ECONOMIC AND SOCIO-ECOLOGICAL INTEGRATION: 
FOREST ECONOMICS RESEARCH TOPICS OF INTEREST TO NGOs 

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Introduction
Non-governmental organizations (NGOs) work for the improvement of social and environmental conditions and economic conditions of poor and disenfranchised people. NGOs put their efforts into achievement of these goals in lieu of financial profit goals. They serve the needs and interests of limited-resource people, and of environmental interests that are not always adequately dealt with by governments and local stewards. Most projects have the broad goal of improving the quality of human life, especially in resource-stressed areas. Local problems are addressed by managing agricultural, forestry, and rural economic development projects. However, success is frequently constrained by a limited ability to understand how to achieve sustainable resource use in complex human and natural systems.

In an increasingly complex world, NGOs have increasing need for and access to resource economics research information. Economic reports become bases for project plans, which are developed in response to local resource overuse or misuse, or to environmental problems, such as deforestation, soil erosion and desertification, water quality degradation, and loss of biodiversity. Development professionals use economic, environmental, and social research to carry out fund raising, project planning, and partnership development to develop appropriate responses to resource use problems in developing areas. The balanced application of financial, social, and ecological interests is key to successful development project results. The desired result for many resource development projects is appropriate and "sustainable" socio-ecological land use.

In free market societies like the United States, land use decisions are generally based on the anticipated economic returns of the various options. The economics of the land use options are, however, subject to constantly changing economic conditions. The bottom line can change rapidly as technologies and economic policies change. We discuss four areas relevant to forest economics that may have impacts on resource management in developing areas domestically and abroad: 1) resource-based cooperatives; 2) reforestation projects; 3) green label forest and forest products certification programs; and 4) biomass utilization projects, including the marketing and use of forestry and agricultural residues.

Resource-Based Cooperatives
Cooperatives have been a vital part of U.S. business and trade since settlement. Fourteen Fortune 500 companies are member-owned cooperatives (co-ops), and nearly a third of all U.S. agricultural crops are produced by farmer-members of producer co-ops. How can cooperatives be creatively organized to better achieve sustainable resource management goals? What other kinds of organizations and market interventions similar to cooperatives can be developed to improve resource use efficiency?

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How can existing co-ops promote sustainable resource use? How can co-ops assess and foment natural resource efficiency and sustainability within the local context?

Co-ops have been used in traditional markets to improve production, processing, and marketing efforts by sharing production, processing, and marketing resources. In an increasingly technical world, co-ops will be used to share management skills and technologies, and to pool the risks associated with the adoption of new technologies.

Cooperatives are often created to develop a sufficient volume of products to purchase equipment or services, to assure steady supplies, to address transportation needs, or to overcome inadequate buyer competition. We are interested in finding ways to optimize resource use efficiency through cooperative landowner associations.

Forest landowner associations in Independence and Izard counties, Arkansas, are collectively purchasing the services of consulting foresters. Foresters thereby have larger accounts, and small owners have access to professional services at a reasonable rate per land unit. Owners of small and medium-sized holdings can also co-op the costs of certifying forest stands. How many forest landowners could gain access to certification via co-ops who could not participate as individuals?

Wood manufacturers might cooperatively purchase technologies to optimize the use of less-desirable species, e.g., through use of finishes, pigments, and treatments. In this case, the more extensive the use of less desirable species, e.g., sycamore, green ash, and sweetgum, in finished wood products, the higher the overall use efficiency of forest lands that are allocated to timber and fiber production.

The Economics of Reforestation

About half of the nation’s original forests have been converted to non-forest uses. Some of these lands are marginally productive farmland and some of them are cropped areas alongside waterways that should be reforested to restore water quality. What are the economic (community scale) costs and benefits or restoring marginal farmlands? How do these costs and benefits compare to the financial incentives that govern the actions of landowners? How can governmental policies and market prices be stabilized to provide landowners and managers more certainty about reforestation decisions?

Millions of acres of bottomland hardwood forests were converted into marginal soybean lands in the 1970s, when soybean prices soared to $12 per bushel. Some of these lands flood several times per decade, and their efficiency as farmland is marginal. Where are these farmlands, and who owns them? Where are the “most marginal” lands? What are the most promising forestry and agroforestry systems for farmed wetlands? How much must current financial incentives change before hardwood production becomes viable? In what ways do current policies inappropriately favor row crop agriculture over forestry in bottomlands?

It is important to recognize that a wide variety of forest stand types—from intensive fiber farms to strictly-controlled natural areas—is desirable. The most difficult challenges focus on the locations and proportions that can be protected, and on maintaining an acceptably limiting proportion used for wood production.

Smart reforestation efforts balance ecological, social, and economic factors. In the Delta, almost every acre of land has a productive potential. Low-lying areas become forested drainages between row crop fields. *Quercus texana* (Nuttall oak) and *Quercus lyrata* (overcup oak) grow naturally in minor stream bottomlands, and they have strong markets.
Biologically, there are usually several viable options for reforesting once-forested lands. Enrichment plantings by direct seeding and by seedling plantings, establishment of fast-growing "fiber farms," management of natural succession by controlled fire and selective cutting, and development of agroforestry systems all apply in some context.

"Good Wood" Certification Programs

In the past decade, "sustainably managed and produced" forest and forest products certification programs have proliferated. Particularly in Europe, consumers demand that environmental considerations be adequately addressed in the production of wood products. As the green ethos spreads to consumers worldwide, production methods will be increasingly under scrutiny by buyers. What are the market implications of forest certification, i.e., good wood and green label, programs? How can such programs improve financial and management options for landowners, foresters, and marketers? Who stands to win, and who will lose as green certification programs grow in importance? In an increasingly sophisticated marketplace, certification of products as socially responsible or environmentally benign can be a useful tool to consumers, providing them with a means of expressing their ethics in their purchasing decisions. Certified products provide a price premium to wood products producers, and customer satisfaction to consumers.

Green label programs depend upon strong connections between program requirements and a commonly accepted understanding of sustainable management; strict verification of production methods, including chain of custody; uncompromised capability, integrity, and neutrality of the certifying bodies; and a recognition by consumers that these assurances have a market value for wood products. Voluntary compliance and self-monitoring will not assure consumers that adherence is strict.

Good wood certification and green label programs for wood products have grown rapidly in the 1990s. The International Standards Organization (ISO), the Tropiwald Initiative (ITW, in Germany), the Canadian Standards Association (CSA), International Tropical Timber Organization (ITTO), and the Forest Stewardship Council (FSC) have developed and begun implementing "good wood" certification programs. The American Forest and Paper Products Association's Sustainable Forestry Initiative (SFI) also has some elements of a green label program. Each of these efforts has been voluntary and between private parties.

National governments have also begun implementing wood production standards in recent years. Switzerland and the United Kingdom have official government liaisons with the FSC program. Belgium has developed an FSC-compatible national forest certification program. The Belgium Club 1997, a timber supply consortium, has committed to providing only certified wood to its 1997-forward markets. A new forestry law in Bolivia calls for mandatory forest certification, and there is now anxiety about how the third-party certification regulations will complement the existing mandatory certification law. The FSC program and the Rainforest Alliance's Smart Wood program have certified forests in Mexico, Papua New Guinea, Great Britain, and the U.S.

The only forest certification on the ground in the U.S. today is by the FSC. Through its accredited certifiers, Smart Wood and SCS, five U.S. forests, of sizes 100 to 40,000 hectares (250 to 100,000 acres) are certified Smart Wood sources. The National Wildlife Federation recently announced its partnership with the FSC to operate a certification program in the northeast. Current forest certification efforts are developing in the Appalachian Mountains, the Lake States, and the Mississippi Alluvial Valley. As of January 1996, about 3.3 million hectares (8.2 million acres) of forest in the U.S. and the U.K. are under certification by FSC.