

# HOW ARE SHORT ROTATION WOODY CROPS AFFECTED BY INSTITUTIONAL FACTORS IN THE SOUTHERN UNITED STATES?

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**Abstract**—Short-rotation woody crops (SRWC) produce a variety of forest products useful to consumers such as pulp, energy biomass, and solid wood. The establishment and management of these crops before conversion into manufactured products are affected by several institutional factors. The first objective of this study was to identify and document institutional structures and programs that directly and indirectly affect a landowner's decision to establish SRWC. The second objective was to compare these factors affecting SRWC across states in the South. The methods used to achieve these objectives utilized library and Internet searches as well as telephone interviews and site visits with state tax experts, state forestry officials, industry representatives, and university researchers. Preliminary results are presented.

## INTRODUCTION

Short-rotation woody crops (SRWC) are an alternative investment opportunity for landowners to produce a variety of forest products. One objective of this study was to identify and document existing tax structures, forestry regulations, and environmental issues that directly and indirectly affect short-rotation woody crops. A second objective was to compare institutional factors affecting SRWC across selected states in the South. The methods used included Internet and library searches of pertinent information. A validation process involved numerous telephone and field visits with experts.

## FEDERAL TAXES

Landowners considering the establishment of SRWC are subject to federal and various state specific taxes depending on the location of their property. Despite similarities of SRWC in rotation length to Christmas trees, the Internal Revenue Service (IRS) treats SRWC as a timber resource for taxation purposes. For both nonindustrial and industrial landowners, land, equipment, and timber accounts must be created to track capitalized costs. Capitalized costs can only be recovered by those methods deemed acceptable for each account category. For instance, installation costs for land improvements such as access roads and water pumping stations have to be capitalized until the land is sold. Establishment costs for SRWC are placed in the timber account and not depleted until the timber is sold. The equipment costs can be depreciated over IRS specified life spans. For landowners interested in establishing SRWC on a smaller scale, the IRS does allow the amortization of establishment cost, excluding costs of installing irrigation systems, over an 8-year period. In addition, revenues generated from SRWCs face capital gains treatment as does any other timber crop. In general, taxation treatment of SRWC at the federal level is little different than for other timber crops.

## STATE SPECIFIC TAXES

Nonindustrial and industrial landowners interested in establishing SRWC face a variety of state taxes. Typically, SRWC face common forestry taxes such as property or land-use taxes and severance taxes. Land-use taxes are applied at the county level where tax rates reflect the current land use. Tax rates for forest land use are generally lower than those for agricultural land use, except for places like the Mississippi Delta. Severance taxes are enforced by the State on all timber products severed from the landowner's property. Generally, this tax is paid by the severer, such as a logger, and the cost is passed on to the landowner through lower stumpage prices. In general, these state specific taxes are deductible for federal income tax purposes in the year in which they occur, according to IRS §164. The frequency and details of these state specific taxes can make certain locales more favorable for establishing SRWC. For instance, Idaho, Oregon, and Washington treat SRWC plantations as an agricultural land use and exempt them from state severance taxes. In the Southern United States, state governments treat SRWC plantations as a forest land use and subject them to severance taxes. States subjecting SRWC plantations to severance taxes include Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, and South Carolina. Another important issue is whether irrigation equipment used in SRWC plantation establishment and cultivation is subject to taxation. Only Louisiana, Mississippi, and South Carolina do not subject irrigation equipment to taxation. Other states, such as Arkansas, Florida, Georgia, Louisiana, Kentucky, and North Carolina impose a form of tax on irrigation equipment.

## FORESTRY REGULATIONS

A major issue that affects forestry regulations is the Clean Water Act of 1977. It authorizes the administrator of the Environmental Protection Agency (EPA) to issue federal and state agencies information pertaining to guidelines for identifying and evaluating the nature and extent of non-point sources of pollutants. In addition, it outlines processes,

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*Citation for proceedings:* Connor, Kristina F., ed. 2004. Proceedings of the 12<sup>th</sup> biennial southern silvicultural research conference. Gen. Tech. Rep. SRS-71. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 594 p.

procedures, and methods for controlling pollution stemming from non-point sources including silvicultural activities, which are relevant to SRWC. This has resulted in the development of voluntary and regulatory state best management practices to control pollution from forestry activities. In this study, most southern states utilize voluntary best management practices on forest land to comply with the Clean Water Act of 1977.

## GENETICS AND TREE BREEDING

Many short rotation woody crops are heavily dependent on traditional tree breeding practices to develop trees with desirable attributes. In the Pacific Northwest, the most prevalent practice is cross-pollination, which is common for agricultural crops. Attributes that are desirable and commonly selected include those that improve tree vigor, height, and diameter. Other practices that are not typical include the use of molecular biology for obtaining desirable tree attributes. Planted trees which have attributes selected by molecular biology practices are considered genetically engineered (GE). In general, the development of new tree breeds allows landowners to produce more wood with desirable attributes on a per acre basis. In addition, SRWC establishment on agricultural lands leads to wildlife habitat diversification (Twedt and Portwood 1997).

Despite the benefits derived from traditional tree breeding programs, numerous environmental groups do not differentiate between trees derived from traditional or nontraditional breeding practices and lump them under the classification of genetically engineered. These groups believe that SRWC with GE trees are generally sterile environments, promote soil erosion, water pollution, gene escape, and degenerate soil productivity (Greenpeace 2000, WWF 1999). They use the terms "Frankentrees," "Frankenscience" and "Frankenforestry" to describe genetically engineered trees (AP 1999, Weiss 2000). Some of these groups have utilized terrorist tactics such as burning down research labs, vehicles, endangered species, and destroying genetically engineered crops and trees (Service 2001, Welch 2000). Groups claiming responsibility include "Reclaim the Genes," "Genetix Goblins," "Earth Liberation Front," and "The Washington Tree Improvement Association" for activities in British Columbia, Oregon, and Washington (BAN 2000, Bernton 2001, ENS 1999, GA 2000, Tuttle 2000). According to Service (2001), from late 1999 to mid-2001, 16 attacks have been made against research facilities conducting genetic engineering of plants. Of these attacks, six focused specifically on species such as poplar used as SRWC resulting in millions of dollars in losses.

For landowners interested in establishing SRWC, it is important to focus on attacks by eco-terrorists on SRWC with genetically engineered trees and advocacy campaigns against genetically engineered plants. Attacks by eco-terrorists, although gaining publicity, have not affected large acreages of SRWC (Service 2001). There is a growing advocacy campaign against perceived genetically engineered plant products. Several food processing companies have had to remove genetically engineered food products from store shelves in Europe (Halweil 1999). A review of the literature and Internet sources does not reveal any

large campaigns targeting genetically engineered wood; however, the environmental campaign against tree breeding may affect wood marketing.

## SUMMARY

Landowners have to consider a wide variety of factors when considering the establishment of SRWC. Taxation is important because of the inherent impacts on investment returns from a per acre basis. In the South, SRWC are considered a forest land-use and are subject to federal and state timber tax rules. In addition, most southern states ask landowners to implement BMPs voluntarily to meet clean water regulations. Finally, SRWC landowners planting trees, developed by breeding programs, may face pressure from environmental groups, which result in an uncertain market for their fiber in the future.

## ACKNOWLEDGMENTS

Approved for publication as Journal Article No. FO228 of the Forest and Wildlife Research Center, Mississippi State University. Our thanks is given to Drs. Keith L. Belli and Deborah A. Gaddis for constructive criticisms.

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