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Using the Private Sector for  
Sustainable Forestry Development

by

Douglas A. MacKinnon

Working Paper No. 51



School of Forest Resources  
North Carolina State University



School of Forestry and Environmental Studies  
Duke University



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#### About FPEI Working Papers

FPEI Working Papers are a special series of SCFER Working Papers issued by the Southeastern Center for Forest Economics Research for the purpose of sharing the research findings of the Forestry Private Enterprise Initiative. These papers are distributed in order to promote the timely release of new theories, data and findings. Working papers represent various levels of research findings and readers are encouraged to contact the author(s) for more information. Some of the papers may be published in modified form elsewhere. An updated list and copies of FPEI Working Papers are available from the Center at P.O. Box 12254, Research Triangle Park, NC 27709, (919)549-4030.

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Sustainable Forestry Development

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(FOREM article)

I. USING THE PRIVATE SECTOR FOR  
SUSTAINABLE FORESTRY DEVELOPMENT

by DOUGLAS A. MacKINNON

Forests are—and have been for some time—a primary source of economic activity in the tropics, both humid and dry. They provide food, shelter, and frequently jobs and/or income for their inhabitants and a wide range of other people who live elsewhere. Many tropical forests are rapidly disappearing, however, due to land clearing for agriculture and other purposes. We hear figures up to 11 million hectares (28 million acres) per year as estimates for the pace of this destruction. In some Latin American countries, such as Costa Rica, the wood supply remaining uncut is estimated in the range of only five to eight years. In Brazil, which has the largest reserve of tropical forest, current rates of destruction indicate no more than a 50- to 75-year period before there is nothing left. Implications for biodiversity and global warming are alarming.

What can be done to reverse this process and, at the same time, provide the economic benefits so desperately needed in these countries? One effective avenue to sustainable development of natural resources is to make forest protection and management economically attractive. This is the direct opposite of making forest destruction unattractive through penalties, preservation, and other negative approaches which rarely work effectively, especially when basic human needs remain unsatisfied. And, it is an

alternative rarely, if ever, mentioned in the heat of most current arguments about saving the rain forest!

A. What is FPEI/INFORDE?

The Forestry Private Enterprise Initiative (FPEI) was established on a pilot basis by the United States Agency for International Development in 1984. It is a small but ambitious project to increase income and employment through multiple uses of forests in developing countries.

The basic hypothesis of FPEI is that assistance to developing countries is most effective when it is directed at the specific needs of individual economic sectors. Thus, its primary objective is to stimulate development of the forest-based sector in AID client countries through policy dialogue and the sector's greater participation in the agency's development projects. Economic returns are increased through both direct and indirect means, all of which depend on the nurturing and strengthening of individual enterprises.

FPEI is a consortium of public and private partners, including North Carolina State University, Duke University and the USDA Forest Service's Southeastern Forest Experiment Station. Funded by USAID's Bureau of Science and Technology, Office of Forestry, Environment and Natural Resources in Washington during the trial period, FPEI focused on Ecuador from mid-1985 until the end of 1988. Upon completion of the trial phase, the project was moved to Guatemala in early 1989, with local control and funding anticipated from USAID sources in several Central American countries over the next three to five years.

FPEI has a technical assistance component known as INFORDE (the Spanish acronym for FPEI). In parallel with the field program, applied research is conducted into a number of issues linking forests with business enterprise, large as well as small. The objective of this research is to furnish an analytical basis for business decisions and for national forest policy. Expected results include increases in income and employment from multiple use and an increase in value of the forest itself, which should lead to better conservation and wiser utilization of the resource itself over time. This could be a major step toward sustainable development.

#### B. Public and private partners

The concept of a public/private partnership, in both the United States and the host country, makes for one of the most distinctive features of this project. This approach is all too rare. Government programs are often too few, too weak, and too centralized to solve the forestry problems of developing nations. Often, the private sector is the missing ingredient in countries struggling to provide a better life for their citizens. It is by public and private partners working together that lasting achievements take place.

The Forestry Private Enterprise Initiative is heavily dependent on public and private partners at all levels of organization and operation. Washington has been not only the primary source of funds during the trial phase, but also the source of overall project guidance: from USAID, the Department of Agriculture, and the International Forestry group within the USDA Forest Service. Here in North Carolina, the Southeastern Center for Forest Economics Research (SCFER) has contracted with USAID to implement the

FPEI program.

[Editor's note: SCFER was formed in 1983 by its three lead institutions (Duke, North Carolina State University, and the USDA Forest Service Southeastern Forest Experiment Station) to conduct research in forest economics and policy in both the domestic and international arenas. FPEI is its major international thrust. Other cooperating institutions in the South participate in specific studies from time to time.]

INFORDE, the FPEI field program, works directly through private individuals, private firms, and associations of private firms (intermediary organizations). These can include small farmers, large landowners, sawmills, large plywood and furniture manufacturers, and industry associations such as AIMA, the wood products trade association in Ecuador.

### C. The field program

Ecuador was selected as the country in which to try out the FPEI concepts. The following factors were influential in the selection process:

- \* Forests and forest products play an important role in the national economy of Ecuador.

- \* Ecuador already had strong private institutions, including intermediary organizations. In addition, the president of the country at the time shared a conservative, business-oriented philosophy with the president of the United States.

\* Excellent potential for growth existed in the economic sector.

\* Perhaps of greatest importance, the private sector in Ecuador wanted INFORDE! It might be added that within the private sector some ownership of the forest resource already existed, including corporate landholdings (local ownership) and agroforestry practices on the part of coffee and cocoa farmers of various sizes.

The project was implemented in the fall of 1985 with the relocation of a market demonstration specialist to Quito for a three- to four-year period. The specialist was a US citizen of Chilean birth, with extensive domestic and international experience in the forest products business as well as formal training in both forestry and wood products manufacture.

During the height of project activities, there were one additional full-time and two half-time employees in North Carolina, plus a half-dozen or so local support staff in Ecuador. Activities of this handful of people were significantly leveraged through individuals and organizations in both the public and private sectors of Ecuador and here in the United States.

The program for Ecuador was based upon three broad strategies: (1) increase the value of wood-based products, nature tourism, and other goods and services that can be sold from forests; (2) increase the earnings of private forest based activities through improved technologies and marketing; and (3) encourage direct private investment in the forestry sector by both domestic and international means—at all levels and sizes, large and small.

Specific project activities were directed at institutional strengthening, education and training, domestic market development, and the development of export trade opportunities. Let's take a brief look at some

examples in each of these areas.

1. Institutional strengthening. The objective here was to build institutions for policy making, technical research, and management, particularly in the private sector. INFORDE assisted Ecuador's wood products manufacturers association (AIMA) with study trips, library materials, subscriptions to market publications, information management systems, and efforts to expand membership. The two organizations also jointly organized several conferences and workshops, and frequently shared facilities and personnel.

Another organization of particular interest is INSOTEC, a private, nonprofit group which provides technical assistance for small industries. INFORDE and INSOTEC have joined personnel and financial resources on a number of feasibility studies and technical assistance projects for small sawmills and furniture plants.

Finally, a new nonprofit private entity called CORMADERA was created to carry on the work initiated by the project after the trial phase was completed in early 1989 and core funding withdrawn.

2. Education and training. The professional development of a significant number of foresters, engineers, and wood products specialists was advanced through the efforts of FPEI and INFORDE. This type of training included internships and study trips to other countries. Several of these professionals have now become staff members of CORMADERA. In addition, the project supported more than a dozen thesis projects at Loja University in Ecuador as well as the involvement of graduate students at Duke and NCSU to carry out many of the policy and economic analyses. INFORDE helped fund and

organize a number of conferences, field days, workshops, roundtable sessions, seminars and other events leading to significant media coverage.

3. Development of the domestic market. Over half the timber cut in Ecuador every year has been left in the forest to rot. Few of the country's buildings are constructed of wood or have wooden components. INFORDE has educated architects, builders, and wood products suppliers about the economics and safety of wood construction. As a practical demonstration, it facilitated the design and assembly of a prototype wooden building for a national construction fair held in Quito, and donated the structure for use in the major city park at the conclusion of the fair. Product quality and pricing were additional areas of focus, including the development and distribution of the first price bulletins, thus helping to improve decisions and increase awareness of the sales value of wood products. Bamboo was highlighted as a low-cost alternative for the minimal housing requirements of the warmer climate areas to the east and west of the Andes.

4. Export trade. Exports are a vital source of hard currency. With the help of AIMA, the first export sales of furniture were completed in 1987. A US chemical manufacturer assisted in solving a problem concerning high quality finishes. Design specialists were also brought in to help Ecuadoran manufacturers better understand the furniture styles demanded in foreign markets. In addition, promotional materials were developed to describe and illustrate the variety and availability of local woods.

#### D. Applied research in policy and economics

The overall applied research program is designed to demonstrate the great development leverage which can be obtained when using an integrated approach that includes applied research and policy work in direct support of the technical assistance efforts on the ground. It took a couple of years before we realized the importance of this integration, and a little while longer to learn how best to accomplish this vital linkage.

Specific research activities were directed at four basic research themes: (1) forest products trade and international comparative advantage, (2) investment analysis in forestry and forest products, (3) technology and employment in forest products, and (4) new enterprise opportunities, including nature tourism and agroforestry. The following are a few brief examples from each of these themes:

1. Forest products trade and international comparative advantage. While the major focus was on forest products trade in Latin America and the Caribbean basin, one supporting study did develop guidelines for investment and trade in the forest products sector of southeast Asia, since we are rapidly moving from a regional to a truly global market place. Several studies explored Ecuador's international position regarding the costs of growing and processing wood products. Work is nearing completion on a comparison of costs for specific wood products in Ecuador, Chile, and the US South. These studies provide important guidelines for both industry and government regarding particular lines of forest-based enterprises in which Ecuador is competitive. In the future, it is hoped that these same analytical techniques can be applied in

several of the Central American countries.

2. Investment analysis in forestry and forest products. The earliest study in this area looked at investing in timber and timberland in Latin America and concluded that now indeed may be an opportune time for US companies and individuals to study timber investments in this part of the world, provided appropriate constraints are also taken into consideration. A later study investigated the function of a credit plan for reforestation; still another, the economic returns from investing in plantation forestry. Such studies provide basic information for proper tax and incentive policy development, and they should be undertaken by any developing country interested in sustaining its forest resources.

3. Technology and employment in forest products. As noted above, there is a real need to support a field program such as INFORDE with objective research. For example, a group of interrelated studies examined production, employment and efficiency in Ecuador's wood processing establishments. For the very first time, the magnitude of this sector of the economy became visible in terms of both monetary contribution and number of jobs created. Citing these kinds of numbers is the only way to get proper attention from the executive and legislative branches of government.

4. New enterprise opportunities. Two studies consider the options of expanding timber supply from nontraditional sources such as from shade trees on farms in Ecuador's cacao-coffee region. Another looks at the forestation incentive program now in place in Ecuador and suggests a rationale for

modification and an agroforestry application. In addition to agroforestry, the other big area for new enterprise opportunities is natural history tourism, also called ecotourism. One-fourth of the papers already published deal with this topic.

#### 5. FPEI Working Papers.

Results of these applied research studies have been published as a series of working papers, now numbering 43. Ten more will be added during 1990, to complete the series (see appendix for complete listing as of August, 1990). Requests for these papers have come from all over the world, and more than 3,000 have been distributed so far. We expect demand to continue for at least the next couple of years. In addition, many of these same papers, or portions of them, have been published in journals, conference proceedings, and other professional outlets. Technology transfer has also been promoted through the workshops, policy roundtables, conferences, and media events previously described in the section on the field program.

Taken together, these studies comprise one of Ecuador's most comprehensive assessments of enterprise opportunities in forestry and forest industries. The research process and findings have brought a number of critical issues to the attention of Ecuador's decision makers. Moreover, the research has stimulated interest in the design and funding of new kinds of projects that might generate revenue from tropical forests. One indication of this is the high international demand for FPEI working papers on nature tourism, a subject in which our research efforts are among the earliest and most analytical. FPEI obviously is on the leading edge of this important and rapidly growing area of interest worldwide.

## E. Beyond Ecuador

When the three-year trial period in Ecuador was completed in December 1988, ongoing elements of the project were assumed by CORMADERA, a public/private sector consortium specifically developed to succeed INFORDE. Washington core funding was withdrawn, with continuing support to be provided by USAID in Quito and other local sources. Technical assistance follow-up was to be supplied for three weeks every quarter for a two-year period by the market demonstration specialist to assure no loss of momentum. SCFER agreed to provide applied research study support as requested by CORMADERA.

In January 1989, the market demonstration specialist was relocated to Guatemala City to establish a Central American base from which to apply the techniques developed in Ecuador. Core funding from USAID/Washington was sufficient only for one more year of operation; subsequent funding and project direction was to be developed from local and regional USAID sources. It was anticipated that additional project offices would be established in Costa Rica and Honduras by 1991.

Due to difficulties in obtaining new funding and in generating support for INFORDE with host country organizations in both the public and private sectors, implementation of this second phase has been much slower than anticipated. Also, due to the great difficulties involved in getting established in Guatemala, no time was available to carry out the follow-up activities in Ecuador. However, funds are now available for a limited follow-up program later in 1990.

Limited research support has been provided to CORMADERA over the past twelve months by North Carolina State University, with prospects for involvement in Central America still tentative for later this year. In the

meantime, studies already under way in the areas of nature tourism and comparative economic advantage are being completed, and working papers readied for publication this summer.

A synthesis report covering 1985 to 1989 is also in preparation for publication by early fall; its major focus will be on lessons learned from FPEI/INFORDE and potential applications to other countries in Latin America and other USAID regions of the world. It is hoped that many of these concepts can be incorporated into future forestry projects funded by other bilateral agencies and organizations such as the World Bank, Inter American Development Bank and the United Nations Development Program.

#### F. Lessons learned

In addition to the tremendous benefits achieved in Ecuador, we learned a few lessons that can be of guidance in future undertakings of this nature:

\* The success of the field program is directly tied to having an individual in charge who is a true entrepreneur, to act as both a leader and a catalyst or facilitator. This style is in contrast with the typical personality in development work and can cause conflict with USAID and embassy personnel. However, with the right person in this role, much can be accomplished for comparatively little money through leverage.

\* The host country environment needs to be right; it must include a reasonably strong private forestry sector and one or more intermediary organizations. Most important, individuals and organizations in both the public and private sectors must want, and preferably seek, your help.

\* The research program must be willing and able to focus on applied problems in direct support of the field program. In effect, it should grow out of the needs of that field program. There is a big gulf to straddle here, in that USAID is not enthusiastic about most research work in general, and academics do not always embrace applied studies. But, as shown by this project, it is possible to bridge this gap.

\* Research findings must be disseminated through working papers, professional journals, conferences, workshops, policy roundtables, and the like. Publications should be in local languages, not just English. Otherwise, nothing changes, and inadequate policies remain in effect.

\* To facilitate and coordinate both field and research activities, a strong separate administrative function is needed to handle overall planning, organizing, reporting, and control matters. This is especially critical in a complex project such as FPEI, with many players and sponsoring organizations.

\* The program should be designed up front to develop local leadership and funding after an initial three- to five-year period. Follow-up involvement is critical for one to two years after the entrepreneur is withdrawn; otherwise, there will be a loss of both momentum and direction. In Ecuador, we goofed on this point!

\* The change to a new country is an exhaustive experience. Unfortunately, only part of what you have done successfully in the previous

country is applicable. Developing a new support base in both the public and private sectors is a real challenge. Interest in both sectors must be shown by a willingness to provide a portion of the financial support and to work side by side to achieve mutual objectives. As we learned the hard way, this is not the time to also change basic funding sources or project management. The entrepreneur must be free to focus on the tasks at hand.

\* A total systems approach is necessary, from the resource base itself right up through harvesting, utilization, domestic consumption, product quality and quantity, and on into export opportunities where appropriate. And all of this must be done in a sustainable and environmentally sound manner. Because of the need for an integrated approach to problem solving in the natural resource arena, in all probability you will run smack dab into the traditional organizational separation of private sector, agriculture/forestry, and rural development functions within USAID, other bilateral donor organizations, and their supporting consulting firms and governmental agencies. To overcome these separations takes education, demonstration, imagination, determination, and above all else, a great deal of patience.

#### G. Conclusions

In conclusion, many lessons have been learned since 1985 and much experience acquired. The project is far less experimental than when it began. Factors for the success or failure of different activities have been evaluated; the major ones are highlighted in this article.

As FPEI/INFORDE broadens its base of field programs to other parts of the developing world, it will continue to stress integration of its field

demonstrations, applied research, and policy dialogue. And it will continue to investigate business enterprises of all kinds—from wood to bamboo, and from sawmills to nature tourism. It will also continue to stress technical excellence, business experience, and the implementation of projects through local institutions. These efforts, consistently and patiently applied, help promote forest protection through a process of sustainable, forest-based economic development.

APPENDIX

FPEI WORKING PAPERS (THROUGH AUGUST 1990)

Economic Analysis:

- Gressida McKean. 1986. Sawmills in Ecuador: A Study of Small Sawmilling Enterprises in the Province of Pichincha. 5
- Jan Laarman. 1986. The Economic Outlook for Forestry in Tropical America: A Hazardous Period for Projections. 8
- Patrick Durst. 1986. Financial Aspects of Contract Reforestation in the Philippines. 10
- Charles McCormick. 1986. Analisis Economico de Inversiones en Plantaciones Forestales en el Ecuador. 13
- Marc McDill. 1986. Reforestation Incentives and the Economic Structure of the Charcoal Market in Minas Gerais, Brazil. 18
- Jan Laarman. 1987. Investing in Timber and Timberland in Latin America. 22
- Michael Mussack. 1987. Suggestions on Improving Log Supply to Artepratico's Sawmill in Cuenca, Ecuador. 24
- Charles McCormick. 1987. Financial Sensitivity of Alternative Forestation Incentives in Ecuador. 30
- Michael Mussack. 1988. Diagnostico Socioeconomico de los Sistemas Agroforestales de Cacao, Cafe y Arboles de Sombra Utilizados en la Produccion de Madera en la Costa de Ecuador. 35
- Michael Mussack and Jan Laarman. 1988. Farmers' Production of Timber Trees in the Cacao-Coffee Region of Coastal Ecuador. 36
- Jan Laarman and Jeffrey Prestemon. 1988. Employment and Resource Efficiency in Ecuador's Small-Scale Forest Enterprises. 40
- Jeffrey Prestemon. 1988. Efficiency and Employment in Ecuador's Sawwood Industry. 41
- Jeffrey Prestemon. 1989. Eficiencia de la Industria de la madera aserrada del Ecuador. 44
- Jan Laarman and Jeffrey Prestemon. 1989. El empleo y la eficiencia de recursos en las industrias de productos forestales del Ecuador. 45

Forest Products Trade:

- Patrick Durst, Denise Ingram, and Jan Laarman. 1986. Inaccuracies in Forest Products Trade Statistics. 14
- Jan Laarman, Gerard Schreuder, and Eric Anderson. 1987. An Overview of Forest Products Trade in Latin America and the Caribbean Basin. 21

Kerry Krutilla. 1987. A Businessman's Guide to Investment and Trade in the Forest Products Sector of Southeast Asia: Indonesia, Malaysia, and the Philippines.	32
John Welker. 1988. Application of a Dynamic Investment Scheduling Model to Import Substitution of Softwood Lumber in Jamaica.	34
Ralph Alig and Denise Ingram. 1988. Ecuador's Competitiveness in Forest Products: Some Multi-Country Comparisons.	38
Fernando Guerron and Jeffrey Prestemon. 1990. Analisis de eficiencia economica y de las ventajas comparativas del sector forestal y maderero del Ecuador.	43
Jeffrey Prestemon, Fernando Guerron, Jorge Cabrera, Mark Powell, and Timothy Stewart. 1990. Tests of a methodology to evaluate comparative advantage in forest products in the U.S. South, Chile, and Ecuador.	49
Jeffrey Prestemon. 1990. Comparing production costs in the southern states with costs in South America.	50
<u>Forest Resources Policy:</u>	
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Jan Laarman and George Dutrow (eds.). 1984. Private Enterprise Initiatives for International Forestry Development.	2
Jan Laarman and George Dutrow. 1987. A Private Enterprise Strategy for Forestry Development: Principles, Mechanisms, and Challenges.	3
Janis Petriceks. 1986. Bolivian Forest Resource and Forest Industry.	7
Jan Laarman. 1986. Forestry and Foreign Policy: The Politics of Trade and Aid in a Sensitive World.	9
Jan Laarman. 1986. A Perspective on Private Enterprise and Development Aid for Forestry.	15
Cressida McKean. 1986. The Context and Strategy of Growth of Small Furniture Enterprises: The Province of Guayas.	16
Ernst Pfeiffer. 1986. Private Sector Economic Potential, Senegal Reforestation Project.	17
Basu Rathin and Thomas Johnson. 1987. The Contribution of Forestry to Economic Development with Special Reference to Employment and Income in Developing Countries: An Annotated Bibliography.	31
Scott Lampman. 1988. Analysis of a Forestation Incentive Program in Ecuador: A Rationale for Modification and Agroforestry Application.	42

- Jeffrey Prestemon and Scott Lampman. 1989. The Third World Debt Crisis: Are There Opportunities for Forestry? 46
- Anon. 1989. The Forestry Private Enterprise Initiative: La Iniciativa Privada Forestal Para El Desarrollo. 51
- Jeffrey Prestemon and Fernando Guerron. 1990. Necesidades de asistencia tecnica en la industria forestal del Ecuador. 52
- Javier Pazmino, Consuelo Carranza, and Jeffrey Prestemon. 1990. Planificacion de la comunicacion en apoyo a proyectos desarrollo en el area forestal moderera: el caso de CORMADERA. 53
- Douglas MacKinnon. 1990. Using the Private Sector for Sustainable Forestry Development. 54

Technology Transfer:

- Harry Van Der Slooten. 1986. Research and Technical Assistance Needs of the Woodworking Industry in Ecuador. 4
- Denise Ingram, Jan Laarman, and Michael Contezac. 1986. The International Clientele Served by the Forest Products Laboratory. 19

Nature-Oriented Tourism:

- Jan Laarman. 1986. Nature-Oriented Tourism in Costa Rica and Ecuador: Diagnosis of Research Needs and Project Opportunities. 6
- Patrick Durst. 1986. Natural History and Nature-Oriented Adventure Travel for Rural Development and Wildlands Management: Diagnosis of Research Needs and Project Opportunities for the Philippines. 11
- Patrick Durst. 1986. Natural History and Nature-Oriented Adventure Travel for Rural Development and Wildlands Management: Diagnosis of Research Needs and Project Opportunities for Thailand. 12
- Mystie Wilson. 1987. Nature-Oriented Tourism in Ecuador: Assessment of Industry Structure and Development Needs. 20
- Jan Laarman and Patrick Durst. 1987. Nature Travel in the Tropics. 23
- Patrick Durst and Denise Ingram. 1987. How Well Do Developing Countries Promote Nature-Oriented Tourism by Mail? 25
- Denise Ingram and Patrick Durst. 1987. Marketing Nature-Oriented Tourism for Rural Development and Wildlands Management in Developing Countries: A Bibliography. 26
- Myatie Wilson and Jan Laarman. 1987. Nature Tourism and Enterprise Development in Ecuador. 27

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Robert Healy. 1988. Economic Considerations in Nature-Oriented Tourism: The Case of Tropical Forest Tourism.	39
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