**Economic Budgeting for Agroforestry Practices**  
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### Agroforestry Enterprise Budgeting (Steps 1-4)

#### Step 1: Define the Enterprise
1. What practice is it? (AC, SP, RFB, WB, FF)
2. What species? (common or scientific name)
3. What spacing? (30' x 30', 20' x 40', ...)  
4. What is the price basis? (60 acre, 60 tree, $/yr, ...)

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

#### Step 3: Estimate Variable Costs (Operating costs)
1. What are the costs to establish the practice? (site preparation, planting, ...)
2. What are the costs to maintain the practice? (chemicals, grafting, thinning, ...)
3. What will it cost to harvest? (nuts, timber, ...)
4. What will it cost to market the products? (advertisement, transportation, spoilage, ...)
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% per acre in trees = 10% of per acre property tax)
2. What proportion of the property insurance bill can be attributed to the tree portion? (using machinery 10% of the time on trees = 10% of the per acre insurance bill)
3. Is there any interest being paid on capital? (interest on machinery debt, building debt, ...)
4. What does it cost to own the land? (current rental rates, interest payments on land, ...)
5. Is there any capital that must be depreciated? (machinery, buildings, roads, ...)
6. When and how often will these costs occur?

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1 When developing enterprise budgets for the tree component of an agroforestry practice, be sure to consider all possible sources of income.  
2 Variable non-cash costs are costs that are incurred due to production, but do not require a cash outlay. (Ex. If a landowner used money from savings to finance the planting of trees, the interest that could have been earned on the savings would represent a variable non-cash cost.)  
3 The easiest method is the market cash rental method.

AC = alley cropping, SP = silvopasture, RFB = riparian forest buffer, WB = windbreak, FF = forest farming
# Agroforestry Cashflow Planning Steps

**Step 1:** Define the practice
1. What practice is it? (e.g., SP, FFB, WB, FF)
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? (i.e., spacing, species, trees per acre, ...) 
4. What price basis best represents all enterprises? (f/acre, f/bushel, f/year)
5. What is the planning horizon for this practice? (50 years, 60 years, ...)

**Step 2:** Calculate Annual Revenues
1. What are the total revenues each year for the tree enterprise? (year 1 = $100, year 2 = $50, ...)
2. What are the total revenues each year for the crop or livestock component? (year 1 = $100, year 2 = $50, ...)
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, ...)
2. What are the total variable costs each year for the crop or livestock component? (year 1 = $75, year 2 = $50, ...)
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 enterprise? (year 1 = $15, year 2 = $15, ...)
2. What are the total fixed costs each year for the crop or livestock component? (year 1 = $25, year 2 = $25, ...)
3. What are the total fixed costs each year for the tree, crop and/or livestock enterprises? (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?
4. What is the frequency of negative income occurrences? (3 out of 10 years, 7 out of 10 years, ...) 
5. What is the duration of the negative income occurrences? (3 years in a row, 5 years in a row, ...) 
6. What is the magnitude of the negative income? (how large is the income deficit, how large is the deficit compared to expected future incomes, ...)

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4 A planning horizon is a period of time when all costs and revenues associated with a practice are realized, in other words, the life expectancy of the investment.
5 Crop and livestock enterprise budgets can be developed using similar enterprise budgeting methods as the tree component.
6 The total fixed costs for any practice should not exceed the amount that would be expected if all the assets set aside. If there is a difference, that difference would be a variable cost.
7 The NPV is a reflection of the current value of the anticipated future income stream. Due to inflation and other factors, future income expectations must be discounted to reflect the value of today’s dollar.
8 The IRR is an indicator that estimates the rate at which an investment will be returned or grow. An example of rate of return is the interest earned on a savings account.
9 This is often called the annual equivalent value (AEV). By using the net present value calculated from the net income stream of the practice, and the same discount rate, the AEV is calculated. This indicator is used to compare highly variable investments with relatively fixed or stable investments.
10 Deficit - a situation when expenses are greater than revenues.