting or restoring the environment, improving forests, or providing a habitat for wildlife.*

Some of the programs that may qualify for the section 126 exclusion are the Forestry Incentive Program (FIP), Forest Stewardship Incentive Program (SIP), the Wetlands Reserve Program (WRP), the Environmental Quality Incentives Program (EQIP), the Wildlife Habitat Incentive Program (WHIP), the Forest Land Enhancement Program (FLEP), the Conservation Reserve Program (CRP) and various state programs designed to improve forests. Programs such as EQIP, FIP, FLEP, CRP and WHIP provide a flexible framework under which agroforestry practices can be incorporated on private lands. For a more complete listing of the programs that qualify for this exclusion, see IRS Publication 225, Farmer's Tax Guide or contact your local tax professional.

It is important to note that although CRP is listed as one of the programs that can be excluded from gross income, only the cost-share portion of the CRP income qualifies for this exclusion. Soil rental payments and one-time incentive payments received under CRP do not qualify for the exclusion under section 126. Soil rental payments and one-time incentive payments are reported on Schedule F (Form 1040), lines 6a and 6b.

Calculating the Section 126 Exclusions

To determine the exclusion amount eligible under section 126, a four-step procedure is used.

- *Step 1: Determine the "Section 126 Cost." The "Section 126 cost" is calculated by first adding the amount paid by taxpayer plus amounts paid by all government programs to get the total cost of the*

improvement. Next, subtract any government payments that are not listed in Section 126(a) of the IRC and any portion of a government payment under a program which is listed in Section 126(a) but is not certified by the Secretary of Agriculture as primarily for the purpose of conservation from the total cost of the improvements. Finally, subtract any government payment to the taxpayer which is in the nature of rent or compensation for services.

- **Step 2: Determine the value of the Section 126 improvement.** The value of the section 126 improvement is the “fair market value” of the improvement multiplied by a fraction, the numerator of which is the “Section 126 cost” determined in Step 1 and denominator is the total cost of the improvement. The “fair market value” of the improvement is the amount by which the fair market value of the portion of the property improved is increased by the improvement. Fair market value is defined by the IRC as the price at which property would change hands between a willing buyer and a willing seller, neither having to buy or sell, and both having reasonable knowledge of all necessary facts. This value can be determined by appraisal or analysis of recent sales of similar property.
- **Step 3: Determine the excludable portion of the cost.** The excludable portion is the present fair market value of the right to receive annual income from the affected acreage. This is determined by taking the largest of either 10 percent of the average annual income (gross receipts) for the last three years or \$2.50 per affected acre and dividing by an appropriate discount rate. Discount rates are published each spring (April or May) in a Revenue Ruling. The 2009 discount rate for Missouri is published in a Revenue Ruling and is taken from AgriBank, FCB.
- **Step 4: Determine the amount included in gross income.** The amount that must be included in gross income is the value of the section 126 improvement (as determined in Step 2) minus the

taxpayer’s contribution and the excludable portion (determined in Step 3). Rental payments and amounts received for services provided by the taxpayer must be added to this value since they are not excludable.

Calculation of the Section 126 exclusion is very complicated and should be done with the help of a professional tax consultant. The cost-share exclusion may not be beneficial if the taxpayer is planning on disposing of the property in a short period of time and wants to avoid ordinary income recapture. To determine if the Section 126 cost-share exclusion will benefit the taxpayer, taxes should be figured both ways.

Reporting Cost-Share Payments and the Section 126 Exclusion

Landowners who have received a conservation cost-share payment can expect to receive IRS Form 1099-G, which indicates the total amount of payment received. Regardless of whether this payment is going to be partially or completely excluded, it must be reported. To report the exclusion, the taxpayer must attach a plain sheet of paper to their tax return that states the following:

- Amount of the cost-share payment;
- Date it was received;
- Amount of the payment that qualifies for exclusion from gross income;
- Calculations showing how the exclusion amount was determined;
- Amount that will be excluded.

The method of reporting income from cost-share payments depends on the level of participation and type of activity claimed by the taxpayer. For landowners who file as “investors,” the cost-share payment should be reported as “miscellaneous income”

Summary of Tax Incentives for Agroforestry Establishment

Internal Revenue Code	Subject of Code	Limits	Reporting	References
Section 126	Cost-Share Payment Exclusions	<ul style="list-style-type: none"> √ Applies only to a limited number of programs √ Eligible amount depends on a Four-step calculation based on income received during the three prior years from affected land and the fair market value of the affected acres. 	Attach a plain sheet of paper to the return with the following information: <ul style="list-style-type: none"> √ amount of the cost-share payment √ date received √ amount that qualifies for exclusion √ calculations showing the excludable amount √ amount that will be excluded 	<ul style="list-style-type: none"> √ Form 1040, Schedule F, Instructions √ Form 1040, Schedule C, Instructions √ Form 1040, Instructions √ Publication 225, Farmer’s Tax Guide √ USDA/FS Ag handbook #718, Forest Landowner’s Guide to the Federal Income Tax
Section 175	Conservation Deduction	<ul style="list-style-type: none"> √ Cannot exceed 25% of gross income from farming √ Capital expenses must be from a plan approved by NRCS or similar state agency 	Form 1040, Schedule F, Line 14	<ul style="list-style-type: none"> √ Form 1040, Schedule F, Instructions √ Publication 225, Farmer’s Tax Guide
Section 179	Qualifying Business Property Deduction	<ul style="list-style-type: none"> √ \$105,000 maximum dollar limit √ \$420,000 maximum investment limit √ Taxable income limit 	Form 4562	<ul style="list-style-type: none"> √ Form 4562, Instructions √ Publication 225, Farmer’s Tax Guide √ USDA/FS Ag handbook #718, Forest Landowner’s Guide to the Federal Income Tax
Section 194	Reforestation Deduction and Amortizable Basis Deduction	<ul style="list-style-type: none"> √ First \$10,000 deducted in year that they are incurred √ Remaining balance can be amortized over 84 months √ Expenses incurred prior to Oct 23, 2004 are eligible for the Section 48 reforestation investment credit 	Form 4562, Part VI with separate sheet of paper stating: <ul style="list-style-type: none"> √ description of costs and date incurred √ description of the type of timber and purpose for which it is grown 	<ul style="list-style-type: none"> √ Form 4562, Instructions √ Publication 225, Farmer’s Tax Guide √ USDA/FS Ag handbook #718, Forest Landowner’s Guide to the Federal Income Tax

on the front of the Form 1040. Business owners who file as a sole proprietor should use Form 1040, Schedule C. Farmers who are reporting cost-share payments as part of their gross income should use Form 1040, Schedule F.

Capital Gains

For landowners considering or involved in agroforestry, the sale of timber may be a necessary part of the establishment phase of an agroforestry practice or an expected revenue source of an existing agroforestry practice. The income from the sale of timber can be classified as either a capital gain or an ordinary income; depending on how long the taxpayer has owned the timber and whether the timber is owned for personal use, as an investment, or part of an active business or trade. For timber to qualify as a capital asset, and thus qualify for capital gains treatment, it must be held for longer than one year. Timber that you acquire through either inheritance or gift is the only exception to this rule. According to the IRS, if you inherit property you are considered to have met the one-year holding requirement. Likewise, if timberland is given to you and the donor's basis is used to figure your basis, then you may also use the donor's holding period as your holding period.

Timberland that is owned for personal use or as an investment is classified as a capital asset. According to section 1221 of the IRC, real property that is not held "primarily for sale to customers in the ordinary course of a trade or business" is considered a capital asset.

Timberland that is owned as part of a trade or business can still benefit from capital gains treatment. Prior to 2005, the only way timber business owners could get capital gains treatment for the sale of their timber was to sell the timber as either a Section 631(a) (cutting of standing timber with an election to treat as a sale) or Section 631(b) (disposal of standing timber with an economic interest retained) transaction. The new change allows lump sum sales of standing timber that is cut after December 31, 2004, to be taxed as a capital gain. The timber must meet the requirements of long-term capital assets, more specifically, the timber must be held for more than one year prior to the date of disposal. The date of

Excludable Programs Under Section 126

- *Forestry Incentive Program (FIP)*
- *Forest Stewardship Incentive Program (SIP)*
- *Forest Land Enhancement Program (FLEP)*
- *Wetlands Reserve Program (WRP)*
- *Environmental Quality Incentives Program (EQIP)*
- *Wildlife Habitat Incentive Program (WHIP)*
- *Conservation Reserve Program (CRP)*
- *Individual state programs designed to improve forests*

disposal for outright sales may be the date that payment is received. It is important to note that income from the sale of cut products, such as logs, is considered ordinary income.

Regardless of how you treat your timber (personal use, investment or business), you can reduce your tax burden when timber is sold by establishing a basis on the timber. Your timber basis is the proportionate amount of the original purchase price of the total property that can be attributed to the timber, plus any capital costs incurred in managing the timber that you have not deducted under section 175 or section 126. MU Guide G5055, "**Determining Timber Cost Basis**" provides a step-by-step explanation for determining timber basis and is available online at <http://muextension.missouri.edu/explore/agguides/forestry/g5055.htm>

For more information regarding capital gains treatment on the disposal of standing timber consult the IRS Publication 225 **Farmer's Tax Guide**, IRS Publication 544 **Sales and Other Dispositions of Assets**, MU Guide G5056 "**Managing Your Timber Sale Tax**" (<http://extension.missouri.edu/publications/DisplayPub.aspx?P=G5056>), or your local tax professional.

Summary of capital gains treatment, by purpose of ownership and method of timber sale

	Personal Use/Hobbyist	Investor	Active Business
Lump Sum	- taxed as capital gains - qualifies as a capital asset under Section 1221 of the IRC	- taxed as capital gains - qualifies as a capital asset under Section 1221 of the IRC	- Timber sold before December 31, 2004 is taxed as ordinary income - Timber sold on or after January 1, 2005 can be taxed as capital gain
Economic Interest Retained / Shares Contract	- Date of sale is the date volume and value are determined - Seller's share should be payment for stumpage and is taxed as capital gain	- Date of sale is the date volume and value are determined - Seller's share should be payment for stumpage and is taxed as capital gain	- Income from the sale of the stumpage can be taxed as capital gain under Section 631(b) of the IRC
Election to treat the cutting as a sale	- Does not apply	- Does not apply	- Income from the sale of the stumpage can be taxed as capital gain under Section 631(a) of the IRC

Conclusion

It becomes apparent that for an agroforestry practice to benefit from the current tax codes, the taxpayer must be aware of the requirements of each tax incentive. For the reforestation deduction and the amortizable basis deduction described in section 194, tree species that have timber value must be incorporated into the agroforestry practice. Ornamental trees, Christmas trees or fruit trees would not qualify. Trees planted solely for nut production would also be disqualified. The IRC does not specify a planting density or provide an acceptable species list. Therefore, the taxpayer's planting intent will most likely be the determining factor as to whether or not the practice qualifies for the section 194 incentives. Remember, the reforestation deduction and the amortizable basis deduction are for "commercial timber production"; any intent other than that will not qualify for these incentives.

Under section 179, a deduction of up to \$102,000 can be taken in a given year to recover the cost of personal property used in an active trade or business. Farm fences, livestock, machinery

and equipment qualify for this deduction. Structures specifically used for the growing of mushrooms or commercial plants would also qualify. The key to this deduction is that the taxpayer must have an active trade or business enterprise from the agroforestry practice, whether it be crops, livestock, timber, nuts or some other product.

Capital expenses for soil and water conservation on productive farm land, including the establishment of windbreaks that are designed based on USDA/NRCS approved plans, are deductible for up to 25 percent of gross farm income. Section 175 of the IRC specifically identifies planting windbreaks and the eradication of brush as deductible soil and water conservation expenses. Finally, for the cost-share exclusion of section 126, it is important to work with natural resource professionals to identify excludable cost-share programs that are currently funded and support agroforestry practices.

Tax deductions, tax credits and income exclusions can provide financial incentives above and beyond the expected revenues from agroforestry practices. As stated before, the key to all tax benefits is good record keeping. Most university extension services have publications describing the best method of record keeping for both timber production and agricultural production, such as "Maintaining Woodland Tax Records," published by University of Missouri Extension.

A great resource for more forestry and agroforestry tax considerations is the **National Timber Tax Website** (www.timbertax.org). For more information about whether or not a practice will qualify for an available tax incentive, contact your local Internal Revenue Service office or consult your personal tax advisor.

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Definitions

Active Trade - See "Business."

Adjusted Basis - Adjustments to original basis including the cost of any improvements made to the original property. For timber property, this could include additional seedlings and associated costs of planting.

Amortization - The periodic subtraction of an allowed annual amount to recover qualifying capital costs over a specified period of time.

Basis - The basis of an asset is how much it actually costs (Section 1012 of the Internal Revenue Code). For timber acquired by purchase, the basis is the amount paid for the timber. (See Section 1016 Internal

Revenue Code and Department of the Treasury, Internal Revenue Service, Publication 551, Basis of Assets.) Basis for property acquired by other means is determined based on the method of acquisition. For example, basis for inherited property is equal to its fair market value as of the date of death or some alternate valuation date. Similarly, the basis for property acquired as a gift is equal to the donor's basis at the time of transfer. Also see "Adjusted Basis" and "Stepped-up Basis."

Business - An activity that is established for the purpose of earning profit, which involves regular transactions. There are many factors determining whether or not an activity is an active business. However, the two most important factors are the "presumption of profit" and regular transactions. Also see "For Profit," "Investment," "Material Participation," "Passive Participation," and "Profit."

Capital Costs - Expenditures for the acquisition or improvement of real estate, machinery or other equipment that has a useful life of more than one year. These expenditures may be added to the original cost of the property in order to calculate adjusted basis. Tree planting costs are an example of a capital expenditure.

Capitalization - The process of adding the cost of acquiring a capital asset to a capital account. Depending on the nature of the asset, the capitalized amount may be recoverable through depreciation, depletion, amortization or only through sale or exchange.

Carry Back (Carry Forward) - An accounting technique that allows a taxpayer to get full benefit of available excess annual tax credits and deductions by applying them to previous tax returns (carry back) or future tax returns (carry forward).

Depletion - The using up or wasting away of a natural resource. In the case of timber, depletion is the recovery of an owner's basis in timber. It applies when timber is harvested and the cut logs are sold or used in the owner's business.

Depreciation - The process by which the basis of a capital asset with a determinable useful life is recovered as the asset is used for the production of income. Capital assets associated with forest ownership whose basis is recoverable through depreciation include equipment, buildings, fences, temporary roads and the surfaces of permanent roads.

Expensing - The recovery of an expense by subtracting it from taxable income in the year it is paid or incurred. This is also called deducting.

For Profit - A profit motive is presumed if the activity produced a profit in at least three of the last five tax years, including the current tax year. There are special cases where this profit requirement is modified. For example, certain activities involving the breeding, showing, training and racing of horses need to show profit in at least two of the last seven tax years. (See USDA/FS Agriculture Handbook 718, Forest Landowner's Guide to the Federal Income Tax.) Also see "Profit."

Intangible Property - Property that cannot be seen or touched. Examples of intangible property include lease rights, goodwill, patents, copyrights, etc.

Investment - An activity engaged in for the purpose of realizing a profit, that does not require the regular transaction necessary to be considered a trade of business. The least active level of participation in an income-producing activity. Also see "Business," "For Profit," "Material Participation," "Passive Participation," and "Profit."

Material Participation - "Regular, continuous, and substantial" participation in a business. A material participant in a business must meet at least one of the following seven tests.

1. You participated in the activity more than 500 hours.
2. Your participation was substantially all the participation in the activity of all individuals.
3. You participated at least 100 hours during the tax year, and no other individual participated more.
4. The activity is a significant participation activity, and you participated

in all significant participation activities for a total of more than 500 hours. A significant participation activity is a trade or business in which you participated more than 100 hours and you did not materially participate based on all of the other tests for material participation.

5. You materially participated in the activity for any five of the 10 immediately preceding tax years.
6. The activity is a personal service activity in which you materially participated for any three preceding tax years. A personal service activity involves the performance of personal services including the fields of health, law, engineering, architecture, accounting, actuarial science, performing arts, consulting, or any other trade or business in which capital is not a material income-producing factor.
7. Based on all the facts and circumstances, you participated in the activity on a regular, continuous and substantial basis.

(See Department of the Treasury, Internal Revenue Service, Publication 925, *Passive Activity and At-Risk Rules*.)

Ordinary Expenses - Currently deductible operating expenditures including management, taxes and interest. These expenses are generally deductible in the year they occur. Pruning costs, noncommercial thinning costs and harvesting costs of annual crops are examples of ordinary expenses.

Passive Participation - A person is a passive participant in a trade or business if they do not meet any of the rules required for material participation. (See Department of the Treasury, Internal Revenue Service, Publication 925, *Passive Activity and At-Risk Rules*.) Also see "Material Participation."

Personal Property - Personal property is property that is not permanent in nature and is not a permanent fixture on land. For example, machinery, equipment and livestock are considered personal property.

Profit - Profit is calculated by subtracting expenses from gross income for a trade or business activity in a given tax year. Appreciation in the value of assets also is considered profit. Profit from timber will most likely be realized from appreciation in value through physical growth and enhanced quality until it is harvested. (See *USDA/FS Agriculture Handbook 718, Forest Landowner's Guide to the Federal Income Tax*.) Also see "Active Trade," "Business," and "For Profit."

Real Property - For taxation purposes, real property refers to land and permanent fixtures on the land, such as buildings, ponds, roads and standing timber. A fixture is permanent if it is "...erected on, growing on, or attached to land ..." and cannot be removed from the land without destroying its original use, purpose or function. (See Department of the Treasury, Internal Revenue Service, Publication 551, *Basis of Assets*.)

Stepped-up Basis - If property is acquired through inheritance, the basis may be "stepped-up" or increased. The stepped-up basis is determined by the fair market value of the property on the deceased's date of death or some other alternative valuation date. (See Department of the Treasury, Internal Revenue Service, Publication 551, *Basis of Assets*.)

Tangible Property - Property that can be seen or touched. This would include trees, machinery, equipment, etc.



Produced by the
University of Missouri Center for Agroforestry

Shibu Jose, Ph.D., Director
203 ABNR Columbia, MO 65211



Technology Transfer and Outreach Unit

Michael Gold, Ph.D., Associate Director
Larry D. Godsey, Economist
Dusty Walter, Technical Training Specialist
Julie Rhoads, Events Coordinator
Michelle Hall, Sr. Information Specialist

 Center for Agroforestry
University of Missouri

For more information, visit www.centerforagroforestry.org
573-884-2874; umca@missouri.edu

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