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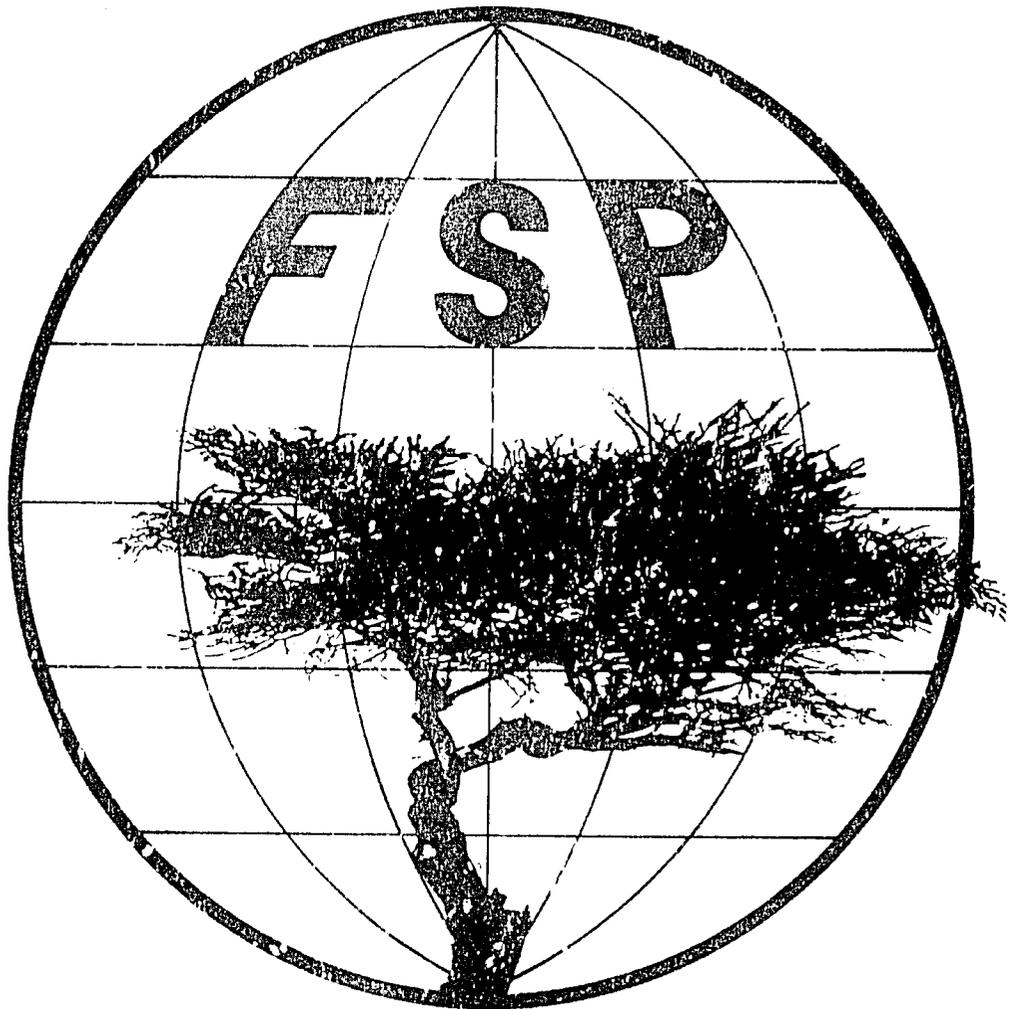


United States  
Department of  
Agriculture

Forest Service  
and  
Office of  
International  
Cooperation and  
Development

*Sponsored by the*  
United States  
Agency for  
International  
Development

# Progress Report of the Forestry Support Program (FSP) 1987



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Washington, DC

The Forestry Support Program (FSP) is managed jointly by the U.S. Department of Agriculture's Forest Service (FS) and Office of International Cooperation and Development (OICD), with funds provided by the Agency for International Development (AID) Bureau for Science and Technology (S&T) through its Office of Forestry, Environment, and Natural Resources (FENR).

## Preface

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The fiscal year (FY) 1987 progress report marks a significant change in reporting style for the Forestry Support Program (FSP). Unlike previous years, when the report was partially intended to bring wide recognition to an expanding portfolio of natural resource endeavors by the Agency for International Development (AID), the 1987 report focuses more specifically on FSP achievements during this year. Previous FSP progress reports (especially the 1985 and 1986 reports) also emphasized the history of AID's involvement in forestry, leading to the establishment of FSP in 1981, as well as FSP's structure and organizational relationships with other institutions. As important as these topics are, they are not repeated here. Interested readers should refer to earlier progress reports for such background information.

This document is a report to AID, highlighting FSP's progress during the past year in collaboration with the Department of Agriculture's Office of International Cooperation and Development (OICD). It demonstrates FSP's key support to AID country missions and central bureaus, as well as its leadership in a variety of areas affecting the Agency's forestry and related natural resources management portfolio.

The chapters of this report correspond to the basic objectives of FSP, as determined by its funding source, the Forest Resources Management Project (No. 936-5519) in the Office of Forestry, Environment, and Natural Resources (FENR) of AID's Bureau for Science and Technology (S&T). The chapters are "Technical Consultations," "Roster Development and Referrals," "Forestry Program Studies and Technical Reference Services," "Training," "Technical Support to Research," "Forestry Private Enterprise," "Agroforestry," an "Food Aid and Voluntary

Organization-Supported Forestry." The report also contains appendixes that provide a record of FSP roster use, a summary of overseas consultations funded by FSP, profiles of new FSP staff members, and a list of documents produced or influenced by FSP during FY 1987.

When it was initiated as a new program, FSP was flush with funds. While it was still building its staff and establishing its legitimacy, FSP was able to undertake "big ticket" activities, such as underwriting the startup of the International Seminar on Forest Administration and Management, publishing a major Spanish-language textbook on agroforestry, and directly sponsoring numerous overseas consultations by U.S. resource specialists. Many major forestry activities previously funded by FSP are now institutionalized and, for the most part, are financially self-sustaining; FSP has successfully completed its motivating role in them.

In the 7 years since its establishment, FSP has become an essential element in AID's natural resource management efforts. FSP provides a focal point for forestry activities within AID, which is a highly decentralized organization. FSP also continues to be the primary link between the natural resources community at large and AID's expanding efforts in forestry and natural resources. Although the comparative "wealth" of earlier years no longer exists, FSP has initiated several new studies and activities that will provide the basis for continued leadership and coordination of AID's forestry portfolio.

The key to FSP's success is service, both to the missions and to the central bureaus. As illustrated in the following chapters, FSP's many services to AID continue to expand and improve.

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## List of Abbreviations

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AFR	AID Bureau for Africa
AID	Agency for International Development
AIMA	Wood Products Manufacturers Association of Ecuador (translated)
ANE	AID Bureau for Asia and the Near East
BOSTID	NAS Board on Science and Technology for International Development
CATIE	Center for Tropical Agricultural Research and Training (translated), Costa Rica
CORMADERA	Center for Technical Support to Wood Products and Furniture Industries of Ecuador (translated)
CUMAT	Center for the Investigation of Land Use Capability of Bolivia (translated)
DASP	USDA FS Disaster Assistance Support Program
ENR	AID ANE Environment and Natural Resources Office
EY	AID Office of Energy
FAO	Food and Agricultural Organization of the United Nations
FENR	AID Office of Forestry, Environment, and Natural Resources
FFP	AID Office of Food for Peace
F/FRED	Forestry/Fuelwood Research and Development Project
FPEI	Forestry Private Enterprise Initiative of FSP
FRM	AID Forest Resources Management Project (No. 936–5519)
FS	USDA Forest Service
FSP	USDA FS Forestry Support Program
FVA	AID Bureau for Food for Peace and Voluntary Assistance
FY	Fiscal year
ICRAF	International Council for Research in Agroforestry, Kenya
IDB	Inter-American Development Bank
IIED	International Institute for Environment and Development
INFORDE	FPEI Private Forestry Initiative for Development (translated), Ecuador
INSOTEC	Institution for Socio-Economic and Technological Research (translated), Ecuador
ISEC	USDA OICD International Science and Education Council
ISTF	International Society of Tropical Foresters
IUCN	International Union for Conservation of Nature and Natural Resources
IUFRO	International Union of Forestry Research Organizations
LAC	AID Bureau for Latin America and the Caribbean
NAPFSC	National Association of Professional Forestry Schools and Colleges
NCSU	North Carolina State University
NFTA	Nitrogen Fixing Tree Association
NGO	Nongovernmental organization
OFDA	AID Office of U.S. Foreign Disaster Assistance
OICD	USDA Office of International Cooperation and Development
OTS	Organization for Tropical Studies, Costa Rica
PPC	AID Bureau for Program and Policy Coordination
PVC	AID Office of Private and Voluntary Cooperation
PVO	Private voluntary organization
RD	AID Office of Rural and Institutional Development
SCFER	Southeastern Center for Forest Economics Research
SAF	Society of American Foresters
S&T	AID Bureau for Science and Technology
USDA	U.S. Department of Agriculture
WFP	UN World Food Program

## Chapter 1 Technical Consultations

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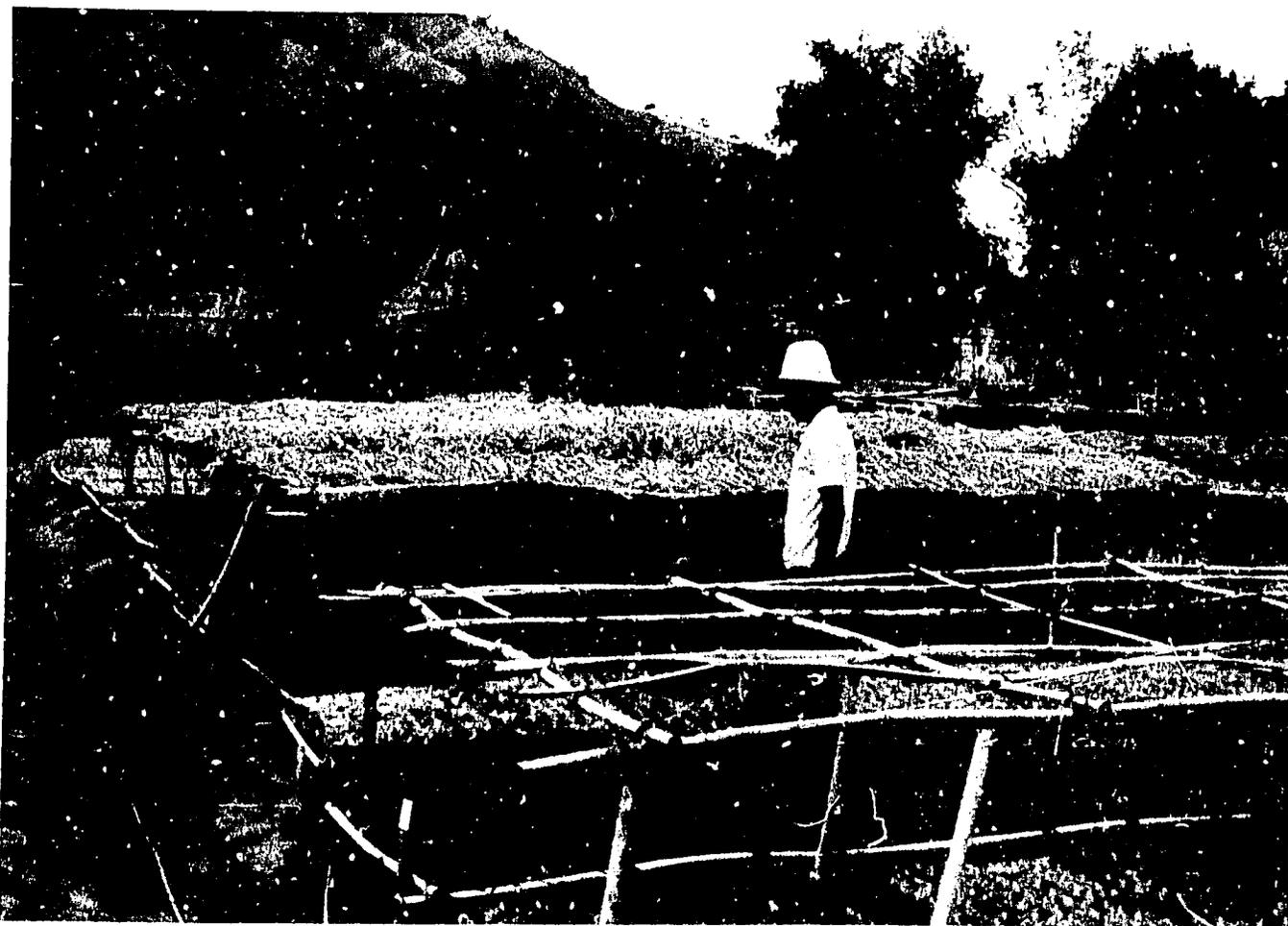
### Overview

Since project activities began in 1981, FSP has worked to make AID officials more aware of the potential contributions of the forestry subsector in national and regional development. To do so, it often was necessary for FSP to underwrite the cost of advisers who designed and advised key projects in a number of countries. Forestry has now become so widely accepted by AID missions as a vital economic subsector worthy of concentrated development efforts that "promotional" central funding is less often needed. AID missions are now more willing to fund consultants directly to design, implement, and evaluate forestry and natural resource projects. FSP therefore has gradually decreased the number of overseas consultations that it fully funds. However, FSP continues to play a vital role by identifying advisers to work directly with AID contractors and AID missions overseas, partially funding some overseas consul-

tations, making its own staff available for short-term consulting assignments, and securing contributions of staff time from the U.S. Department of Agriculture's (USDA's) Forest Service and other State and Federal agencies. In addition, FSP continues to fully fund a few critical consultations in select countries each year where the likelihood of AID mission followup is high.

To identify the most qualified available advisers, FSP conducts searches of its roster of forestry and natural resources experts. The computerized roster system allows FSP to identify consultants with appropriate language skills, experience, education, and technical expertise from among more than 2,500 registered specialists (see Chapter 2). The FSP roster was used to identify candidates for 133 short- and long-term assignments in FY 1987 (Appendix A).

Figures 1.1 through 1.3 indicate the countries that received technical assistance from FSP staff and consultants who were fully or partially funded by FSP in FY 1987. The maps reflect AID geographical



*FSP sent a mycorrhizae expert to Haiti to advise AID's Agroforestry Outreach Project. (Photo by P. Durst.)*

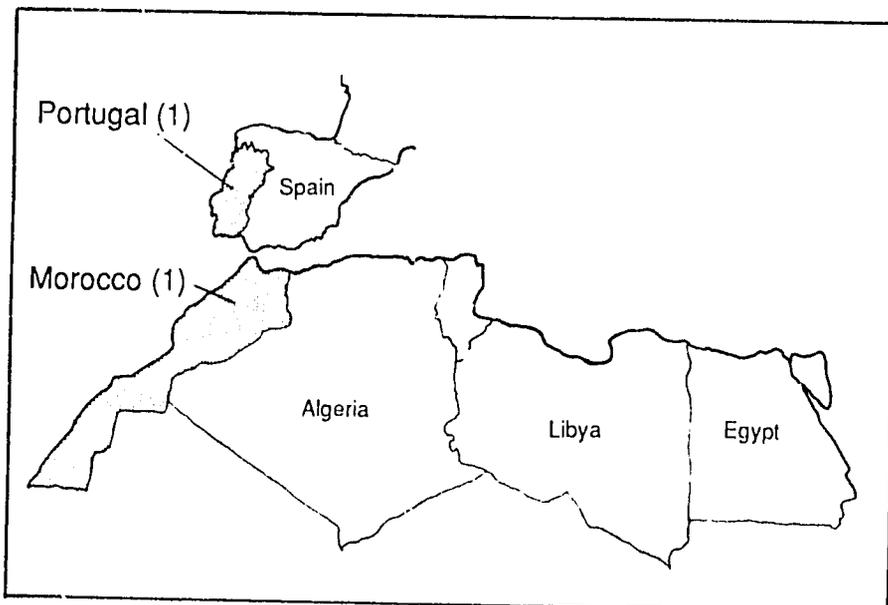
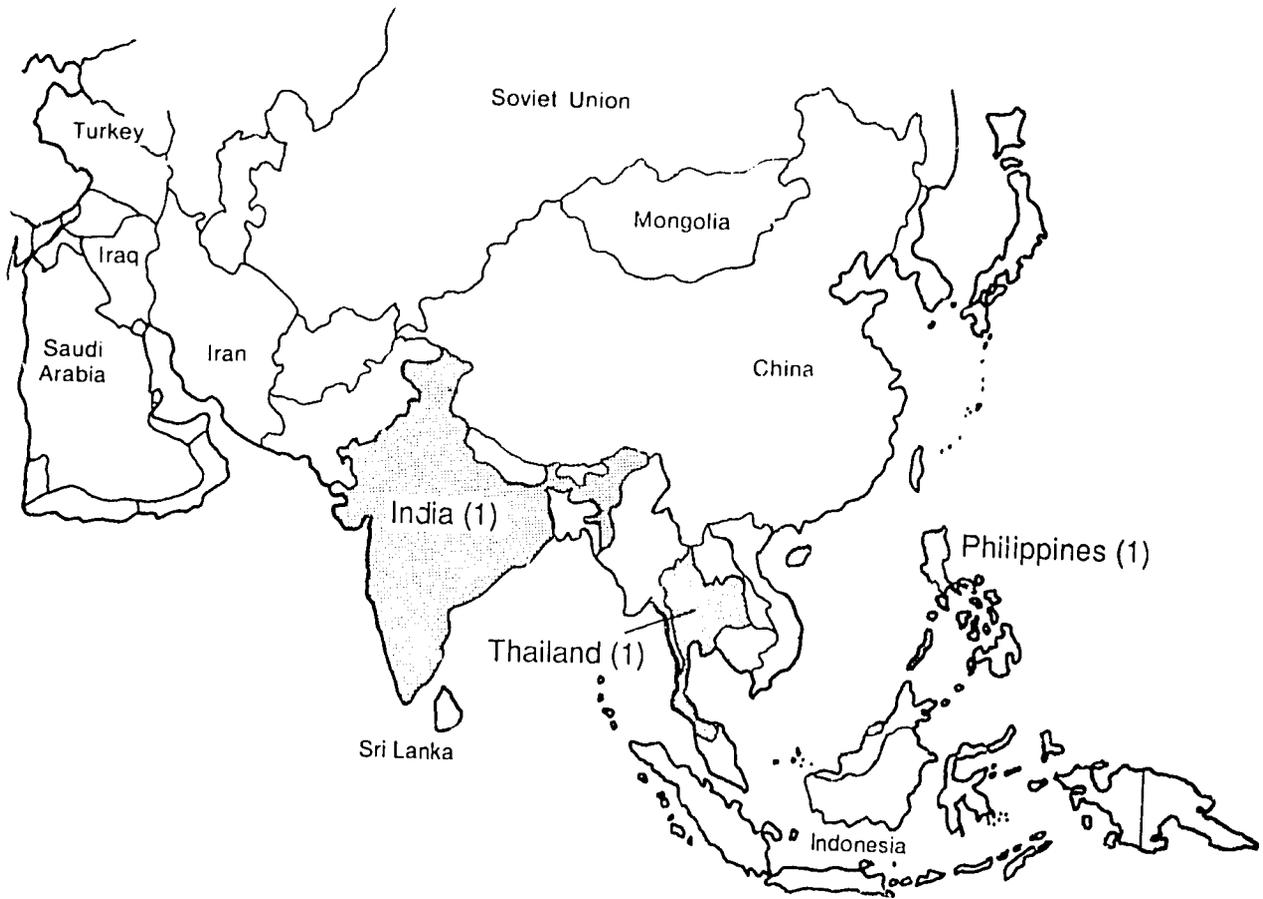


Figure 1-1: Technical consultations provided by FSP in Asia and the Near East, FY 1987.



Figure 1-2: *Technical consultations provided by FSP in Africa, FY 1987.*



Figure 1-3: Technical consultations provided by FSF in Latin America and the Caribbean, FY 1987.

designations (for example, Portugal and Morocco are administered by the Asia and Near East Bureau of AID). Appendix B provides more detailed information on these consultants and their assignments.

Most of FSP's consulting activity in FY 1987 was concentrated in Latin America. FSP's support of the Regional Forestry Adviser for the Caribbean, and its activities associated with the Forestry Private Enterprise Initiative in Costa Rica and Ecuador, account for the disproportionate level of consulting activity in Latin America relative to other regions. In FY 1987, FSP funded 39 consultations in Latin America, 15 in Africa, and 5 in Asia and the Near East.

The number of overseas consultations fully or partially funded by FSP declined slightly in FY 1987, and the average length of consultations dropped from about 18 days in FY 1986 to 15 days in FY 1987. The lengths of technical assistance visits to other countries by FSP staff members averaged about 8 days.

### Illustrative Consultations

The following examples highlight the types of technical consultations that FSP provided in FY 1987:

- The FSP Program Coordinator for Latin American and the Caribbean collaborated with the Forestry Adviser for AID's Regional Office for Central America Programs to write an environment assessment for the Honduras Forestry Development Project.
- A private consultant was contracted by FSP (through OICD) to advise the Sudanese government on the reorganization of its forestry administration. The consultant also accompanied four Sudanese officials to Zimbabwe to study the forestry administrative structure of that country.
- The FSP Special Projects Coordinator spent 4 weeks analyzing the financial viability of a contract reforestation program in the Philippines. The contract approach, which is designed to be more cost-effective and performance oriented than traditional government reforestation programs, is being implemented in cooperation with the Philippine Department of Environment and Natural Resources during the second phase of AID's Rainfed Resources Development Project.
- FSP paid the travel expenses for a Forest Service inventory specialist to participate in an evaluation of AID's Forestry and Land Use Planning Project in

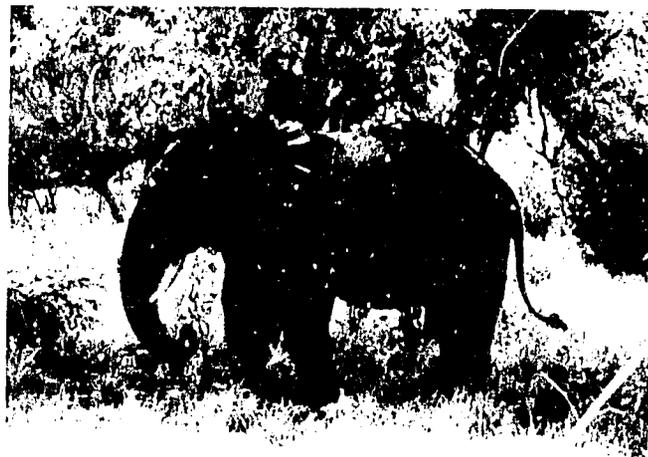
Niger. The Forest Service contributed funds to cover the specialist's salary while he was in Niger.

- FSP's Agroforestry Coordinator assisted the AID mission in Jamaica with preparation of the "Hillside Agriculture Project Paper" and recommended agroforestry activities in the project area.
- Travel support was provided by FSP (through OICD) to send a University of Hawaii mycorrhizae expert to Haiti to advise on the potential for introducing mycorrhizae into the nurseries of AID's Agroforestry Outreach Project.
- The FSP Program Coordinator for Africa helped develop a Biological Diversity Action Plan for the AID mission in Morocco.

### Outlook

FSP's reputation for identifying highly qualified resource consultants for AID missions, bureaus, and cooperators (often on very short notice) ensures that FSP will continue to play a major role in directing technical assistance for AID in the future. FSP anticipates continued strong demand for agroforesters, watershed managers, economists, and extension specialists in FY 1988, as well as an increasing number of requests for specialists in microenterprise development, biological diversity, sustainable agriculture in Africa, and coastal resources management.

The heavy concentration of overseas travel to Latin America and the Caribbean that occurred in FY 1987 is expected to decrease in FY 1988. The "seed money"



*FSP funded several consultations to help AID develop Biological Diversity Action Plans. (Photo by L. Duvall.)*

from the Office of Forestry, Environment, and Natural Resources of AID's Office of Science and Technology, provided through FSP to support the Caribbean Forestry Adviser, has been instrumental in establishing that position. FSP funding is no longer needed to support the position, because full funding is expected from AID's Bureau for Latin America and the Caribbean, and from the Forest Service.

FSP expects to maintain its high level of interaction with AID missions and projects in FY 1988 through

direct staff consultations. Staff travel may increase in FY 1988, since, for the first time, FSP will be fully staffed with three Regional Coordinators, a Social Forestry Coordinator, an Agroforestry Coordinator, a Food and Voluntary Assistance Coordinator, a Special Projects Coordinator, a Training Coordinator, and a Program Manager (see Appendix C for the FSP organizational chart).

## Chapter 2

### Roster Development and Referrals

#### Roster System Development

Significant improvements were made to the FSP roster of forestry and natural resources expertise in 1987, enhancing FSP's ability to respond to requests for consultants from AID, AID contractors, and AID cooperators. Most important was the transfer of the roster from the original list processing system to a microcomputer. The new dBASE III-run system enables more rapid searches and increased search capability. A "Roster File Search and Maintenance Manual" was drafted to facilitate internal use, and several companion computer programs were developed to simplify roster maintenance.

Following the transfer of roster records to the new system and a revision of the roster registration packet, a complete update of all roster records was initiated. Each roster registrant was mailed a summary of his or her biographical data and asked to verify its accuracy or make desired changes or additions. Responses had been received by about one-half of all roster registrants by the end of FY 1987.

The roster grew from about 2,200 names in September 1986 to over 2,500 at the end of FY 1987, despite the fact that about 50 registrants asked to be removed from the system. Growth can be attributed to numerous promotional efforts made by FSP during the year:

- Nationwide announcements made through the personnel departments of the Forest Service (FS), the Bureau of Land Management, and the Bureau of Indian Affairs produced over 350 requests for roster packets
- A November 1986 *Journal of Forestry* article entitled "Making the Match-Up" resulted in over 75 requests for roster information
- Letters were mailed to the Historically Black Colleges and Universities ("1890 Schools") and to all participants in the November 1986 Gainesville, Florida, conference "Current Topics in Forest Research: Emphasis on Contributions by Women Scientists," encouraging women and minority resource specialists to register with FSP
- An announcement in the *Commerce Business Daily* prompted over 50 requests for roster packets
- Letters prepared by FSP and signed by US Chief F. Dale Robertson encouraged State Foresters, Regional Foresters, and FS Research Station Directors to support the applications of qualified employees under their supervision

- Short announcements were prepared for publication in *Soils Notes* and *Women in Natural Resources*

In addition to these announcements, FSP published a detailed Privacy Act notice in the *Federal Register* in April. The notice described the purpose and uses of the roster and the precautions taken by FSP to protect the privacy rights of roster registrants.

The mix of skills and experience possessed by roster registrants remains essentially the same as described in the *Progress Report of the Forestry Support Program (FSP) 1986* (pp. 15, 17). About 85 percent of the roster registrants have previous overseas development experience, primarily with AID, the Peace Corps, and the Food and Agriculture Organization (FAO) of the United Nations. Two-thirds of the registrants have advanced degrees. About one-fifth of the registrants are currently affiliated with private



The FSP roster system was expanded in 1987 to include emergency management specialists to assist OFDA and DASP. (Photo by A. Solario.)

industry; one-fourth, with universities; another fourth, with various U.S. Government agencies; and about one-third, with other organizations, such as conservation organizations, multilateral development banks, private voluntary organizations, and State governments. A small increase in the percentage of registered consultants with private-sector orientation resulted from the *Journal of Forestry* article mentioned above.

To help AID's Office of U.S. Foreign Disaster Assistance (OFDA) and the FS Disaster Assistance Support Program (DASP) respond to natural disasters abroad, the FSP roster system was expanded in 1987 to include emergency management specialists. FSP worked closely with DASP during the year to integrate disaster management specialists into the system. About 100 roster registrants now list disaster or emergency management skills, and the number is increasing steadily.

During 1987, FSP continued to work closely with other organizations that manage similar natural resource rosters, especially the U.S. Department of Agriculture's Office of International Cooperation and Development, the International Society of Tropical Foresters, and the International Union for the Conservation of Nature and Natural Resources (IUCN). FSP also helped the National Park Service establish a roster patterned after the FSP system and provided advice to the FS Northeast Area State and Private Forestry Office on roster development.

## Referrals of Resource Specialists

The FSP roster continues to serve as the primary mechanism for FSP to identify advisers and specialists to assist AID with the design, implementation, and evaluation of its natural resource development projects worldwide. The roster also is used extensively to identify potential candidates for positions with AID contractors and AID cooperating organizations, such as FAO, the World Wildlife Fund, the World Bank, the International Council for Research in Agroforestry (ICRAF), the Inter-American Development Bank (IDB), the Smithsonian Institution, the Pan-American Development Foundation, the Nitrogen Fixing Tree Association, the International Institute for Environment and Development (IIED), the Center for Tropical Agricultural Research and Training (CATIE), and the Peace Corps.

Over 130 roster searches were made by FSP in support of international forestry programs during FY 1987 (Appendix A). A wide range of resource manage-



*AID missions frequently request specialists to advise watershed managements projects. (Photo by P. Durst.)*

ment skills was requested by AID project managers during the year, although agroforestry, economics, and watershed management skills continued to be in greatest demand. As AID began initiating its biological diversity mandate in 1987, the demand for botanists, ecologists, wildlife managers, and park specialists also increased noticeably.

In addition to direct referrals of advisers, FSP alerted hundreds of roster registrants to job vacancies during the year by mailing notices of 29 long-term international positions to potential applicants with appropriate skills.

## Outlook

With successful transfer of the roster to a dBASE III system, attention will focus on reducing coding errors and updating registrants' biographical data in 1988. Inactive files will be purged from the system, and efforts will be made to contact qualified registrants

who have failed to update their qualifications and availability.

FSP will continue to assist other organizations in developing natural resource rosters. FSP and DASP are tentatively planning to convene a meeting of roster managers in early 1988 to share ideas and experiences in roster development. FSP also has been asked to help the National Oceanic and Atmospheric Administration develop a roster system.

Efforts to attract additional qualified resource specialists to the roster will continue in 1988 by

publicizing the roster in professional journals and newsletters and at meetings and conferences. Experts in biological diversity, private-sector development, food aid, and nongovernmental organization cooperation will be likely targets for recruitment to the roster. FSP also will make a renewed effort to register top-level U.S. scientists who have had limited previous international experience but who are clearly leaders in their areas of work. As in the past, FSP will continue efforts to enroll qualified women and minority resource specialists in the roster system.

## Chapter 3

# Forestry Program Studies and Technical Reference Services

### Forestry Program Studies

Two major forestry program studies were completed by contractors for FSP in 1987. The first focused on U.S. food aid programs and compiled an inventory of AID food-aid-supported forestry development projects. The second identified developing-country nationals studying forestry and natural resources in the United States under grants and fellowships provided by AID, the Food and Agricultural Organization (FAO) of the United Nations, and other donors.

Computerized data bases that can be updated easily as new food aid and training activities are initiated by AID were developed during the course of the two studies. These new data bases provide FSP with additional tools for tracking AID's forestry and natural resources project activities and complement similar systems established in 1986 that monitor AID's forestry and natural resources projects, private-sector projects with forestry potential, and the professional personnel working with AID forestry projects.

### Food-Aid-Supported Forestry Projects Inventory

U.S. surplus food is donated or sold at concessionary rates to developing countries to support self-help projects under a variety of programs (including Public Law 480 of the Agricultural Trade and Development Act of 1954, section 416 of the Agricultural Act of 1949, the Food Security Wheat Reserve Act of 1980, and the Food Aid Convention of 1980). Workers are paid with the donated food, or the food is resold by recipient governments, which then use the proceeds to fund development projects. The United States is also the largest contributor of food to the United Nations World Food Program (WFP), which uses food to fund a variety of development activities.

Increasing attention is being focused on U.S. food aid as a mechanism for accomplishing forestry development objectives. There has been almost no technical oversight of forestry activities funded by food aid, however, by either AID or the Department of Agriculture (USDA)—the two U.S. Government agencies charged with implementing food aid programs.

The food-aid-supported forestry projects inventory was conducted to increase understanding of existing food aid projects and to gain a better perspective on the potential for food-aid-supported forestry. The study updated and expanded previous information

compiled by FSP (1984 report by Peg Clement on Public Law 480-supported forestry projects) and drew from data provided by the following sources:

- Interviews with AID Bureau for Food for Peace and Voluntary Assistance (FVA) Office of Food for Peace (FFP) staff members;
- FVA/FFP cables, project papers, work plans, agreements, financial reports, and commodity reports;
- Interviews with various private voluntary organization (PVO) staff members;
- Department of State Bureau of Treaty Affairs Public Law 480 title I and title III agreements;
- WFP reports and documents;
- Interviews with FSP and AID forestry personnel; and
- FSP and AID files.

No central source of information exists on the forestry components of food aid programs, but the



*Increasing attention is being focused on food-aid-supported forestry activities. (Photo by T. Resch.)*

study identified a total of 102 food aid projects with forestry or natural resource components. Of these, 7 are funded by title I or title III of Public Law 480, 22 (primarily food aid grants to support PVO-sponsored food-for-work activities) are funded by title II of Public Law 480, and 73 are sponsored by the WFP.

The impact of food-aid-supported forestry programs is clearly evident when one realizes that the value of forestry development activities funded by U.S. food aid (including U.S. contributions to WFP forestry projects) nearly equals the total U.S. direct dollar commitments for "traditional" forestry assistance provided by AID (Fig. 3.1). Food-aid-supported forestry activities are especially important in Africa, where the value of food aid for forestry is more than double the value of directly funded AID bilateral forestry development projects.

#### Study of Developing-Country Nationals Training in the United States

The recently updated edition of FSP's *Profiles of U.S.A. Forestry Schools* indicates that over 500 students

from developing countries enroll at U.S. forestry schools each year. Some of these students are supported by AID, FAO, or other donor agencies, but records of this support are fragmented and incomplete. To gain a better understanding of AID's role in forestry training, FSP (through OICD) contracted a study of developing-country nationals participating in short courses in the United States or training at U.S. forestry schools.

The study identified 373 developing-country nationals who trained in the United States between 1984 and 1987 and were sponsored by AID or FAO. AID funded 297 of these participants. More AID-funded participants came from Latin America than from all other regions combined (Fig. 3.2), and most spent less than 35 days in the United States (Fig. 3.3). More than 20 percent of the participants came to the United States for fire suppression training by the Forest Service at Marana, Arizona. Another 20 percent attended the International Seminar on Forest Administration and Management, which is conducted cooperatively by the University of Michigan and the Forest Service. During the period studied, 39 participants sponsored by AID enrolled in degree programs at U.S. forestry schools.

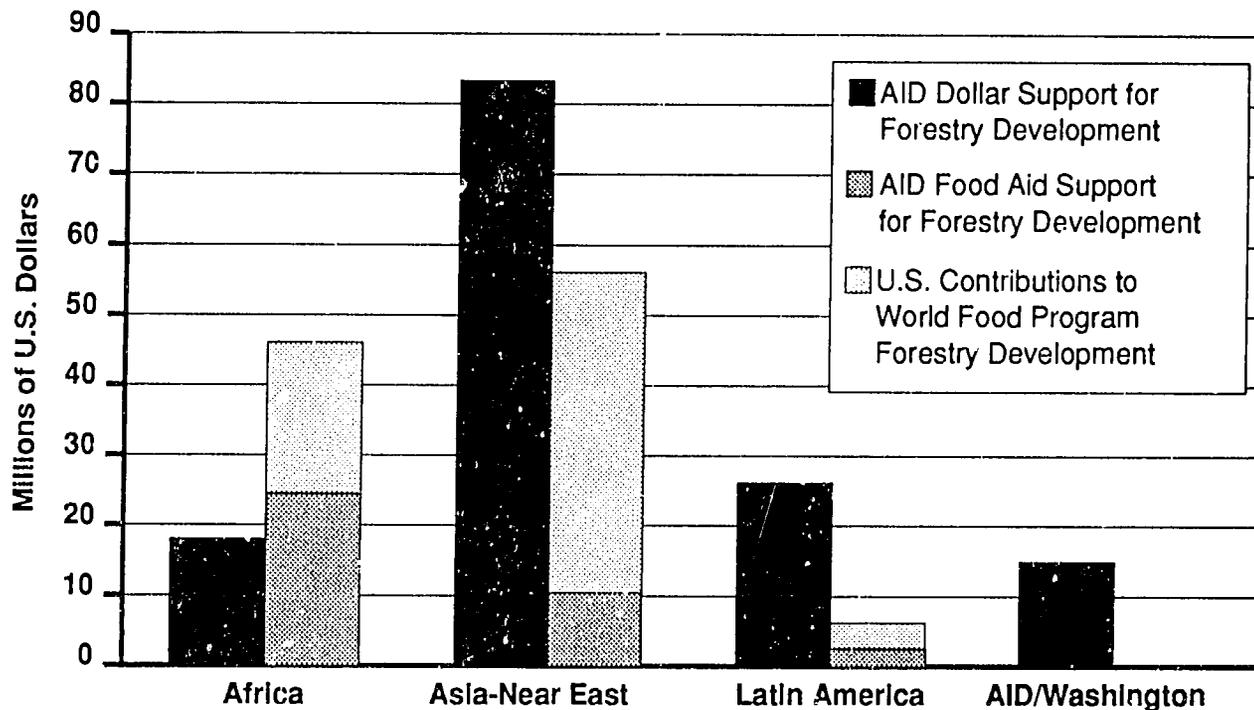


Figure 3-1: Dollar aid and food aid for forestry and natural resources, FY 1987.

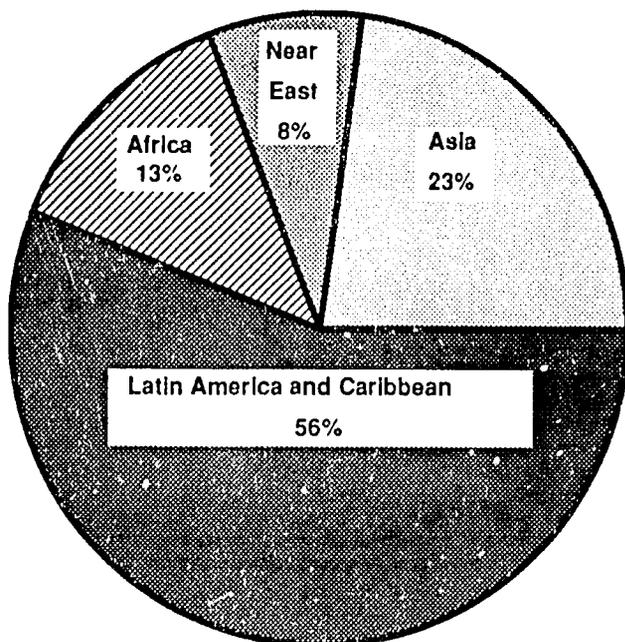


Figure 3-2: Geographic origins of AID-funded forestry trainees in the United States, 1984-87.

A data base containing information on AID- and FAO-funded forestry trainees in the United States was developed during the study. For each participant, the data base contains home-country address, U.S. advisers and contacts, sponsoring organization, degree objective or short course attended, dates and length of stay in the United States, area of study or technical specialization, contractor managing the training, and amount of funding contributed by AID or FAO. The data base provides FSP with a mechanism for tracking the progress of AID-funded training participants while they are in the United States and for maintaining contact with them after they return home.

### Technical Reference Services

FSP continued to provide AID missions, Peace Corps offices, and cooperating organizations with technical literature in 1987. This literature included books, journal articles, proceedings, bibliographies, and reports that are not readily available from traditional libraries or from commercial sources. By using FSP's access to dozens of electronic data bases, literature searches were conducted for several specific problems. For example, FSP searched several data

bases for information about biological diversity for the Peace Corps in Morocco. The AID mission in Nepal requested a variety of reports on the use of pulp effluent to irrigate crops. FSP provided the AID/India mission with information about the use of brackish water for irrigating tree crops. The AID mission in Thailand was provided a series of reports describing the environmental effects of planting eucalypts.

The amount of time devoted to each literature search varies with the complexity of the request. The FSP staff continues to receive more than one request per day. Although many of the requested documents are available in FSP's offices, about one-fifth of the requests are filled with materials obtained from other institutions. FSP enjoys close working relationships with USDA's National Agricultural Library, the Institute of Tropical Forestry in Puerto Rico, and the Technical Information Division of OICD, all of which assist FSP in locating and obtaining literature.



FSP supplied the AID mission in Thailand with reports on the environmental effects of planting eucalypts. (Photo by T. Resch.)

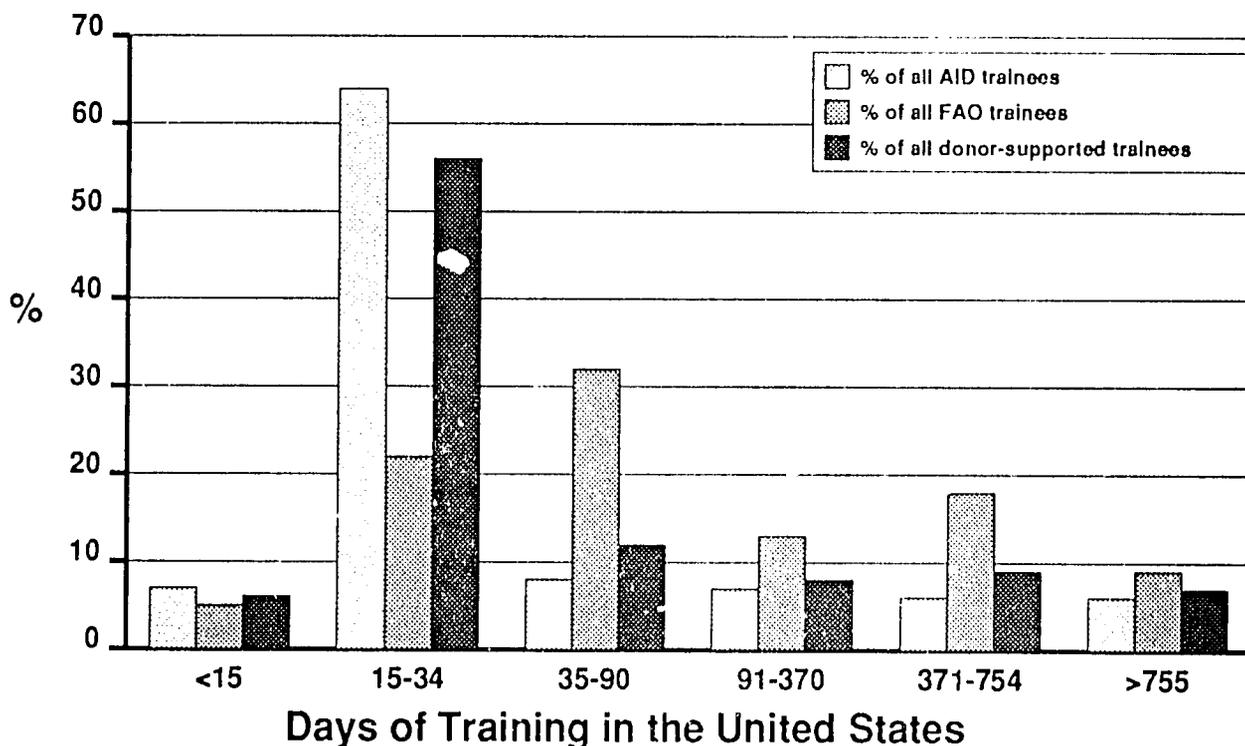


Figure 3-3: Days of training for donor-funded trainees in the United States, 1984-87.

With the help of a summer intern, FSP compiled a list of all publications, reports, and other documents received by FSP within the past 2 years. The 60-page "Publications Bibliography," organized by subject area, is now available to all interested development workers. A similar compilation, "Newsletters and Journals," was also prepared by FSP in 1987; descriptions of forestry-related newsletters and journals, and addresses where they can be ordered, are included in the 12-page summary.

## Related Communications

FSP regularly communicates information on new technologies and recent developments in forestry and natural resources to AID employees and cooperators in the field. For many development workers assigned overseas, the *FSP Quarterly Memo* is the most comprehensive and up-to-date source of information on forestry and natural resources. The 30- to 60-page *Quarterly Memos* produced by FSP in 1987 included information on AID and FSP activities, recent news from the forestry development community, position

vacancies, new projects and activities, academic programs, short courses, meetings and conferences, new journals and bulletins, and recent publications. The *FSP Quarterly Memo* is distributed to approximately 500 forestry and natural resource development workers worldwide every 3 months.

During FY 1987, FSP reported its current activities with the monthly *FSP Periodic Report*, distributed to 115 (up from 85 in 1986) AID direct-hire employees, AID contractors, and cooperating officials working with associated organizations throughout the world. The 8- to 12-page *Periodic Report* summarizes FSP support to AID bureaus and missions, general Agency support, visitors to the FSP offices, upcoming events, and new publications. FY 1987 mailings of the *Periodic Report* also included special enclosures reporting on the Collaborative Workshop on Food-Aid Assisted Forestry/Natural Resources in Africa, FSP's training strategy, the International Institute for Environment and Development's (IIED's) Country Environmental Profiles and Natural Resources Assessments, and the World Bank's new environmental policy.

Fourteen seminars were presented by guests of FSP during FY 1987 (see box at right) as part of FSP's

continuing effort to inform the Washington, D.C.-based forestry and development community of the progress of field projects and research initiatives. The FSP seminars are presented in an informal setting that fosters interaction and the establishment of contacts between visiting field personnel and the Washington-area forestry community. Notices of the FSP-sponsored seminars are sent to approximately 100 people in the Washington area, and 15 to 50 individuals usually attend.

## Outlook

Late in FY 1987 FSP contracted (through OICD) an update of FSP data bases on AID's forestry and

natural resources projects. New projects, initiated since the data bases were developed in 1986, will be added to the system, and budget figures will be updated. The revised data bases will provide much of the supporting data for AID's Report to Congress on tropical forests and biological diversity, which will be presented on Capitol Hill in February 1988.

The contractor also will be developing two new FSP data bases during 1988 to help track AID's forestry and natural resource programs. The first will focus on AID-funded forestry activities being implemented by PVOs and nongovernmental organizations. The second will concentrate on AID-financed small activities in forestry and related natural resources (for example, Science Advisor grants, AID Bureau for Science and Technology (S&T) Small Activity Fund projects, AID Bureau for Program and

### Speakers and Subjects at FSP-Sponsored Forestry Seminars

- **Chuck Schnell**, Resident Director of the Organization for Tropical Studies in Costa Rica, "The Role of an Ecological Field Station in Management of Fragile Lands," October 1, 1986
- **Vincente Molinos**, Market Development Specialist with the S&T Office of Forestry, Environment, and Natural Resources (FEN/R)-funded Forestry Private Enterprise Initiative (FPEI) in Quito, Ecuador, "Current Activities in Ecuador," October 15, 1986
- **Clive Malcolm**, Principal Research Officer of the Western Australia Department of Agriculture, "Productive Use of Salt-Tolerant Plants in Developing Countries," October 20, 1986
- **Julian Evans**, IIED Forestry Program Director, "Productivity of Tropical Plantations: Is It Sustainable? (A Report on Third Rotation Yields in Swaziland)," October 24, 1986
- **Mark Plotkin**, Plant Conservation Program Director, World Wildlife Fund-U.S., "The Outlook for New Agricultural, Industrial and Medicinal Products from the Tropics," November 12, 1986
- **Loren Ford**, Caribbean forestry adviser, "Forestry Sector Activities in the Caribbean Basin," December 15, 1986.
- **Peter Felker**, Caesar Kleberg Wildlife Research Institute, "*Prosopis*, *Leucaena*, and *Opuntia*: Species for Dryland Forestry," March 16, 1987
- **Michael Sweatman**, Chairman of the Board of Advisers of the Fourth World Wilderness Congress and Director of the International Wilderness Leadership Foundation, "A Strategy to Increase the Resources Available for Natural Resources and Environmental Projects in Developing Countries," April 8, 1987
- **Alan Grainger**, Gilbert F. White Visiting Fellow at Resources for the Future, "Projected Deforestation Rates and Tropical Hardwood Supplies," April 16, 1987
- **James Burchfield**, International Forestry Seminar Director, and **Paul Nowak**, University of Michigan, "International Forestry Seminar: Prospects for the Future," May 6, 1987
- **Florencia Montagnini**, Organization of Tropical Studies, "S&T/FENR Sponsored Agroforestry Manual (*Sistemas Agroforestales*)," August 13, 1987
- **Douglas MacKinnon**, FPEI Administrator, "AID Approaches to Forestry Through the Private Sector: The FPEI/INFORDE Experience in Ecuador," August 17, 1987
- **Dagmar Werner**, Smithsonian Tropical Research Institute, "Combining Wildlife Management (Iguanas) with Agroforestry in Panama," September 28, 1987
- **Audace Kabayanda**, Director General of the Burundian National Institute for the Conservation of Nature (INCN), "National Parks, Reserves, and Natural Monuments of Burundi," September 30, 1987

Policy Coordination (PPC) studies and grants, and AID Office of U.S. Foreign Disaster Assistance (OFDA) activities).

Drawing upon information from the updated FSP data bases of AID's forestry projects, from Public Law 480 and training studies completed this year, and from the new data bases to be created in 1988, the contractor will prepare a publication summarizing U.S. contributions to tropical forest management, protection, and development. The summary report should be available for distribution in late 1988.

Other organizations also maintain data bases that complement FSP's data bases on AID's resource-related projects. IIED, for example, maintains information on AID's activities to support biological diversity, and Volunteers in Technical Assistance has recently compiled data describing AID's efforts to promote renewable energy in developing countries for S&T's Office of Energy (EY). FSP will continue to work with S&T officials and contractors in 1988 to explore opportunities to integrate and institutionalize the monitoring of all forestry, environment, energy, biological diversity, and natural resource projects funded by AID.

Discussions are under way that may lead to an FSP-funded study of the status and requirements of all active AID forestry projects. The study would result in a prospectus describing AID's forestry projects, scheduled activities, and anticipated technical requirements for implementing projects. The prospectus would include a schedule of planned Project Identification Document reviews, Project Paper development (project design) activities, midproject reviews, and final project evaluations. Such a prospectus would help AID officials, contractors, and consultants to better anticipate the technical needs of AID forestry projects.

FSP will continue to collect and catalog technical reference materials in FY 1988, paying special attention to documents, reports, and evaluations that are not readily available in other forestry libraries. These documents will be noted in the *FSP Periodic Report* and the *FSP Quarterly Memo*. FSP will continue to conduct special literature searches and help locate reference materials requested by AID bureau and mission personnel, AID contractors, and Peace Corps Volunteers. The FSP-sponsored forestry seminars will continue in FY 1988.

## Chapter 4 Training

### Forestry Training Strategy

In FY 1987 the FSP Training and Education Coordinator updated the FSP training strategy in consultation with other FSP staff members, and with forestry advisers and training officers in AID bureaus. The strategy focuses on three priorities: (1) providing assistance to AID missions and bureaus by informing them of training opportunities, arranging fellowships for training host-country nationals to meet critical mission needs, and advising on the design, implementation and evaluation of training activities; (2) developing training materials and courses that advance AID goals; and (3) fostering linkages with the U.S. and foreign training communities to improve training of developing-country students funded by AID.

### Assistance to AID Missions

A major training-related activity of FSP involves sending telegrams and brochures and other descriptive materials through State Department channels to AID missions that might benefit by enrolling participants in recommended workshops, short courses, or seminars. In the past, FSP concentrated on delivering such information to AID officials with forestry responsibilities. In 1987, however, this effort was broadened to include mission and bureau officers with training responsibilities in human resources development projects and scholarship programs. During trips to India and Kenya this year, the FSP Training and Education Coordinator met with mis-



FSP fosters linkages with the U.S. and foreign training community to improve forestry training in developing countries. (Photo by T. Resch.)

sion training officers and foresters to evaluate how FSP could improve its support of mission training objectives.

FSP was called upon to coordinate the training of several AID-sponsored participants during the past year. FSP recommended study locations, hosts, and itineraries for a number of study tours, and served as the primary link between study participants and hosts. The following are two examples:

- FSP assisted the Caribbean Forestry Adviser and OICD in arranging 3 months of on-the-job training with the Forest Service for a forester from St. Vincent and the Grenadines. The training was funded by AID's Regional Development Office for the Caribbean.
- A 1-month AID-funded study tour of agroforestry and dry-land forestry in the United States was arranged by FSP and OICD for five Senegalese foresters. FSP also recommended several French-speaking agroforesters with experience in West Africa to assist with interpreting for the Senegalese participants during their stay in the United States.

### Fellowships

FSP awarded a total of 21 fellowships to developing-country nationals for forestry training in FY 1987:

- Nine fellowships were awarded to participants in the Third International Seminar on Forest Administration and Management, held in October 1986. Two fellowship recipients each came from Burma, Kenya, Malaysia, and Nigeria, and one came from Belize. The participant from Belize was cofunded with Partners of the Americas.
- In support of the AID Bureau of Science and Technology's (S&T's) objective of disseminating technology on the agroforestry technique of alley cropping, FSP fellowships were awarded to a Chadian and a Sudanese to attend the April 1987 Alley Cropping and Alley Farming Workshop in Nigeria. FSP also awarded a fellowship to a Sierra Leonean alley cropping scientist to attend the June 1987 *Gliricidia sepium* Management and Improvement Workshop in Costa Rica.
- FSP helped AID/Panama support the participation of a Panamanian at the Seminar on the Management of Tropical Rainforests in Central America, held in November 1986 in Honduras.



FSP supported participants in an alley cropping workshop in Nigeria and funded publication of a comprehensive Spanish-language agroforestry training manual. (Photo by P. Durst.)

- To contribute to its goal of increasing the number of women receiving forestry training, FSP awarded three fellowships to women scientists to attend the November 1986 Symposium on Current Topics in Forest Research: Emphasis on Contributions by Women Scientists. The recipients were from India, Ecuador, and Senegal.
- FSP encourages developing-country students studying forestry in the United States to become active in professional societies, such as the Society of American Foresters (SAF) and the International Society of Tropical Foresters (ISTF). To stimulate interest in these societies, FSP sent five U.S.-based students (one each from the Dominican Republic, India, Kenya, Nepal, and Sudan) to the 1986 SAF National Convention.

In addition to these fellowships, FSP funded the training of four Ecuadorean wood products specialists

under the Forestry Private Enterprise Initiative (see Chapter 6).

## Training Materials

Three major training publications were funded by FSP in FY 1987: *Sistemas Agroforestales: Principios y Aplicaciones en los Trópicos*, *Profiles of U.S.A. Forestry Schools*, and *Management of the Forests of Tropical America: Prospects and Technologies*.

### *Sistemas Agroforestales*

The Spanish-language agroforestry textbook *Sistemas Agroforestales: Principios y Aplicaciones en los Trópicos*, was written and produced through a

cooperative agreement with the Organization for Tropical Studies (OTS) and the Center for Tropical Agricultural Training and Research (CATIE) in Costa Rica. Agroforestry systems have a long tradition of use, but technical interest in them is a relatively recent phenomenon and their study constitutes a new discipline. A major objective of *Sistemas Agroforestales* is to stimulate the teaching of agroforestry in Latin American institutions.

The 818-page book assembles comprehensive agroforestry information in a format easily adapted for university-level classes or short courses. Seven core chapters present concepts, principles, and examples of agroforestry practices. In addition, the book includes exercises, questions, case studies, supplemental readings, an annotated bibliography, a list of information sources, an inventory of Latin American agroforestry systems, and an instructor's guide.

Copies of the book were distributed to all AID missions in Spanish-speaking countries and to key Peace Corps contacts. Copies also were sent to agriculture and forestry organizations and libraries throughout Latin America, to Peace Corps Volunteers with forestry and natural resources program responsibilities, to AID missions and contractors working with agroforestry projects, and to key host-country personnel identified by AID missions. The book is sold throughout Latin America by the Inter-American Institute for Cooperation on Agriculture (IICA) and in Costa Rica by OTS and CATIE.

*Sistemas Agroforestales* has already proved useful. Since its publication in February 1987, it has been used for a Japan-sponsored international short course in agroforestry at CATIE; a short course in agroforestry at the Agricultural School in Zamorano, Honduras; a one-semester graduate-level course in agroforestry systems at CATIE; the OTS Tropical Biology Course; the OTS Tropical Agro-Ecology Course; and the OTS short course in agroforestry. FSP's Agroforestry Coordinator introduced the book to Associate Peace Corps Directors from Latin America at their forestry workshop in the Dominican Republic in August 1987.

### **Profiles of U.S.A. Forestry Schools**

The second training-related publication produced in FY 1987 was a revision of FSP's popular *Profiles of U.S.A. Forestry Schools*. This directory describes the educational, research, and extension resources that

U.S. forestry schools offer students. Detailed profiles are presented for all schools accredited by SAF and for consortia having forestry training capabilities. Institutions that meet SAF's standards for training forestry technicians are also listed, along with contacts and addresses where more information can be obtained.

The book can be used to—

- match the educational needs of students with appropriate institutions,
- identify potential "twinning" arrangements between foreign institutions and U.S. forestry schools,
- serve as a reference for incorporating forestry education and training activities in project and program design, and
- assist foreign organizations in identifying U.S. institutions for collaboration and for training their personnel.

### **Management of the Forests of Tropical America**

The third publication is *Management of the Forests of Tropical America: Prospects and Technologies*, the proceedings of a conference sponsored by FSP, AID, OICD, ISTF, the Puerto Rican Department of Natural Resources, and the Forest Service's Institute of Tropical Forestry and held in Puerto Rico, September 22 through 27, 1986. The conference attracted practicing foresters from the region, leading forest scientists and managers, and representatives of several international donor agencies. Contributors made presentations addressing seven different aspects of forest management in tropical America: (1) the forest management outlook, (2) the current management scene, (3) the management of natural forests, (4) plantations, (5) social forestry, (6) communication outreach, and (7) future markets.

The conference and the proceedings are expected to increase attention to tropical forest management in Latin America and the Caribbean by AID, host-country governments, and other donor agencies. The 32 papers contained in the proceedings present an overview of state-of-the-art tropical forestry practices and suggest sustainable forest management techniques for the future. The proceedings provide valuable supplemental reading for courses in tropical forest management and will be essential reading for professionals involved with the management of tropical American forests.



*FSP helped to organize and teach agroforestry courses in several countries. (Photo by K. Hunter.)*

## Training Courses

The International Seminar on Forest Administration and Management is an intensive, interactive training program for senior natural resource managers from the developing world. It focuses on strategies and methods to develop, manage, and conserve forest resources for the sustained delivery of goods and services. The University of Michigan and the Forest Service cooperatively conduct the seminar, which travels to a number of locations in the eastern United States. The seminar was conceived by FSP and was instituted in 1984 by agreements between OICD, the Forest Service, and the University of Michigan.

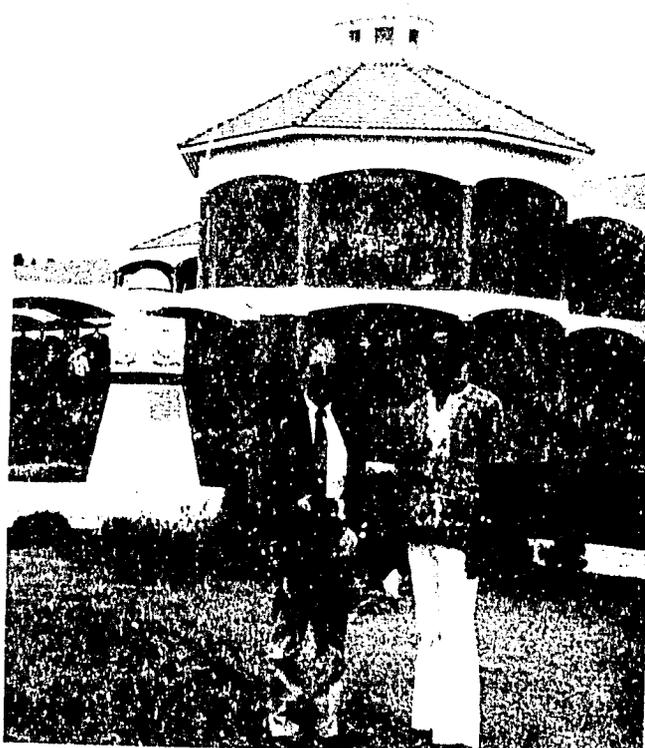
FSP funded all 23 participants at the first seminar, 11 of 28 at the second, and 9 of 25 at the third, which was held in FY 1987. As planned, the seminar is approaching financial self-sufficiency as AID missions and other sponsors increasingly fund participants directly. Only 1 of the 26 participants in the fourth seminar, which will start in October 1987, will be funded fully by FSP, and 2 will be cofunded with other organizations. FSP will continue to fund a limited number of participants in the seminar in the future as needed to promote specific goals of AID or to cover critical mission needs when other funding is unavailable. In addition, FSP will continue to assist the seminar by advertising it through FSP's information network, by coordinating the travel and logistics of AID-funded seminar participants, and by advising the seminar director on content and promotion.

During FY 1987 FSP began organizing a number of training courses that will be held in FY 1988. These courses are described below, in the "Outlook" section.

## Institutional Linkage and Liaison

An important FSP function is to keep the university forestry community informed about AID's forestry portfolio and other forestry development issues. This is accomplished mainly by periodic memorandums to the deans of the National Association of Professional Forestry Schools and Colleges (NAPFSC). A special effort is made to keep the deans informed of international employment opportunities for U.S. professionals. The FSP roster is a key link to universities. Through the roster, FSP identifies university personnel who are potentially qualified and available for international assignments.

To foster links between AID and the universities, the FSP Training Coordinator serves on the International Science and Education Council (ISEC) Training Committee, which coordinates AID, OICD, and university activities. In April 1986 the ISEC Training Committee cooperated with the Board for International Food and Agricultural Development to sponsor the Seminar on International Education and Training: A



*FSP's Training and Education Coordinator assessed forestry training needs in eastern and southern Africa. (Photo by S. Brown.)*

**Focus on Relevancy and Support Services.** The seminar concentrated on ways to increase the relevance of education and training programs for foreign students and on opportunities to improve the support services available to foreign students on U.S. campuses. Pertinent information from the seminar was sent to the NAPFSC deans and to AID missions with large forestry training programs.

In late FY 1987, the FSP Training and Education Coordinator visited training institutions in Zimbabwe and Kenya and met with the Forestry Adviser for AID's Regional Economic Development Services Office for Eastern and Southern Africa to assess forestry training needs in the region. Forestry colleges in Zimbabwe and Kenya have rapidly growing programs, and although they do not receive financial support from AID, they are seeking stronger ties with U.S. institutions. FSP is in a good position to help facilitate these linkages.

In Zimbabwe, the Training and Education Coordinator met with representatives of the Ministry of Education and the Association of Women's Clubs. The Ministry of Education has incorporated forestry education into the curriculum at every grade level in public schools and has extracurricular activities to promote tree planting. The Association of Women's Clubs has a program to train housewives in on-farm forestry and agroforestry. These Zimbabwean training and education programs could be useful models for other countries.

## Outlook

In addition to FSP's normal support for AID's forestry training programs, sponsorship of training participants, and liaison with universities and forestry training institutions, a number of special activities are planned for FY 1988.

FSP will take an active role in promoting the use of *Sistemas Agroforestales: Principios y Aplicaciones en los Trópicos* for teaching agroforestry in Latin America. Plans have been made to use the book for an FSP-sponsored course on analysis and design of agroforestry systems, to be held October 4 through 23,

1987, in Bolivia. The course was developed in response to a request from the AID mission in Bolivia and is being organized by the Center for the Investigation of Land Use Capability (CUMAT), a Bolivian private voluntary organization.

An agroforestry course for Pacific and Caribbean foresters to be held at CATIE in Costa Rica during June 1988 is being designed by the FSP staff, the Forest Service Pacific Islands Forester, the Caribbean Regional Forestry Adviser, AID's Regional Forestry Adviser in Costa Rica, and CATIE. The course is intended for individuals with little or no previous instruction in agroforestry. The Forest Service will sponsor participants from the American Pacific Islands, and it is anticipated that AID will sponsor participants from the Caribbean and the South Pacific.

The need for training in tree seed technology has been identified as a barrier to successful reforestation and tree-planting projects sponsored by international donors. In response to this need, FSP participated in the International Symposium on Forest Seed Problems in Africa, held in Zimbabwe in August 1986. The assembled experts reviewed a tree seed technology short course proposal prepared by the Forest Service and endorsed the idea of a short course for technicians to be held at the Eastern and Southern Africa Regional Tree Seed Centre in Harare, Zimbabwe, in September 1988. FSP, AID, and the Forest Service will organize the course.

Promoting and supporting the development of training materials and courses that support tree-planting and agroforestry activities in sub-Saharan Africa are high on FSP's agenda for FY 1988. Late in 1987 FSP entered into an agreement with CARE to finance the editing of CARE's *Agroforestry Extension Training Sourcebook*. The book will provide appropriate agroforestry training materials for nonprofessionals in sub-Saharan Africa. FSP will assist CARE in locating funds for actual publication of the book after a camera-ready copy has been prepared.

FSP will continue efforts to develop an international network of forestry technician schools in 1988, and FSP will explore possibilities for an international conference on forestry technician training. If sufficient interest is generated, such a conference could be organized in late 1988 or early 1989.

## Chapter 5 Technical Support to Research

### Overview

AID forestry projects usually address difficult social needs of rural people, integrate forestry and agricultural practices, and rely on multipurpose tree species to provide a variety of benefits to rural families. To be successful, these approaches require overcoming a variety of technical and social obstacles. AID has long recognized the integral role of research in meeting these challenges.

FSP continued to support AID's forestry research efforts in FY 1987 by funding a major research planning workshop, identifying investigators to cooperate with AID research projects, reviewing research projects and proposals, funding specific studies, advertising and promoting other research workshops and related training opportunities, and hiring a Social Forestry Coordinator to work with AID's research initiatives.



*FSP provides technical assistance to projects conducting species trials and genetic improvement. (Photo by P. Durst.)*

FSP staff members and the Caribbean Regional Forestry Adviser were very active in reviewing and advising AID research activities in FY 1987. The Caribbean Forestry Adviser, for example, evaluated agroforestry and tree improvement research proposals for AID's Agroforestry Outreach Project in Haiti and advised the AID/Center for Tropical Agricultural Research and Training (CATIE) Tree Crop Improvement Project on research related to insect and disease resistance of fuelwood species. Similarly, FSP's Agroforestry Coordinator evaluated agroforestry research in southern Portugal and advised agroforestry research teams in a number of other countries. Two FSP staff members also served on the Office of the Science Adviser's Program in Science and Technology Cooperation Panel, evaluating research proposals on biological diversity and plant improvement.

FSP's Agroforestry Coordinator personally researched the intercropping of cacao with food crops and other trees in late 1986. He presented his findings at the Inter-American Cacao Forum in Costa Rica in January 1987.

FSP cooperated with OICD in 1987 to contract a major study of existing land use practices and the potential for agroforestry in buffer zones surrounding protected forest areas. The study, which is described in more detail in Chapter 7, compiles case studies and recommendations from leading researchers and protected-area managers from around the world. The report will provide important guidance to researchers and land managers interested in establishing agroforestry buffer zones.

Most of FSP's applied research activities in FY 1987 were carried out by the Forestry Private Enterprise Initiative (FPEI) in Ecuador, Costa Rica, and North Carolina. This research is described in detail in Chapter 6.

### IUFRO Research Planning Workshop for Latin America

In July 1987 FSP helped fund an International Union of Forestry Research Organizations (IUFRO) workshop to set priorities for forestry research in Latin America. The workshop was the third in a series, following similar FSP-supported regional workshops in Asia and Africa in 1984 and 1986, respectively. The Latin America workshop, held in Huaraz, Peru, focused on the role of multipurpose forest species in the life of rural communities. The workshop was attended by 30 Latin American

foresters and researchers and 12 representatives of donor organizations and international research institutions.

Eight research proposals were presented at the workshop—two each addressing the specific problems of three ecological zones in Latin America (arid and semiarid lowlands, humid lowlands, and highlands) and two broad-based proposals for research on the sociological aspects of multipurpose species and management information systems. Proposals were critically reviewed by the workshop participants and are being revised for final presentation by IUFRO to the international donor community and the national planning authorities in each of the participating Latin American countries.

### Graduate Research Studies

In 1985 FSP agreed to support five graduate research studies in an effort to foster expanded



*FSP helped fund an IUFRO workshop to set priorities for research on multi-purpose trees in Latin America. (Photo by P. Durst.)*



*FSP's Social Forestry Coordinator works closely with the forestry and fuelwood studies conducted by AID's F/FRED project. (Photo by T. Resch.)*

cooperation between developing-country institutions and U.S. universities. Two studies were completed in 1986, and studies are still in progress on the effect of light exposure level on growth of five tropical tree species in Panama (Yale University), reforestation of degraded lands and the impact on water quality in western Sri Lanka (University of Georgia), and erosion control practices to enhance watershed development (University of Tennessee). These three studies will be completed in FY 1988.

### Social Sciences in Forestry

The interactions of rural people with the forests in which they live have been recognized as important for a number of years, but such interactions have never been clearly understood by development workers. In recent years AID has initiated a significant research agenda that will improve understanding of the needs,

concerns, and motivations of forest dwellers and the impacts they have on the forest.

Near the end of FY 1987, FSP began implementing a new Resources Support Services Agreement to provide technical social science services to AID's research efforts. FSP's Social Forestry Coordinator joined the staff in September 1987 and is working closely with AID's Forestry/Fuelwood Research and Development (F/FRED) project, which is being implemented by Winrock International with support from AID's Office of Forestry, Environment, and Natural Resources (FENR), AID's Office of Rural and Institutional Development (RD), and the AID Bureau for Asia and the Near East's (ANE's) Environment and Natural Resources Office (ENR). Social forestry research is a major focus of the F/FRED project in Asia.

In addition to work with the F/FRED project, FSP's Social Forestry Coordinator monitors and advises on related social science issues for AID missions and bureaus, the Peace Corps, OICD, and the Forest Service.

## **Outlook**

FSP expects to continue providing direct guidance to AID's forestry research activities in the future by reviewing research proposals, advising on research design and methods, and evaluating research

progress. As it has in the past, FSP also will refer leading researchers from the FSP roster to consult and direct the research initiatives of AID missions and bureaus and cooperating organizations.

FSP is currently reviewing a proposal to adapt a U.S. forestry economic analysis computer program for use in Latin America. Software and documentation would be translated to Spanish, and computer programs would be adapted to appropriate products and management activities and to the units of measure commonly used in Latin America. The converted software could prove extremely useful to Latin American analysts and researchers. FSP is considering a proposal to cofund the project with the Institute of International Agriculture and Michigan State University.

Although the FSP social forestry initiative is very new, plans have been made to establish networks in the socioeconomic and institutional aspects of forestry and fuelwood research in FY 1988. FSP's Social Forestry Coordinator expects to assist the F/FRED project in developing informational data bases to support its research efforts. FSP also anticipates working closely with the F/FRED staff to strengthen its ties with social scientists in other institutions and other international aid agencies.

FSP's most ambitious applied research activities will continue to be carried out by FPEI, as described in Chapter 6.

## Chapter 6 Forestry Private Enterprise

The Forestry Private Enterprise Initiative (FPEI) spearheads FSP's efforts to advance forestry development through the private sector in developing countries. FPEI is implemented by the Southeastern Center for Forest Economics Research (SCFER) with funds provided by the AID Office of Forestry, Environment, and Natural Resources (FENR) through agreements with OICD and the Forest Service. The principal SCFER institutions working with FPEI are North Carolina State University (NCSU), Duke University, and the Forest Service's Southeastern Forest Experiment Station.

FY 1987 proved to be the most active and productive year for FPEI since the project began in 1984. Significant results were achieved by both the market development demonstration component in Ecuador (the Private Forestry Initiative for Development (INFORDE)) and the research component, based in North Carolina.

### Market Development Demonstration

FY 1987 marked the second complete year of INFORDE market development activities in Ecuador. Project activities promote private-sector forestry development from several perspectives. The overriding premise is that greater appreciation of the value of wood products leads to greater conservation and better management of forest resources. Efforts have been made to expand markets and improve the quality of wood products. Programs to reduce processing wastes and encourage the use of noncommercial tree species have been pursued. Considerable emphasis has been placed on training, and efforts have been made to strengthen forestry and wood products institutions. To complement market and product development, the project has worked to increase wood supplies by promoting plantation establishment and improved natural forest management. INFORDE has also forged links with Ecuador's environmental community by pursuing studies in support of national parks and the nature tourism industry.

### Activities

INFORDE's 1987 activities can be broadly categorized as export development, domestic market development, institutional development, training, and promotion of plantations. Each is discussed below.

**Export Development.** The FPEI Market Development Specialist continued to work closely with Ecuador's Wood Products Manufacturers Association (AIMA) to expand and strengthen overseas marketing contacts. The INFORDE-sponsored furniture export program achieved its first major successes in FY 1987 by selling two 20-foot containers of furniture to buyers in New Jersey and Puerto Rico. The newly formed INFORDE/AIMA-backed furniture exporting consortium now has orders for several 40-foot containers of furniture; it expects to fill the orders in 1988. A major problem for smaller manufacturers in Ecuador has been the unavailability of high-quality finishes needed to produce furniture that is readily accepted by international buyers. INFORDE has helped overcome the problem by negotiating sales of high-quality finishes from a North Carolina chemical producer.

INFORDE was also instrumental in improving contacts between AIMA and the International Hardwood Products Association, resulting in early advance sales of most traditional Ecuadorean wood exports in 1987.

A quality control and international recertification program for export and domestic products also was developed during 1987. The program will be fully implemented if the Center for Technical Support to Wood Products and Furniture Industries of Ecuador (CORMADERA) begins operating in 1988.

**Domestic Market Development.** INFORDE facilitated the construction and assembly of a successful prototype wooden building over an 8-day period during a National Construction Fair in Quito, Ecuador, in late 1986. After serving as the venue for a



*INFORDE promoted the use of wood in construction during a National Construction Fair in Quito, Ecuador. (Photo by V. Molinos.)*



*FPEI published results of a detailed study of the economic returns to investments in forest plantations in Ecuador. (Photo by C. D. Ingram.)*

series of policy meetings with public building officials, the prototype was relocated to a Quito public park for use as an art gallery. A private, nonprofit foundation has managed the gallery since February 1987 and has presented over a dozen exhibits highlighting the work of a variety of artists.

Large-scale commercial projects, using standard construction designs, are now being considered by the same group of architects, builders, and wood products suppliers who worked together to develop the INFORDE/AIMA prototype. For example, the group is preparing a bid for a contract to build 400 Inter-American Development Bank (IDB)-financed rural schools over a 2-year period. INFORDE is assisting the group to prepare its proposals for this and other commercial projects.

To provide current market information and increase the level of awareness regarding the value of wood products, INFORDE published the second in its series of wood products price bulletins. The publica-

tion lists buying prices for several common wood products, based on product grade and market location.

**Institutional Development.** The FPEI team made considerable progress in FY 1987 in advancing the privatization of CORMADERA. The FPEI Market Development Specialist believes that creating a broad-based constituency for CORMADERA and placing it on sound financial footing is the most important challenge facing INFORDE in Ecuador. CORMADERA may have greater long-term potential for guiding Ecuador's forest-based economic development and protecting the country's environmental resources than any other INFORDE effort. A board of directors for this far-reaching privatization effort was approved in September 1987, after 11 months of INFORDE-directed negotiations. The board is balanced to include key participation by AIMA, the oldest and most professional Ecuadorean wood

products association, while ensuring adequate representation of smaller and more rural associations of producers and artisans that stand to be the major beneficiaries of CORMADERA. INFORDE is now actively seeking financial support for CORMADERA from international donors.

In addition to its support for COMADERA, INFORDE continued to assist the expansion of AIMA and helped strengthen the Institution for Socio-Economic and Technological Research (INSOTEC), a private, nonprofit institution that provides research and technical support to small Ecuadorean manufacturing industries.

**Training.** In FY 1987 INFORDE supported the training of four specialists who will work with CORMADERA when that institution begins operations. The trainees completed internships and study trips to forest products laboratories and wood products industries in the United States, Chile, Peru, Mexico, and Brazil. The trainees are now productively working with the AID/INSOTEC Small Industry Project in Santo Domingo and with AIMA's wood construction promotion efforts.

**Promotion of Plantations.** FPEI released copies of *Análisis Económico de Inversiones en Plantaciones Forestales en Ecuador* ("Economic Analysis of Investments in Forest Plantations in Ecuador") at an official ceremony in Quito in August. The publication details management costs and estimates financial returns for six common plantation species in different regions of Ecuador. Ecuadorean authorities and potential users have expressed considerable enthusiasm for the 106-page, full-color Spanish publication.

## Review

In April 1987 the INFORDE component of FPEI was formally reviewed by a two-person team from Robert R. Nathan Associates, contracted through FENR. The generally favorable report of the review team concluded:

Despite the very limited resources available to INFORDE in time and money, INFORDE has demonstrated the value of targeted technical assistance and market development for the private sector. Working in close cooperation with local institutions, INFORDE has made significant progress in a number of areas . . . INFORDE has won high praise from public and private sector organizations in Ecuador and from the donor community for the value and quality



*INFORDE has worked to improve the efficiency of small sawmills. (Photo by C. D. Ingram.)*

of its assistance program. There is no doubt that INFORDE has made a contribution to the forest sector totally out of proportion to its modest size.

The evaluation team made five main recommendations to guide INFORDE's next 18 months in Ecuador. They suggested that INFORDE—

1. Continue and expand its efforts to bring public and private groups together, especially in the areas of forest plantation promotion and development of wood-based construction
2. Give greater attention to encouraging communication and cooperation between large and small firms
3. Recognize the role of lumberyards and construction contractors and open channels of communication and cooperation with them
4. Continue to devote priority to getting CORMADERA funded and operating
5. Devote less priority to supporting development of a furniture export market

The review team also assessed key issues affecting the ability to replicate the INFORDE demonstration elsewhere. They highlighted four considerations for determining whether the INFORDE model is appropriate to a given situation: (1) the strength of existing private-sector counterpart institutions, (2) the ability to identify priority issues and tie into ongoing programs, (3) the compatibility of INFORDE-type activities with the AID mission strategy, and (4) the mix and level of resources available to the project.

The team's recommendations and comments are being given careful consideration by SCFER, AID, and FSP as the FPEI team plans its strategy for FY 1988 and beyond.

## Private Enterprise Research

FPEI research during FY 1987 concentrated on the opportunities for forestry development within the context of AID's policy paper on private enterprise, including privatization, investment promotion, subsidies and price controls, market development, new enterprise opportunities, and policy dialog.

Specific studies in FY 1987 focused on—

- Evaluation of Brazil's tax incentives for reforestation, using the example of the state of Minas Gerais;
- Financial and economic investment profiles for plantations in Ecuador;
- The international clientele served by the FS Forest Products Laboratory;
- Income and employment of forest-based industries in developing countries as a guide for project proposals and planning;
- Investment and trade in Association of Southeast Asian Nations forest product sectors;
- Development of an import substitution model for softwood lumber in Jamaica;
- Diagnostic studies of small sawmills and furniture plants in Ecuador; and
- Natural history and scientific tourism as an economic enterprise, including demand surveys and diagnostic studies in Ecuador, Costa Rica, Thailand, and the Philippines.

Over 20 papers and reports summarizing the results of these studies were published by FPEI scientists in FY 1987 (see Appendix D). With the completion of a number of FPEI studies in FY 1987, SCFER began producing a special series of FPEI Working Papers in June. Twenty-eight FPEI Working Papers had been released by the end of FY 1987, with several others in preparation. The papers are widely distributed by FSP and SCFER to promote the timely release of new theories, data, and findings related to private-sector forestry development. Copies of a SCFER-produced brochure describing the first 27 FPEI Working Papers were sent to all individuals on the *FSP Periodic Report* and *FSP Quarterly Memo* mailing lists in July 1987.

## Administration

In February 1987 SCFER hired a part-time administrator for the FPEI project (see Appendix C). The administrator, based at Duke University, coordinates informational needs and budget issues for all project personnel in Washington, D.C.; Quito, Ecuador; and Asheville, Raleigh (NCSU), Durham (Duke), and Research Triangle Park, North Carolina. Support staff and equipment for the Project Administrator are provided by SCFER at the FS Laboratory in Research Triangle Park.

Since joining FPEI, the Project Administrator has instituted a monthly reporting procedure to provide current information to all members of the FPEI project team, formalized the budget reporting process, and convened periodic meetings of the SCFER Executive Committee to determine project policies and develop long-range guidance for FPEI. The Project Administrator visited the FPEI market development demonstration in Quito in May 1987 to become familiar with the technical assistance and market promotion components of the project.

In early July 1987 the Project Administrator began a series of outreach efforts in an effort to broaden the FPEI project. By the end of FY 1987, the Project Administrator had participated in approximately 60 meetings and individual visits with interested parties in Washington, D.C., New York, North Carolina, and other locations.

## Outlook

Following a 2-day planning meeting at Research Triangle Park in June 1987, visits to Ecuador by the



FPEI researchers analyzed the promotion and marketing of nature tourism by developing countries. (Photo by Duke Audio-Visual.)

Project Administrator and the Principal Investigator in May and August 1987, consideration of the Robert R. Nathan Associates review of INFORDE, and several SCFER Executive Committee strategy sessions, an ambitious FPEI Work Plan for FY 1988 was drafted, reviewed, and accepted by SCFER, OICD, FSP, and FENR.

FY 1988 is expected to be the last full year of residence for the Market Development Specialist in Ecuador. Therefore many of INFORDE's activities will be geared toward ensuring that the progress already made is maintained beyond 1988. Strong efforts will be made, for example, to secure funding for COR-MADERA and establish it as a viable technical support institution. INFORDE will attempt to institutionalize quality control procedures. The capacities of local firms, consortiums, and associations to compete for commercial construction opportunities also will be strengthened. New efforts will be made to advance INFORDE's Sawmill Improvement Program and a Lumber Remanufacturing Demonstration Center.

The broad theme for FPEI research in FY 1988 will be "Policy Analysis on Small-Scale Enterprises in the Forest-Based Sector." As in FY 1987, one of the strategic objectives in 1988 will be to define studies related to one another so that they constitute a critical mass. This encourages interaction among investigators and calls more attention to the chosen theme. A second strategic objective will be to tie the research to INFORDE's activities in Ecuador. Finally, FPEI researchers hope to demonstrate the applicability of their research for other AID missions and projects.

Four major studies dominate the research agenda for FY 1988. The first will analyze employment and efficiency in the forest products industries of Ecuador. The study will quantify the employment and output of forest-based enterprises according to type, scale, and location and establish measures of resource efficiency. Not only will this study provide vital information for immediate use by the market demonstration component in Ecuador, but also it will lay the groundwork for similar studies in other AID countries.

A second study will focus on the comparative advantage of forest products from Ecuador in the world market. The study will assemble data comparing production costs in Ecuador with those in competing countries and will develop a framework for similar comparative studies in other locations.

The third 1988 FPEI study will analyze policies related to nature tourism and small and

microenterprises. This research will build on work already completed by FPEI that suggests tremendous potential for nature tourism in generating revenue, increasing rural employment, protecting the environment, and maintaining biological diversity. FY 1988 study activities will concentrate on the potential benefits of nature tourism to local residents.

The fourth FPEI study in 1988 will analyze policies that motivate large enterprises to assist smaller enterprises in growing timber. The research will focus on a large furniture enterprise in Ecuador and its strategies to assist small landowners grow timber trees for future raw material supply.

Several studies still in progress from 1987 will be completed in FY 1988, and the results will be reported as part of the FPEI Working Paper series.

For FPEI, 1988 will be an important transition year. Plans for phasing down the direct project participation in Ecuador will be completed by SCFER, FENR, OICD, and FSP. FSP will continue to work with SCFER to explore ways of efficiently employing the skills and talents of the Market Development Specialist beyond 1988. Because core funding from FENR for FPEI likely will not be sufficient to maintain the current high level of project activity beyond FY 1988, FSP will work with FPEI to seek potential cooperating organizations within AID and the larger forestry development community (for example, the AID Office of Rural and Institutional Development (RD), AID missions with private-sector development interests, large centrally funded AID projects, contractors, consulting firms, nongovernmental organizations).



*FPEI will continue to assess the potential of nature tourism for generating income and employment, protecting the environment, and maintaining biological diversity. (Photo by G. Wetterberg.)*

## Chapter 7 Agroforestry

### Mission and Bureau Support

In its first full year of existence, the FSP forestry-agriculture initiative was active in several areas. FSP's Agroforestry Coordinator supported AID mission and bureau project activities, assisted with agroforestry training, networked with other donors and development organizations, participated in workshops and conferences, and completed a series of technical studies to promote and disseminate information about agroforestry. The initiative was purposely field oriented during FY 1987.

At the AID mission and bureau levels, the Agroforestry Coordinator contributed to the "Hillside Agriculture Project Draft Technical Analysis," for the AID Jamaican mission, was part of a two-person team that evaluated the Bururi Forest Project in Burundi, was part of a team that assessed opportunities for enhancing the productivity of Portugal's dry-land agroforestry regions, advised the Napo Agroforestry Project in Ecuador, and served as a resource person at the February 1987 Agriculture and Rural Development Conference in Bangkok, Thailand.

Training activities focused on promoting use of the Spanish-language agroforestry training manual, *Sistemas Agroforestales: Principios y Aplicaciones en los Trópicos*. In this regard, the Agroforestry Coordinator assisted an AID-supported Bolivian private voluntary organization (PVO), the Center for the Investigation of Land Use Capability of Bolivia (CUMAT), in designing a national 3-week agroforestry training course (described in Chapter 4). The Agroforestry Coordinator also introduced the training manual to Latin American Associate Peace Corps Directors at an August 1987 workshop in the Dominican Republic.

### Networking Activities

The FSP Agroforestry Coordinator's networking activities were highlighted by attendance at the World Resources Institute nongovernmental organization (NGO)-PVO workshop in Bangkok, service on the AID Office of the Science Advisor proposal evaluation panel on biological diversity and plant improvement, membership in the AID Fragile Lands Advisory Group, and review of research proposals for the National Academy of Sciences Board on Science and Technology for International Development (BOSTID) Tropical Trees Program. The Agroforestry Coordinator also represented AID at the International Symposium on New Crops for Food and Industry in

Southampton, United Kingdom. A significant aspect of FSP's networking in FY 1987 involved maintaining contacts with agroforestry professionals around the world to monitor training activities and relevant agroforestry projects and programs.

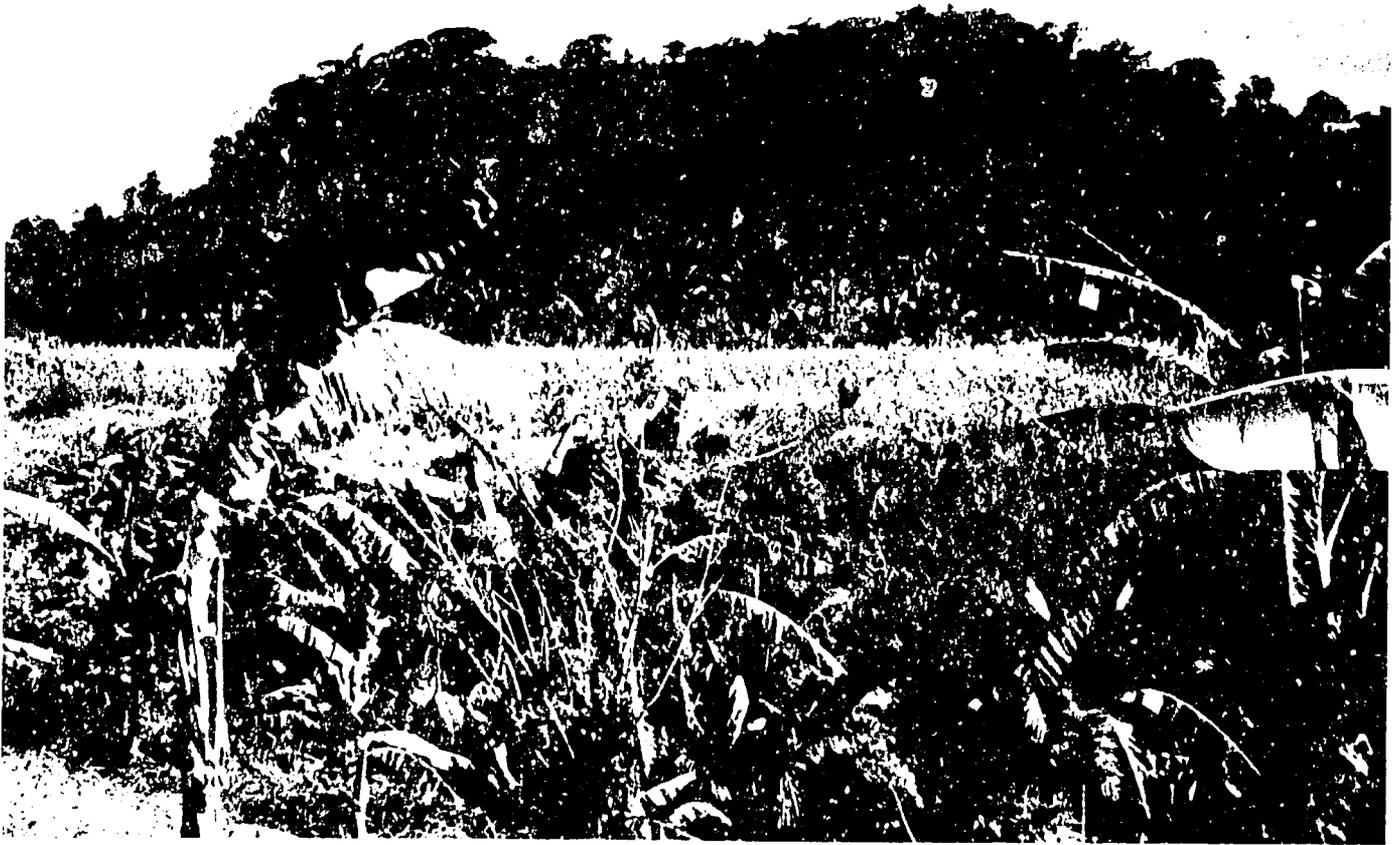
### Documents and Reports

The forestry-agriculture initiative produced three major documents in FY 1987. Field data were gathered in Latin America and the Caribbean as background information for a report entitled "The Potential Contribution of Agroforestry Species to Small Farmer Cocoa Growing," presented at the Inter-American Cocoa Forum, held in Costa Rica in January 1987. The study recommended rehabilitating old cocoa orchards with improved plant materials and suggested alternative cultivation patterns to help small farmers increase cocoa production. A manuscript was submitted for inclusion in the forum's proceedings, which will be published by the Pan American Development Foundation.

A second document, entitled "Buffer Zone Agroforestry in Tropical Forest Regions," was produced as a result of an FSP-funded state-of-the-art agroforestry study. The report recommends five criteria for identifying areas where agroforestry buffer zone projects can be most effective. It suggests that such projects should focus on areas with (1) poor resource availability outside the protected area, (2) recently constructed access roads into the forested areas, (3) high levels of biological diversity



FSP's Agroforestry Coordinator presented findings on the intercropping of cacao with food crops at a conference in Central America. (Photo by D. Johnson.)



FSP funded a study of buffer zone agroforestry practices. (Photo by P. Durst.)

within the protected area, (4) tourism potential, and (5) significant forest fragments still remaining outside the protected area.

The third document was the *Abstract Bibliography of Agroforestry Articles from Agroforestry Systems and The International Tree Crops Journal 1980-1986*. The bibliography provides practitioners and researchers with a quick means of accessing a broad range of agroforestry topics that have been investigated by scientists throughout the world.

The three documents were widely distributed and publicized by FSP through its extensive network of contacts.

## Outlook

Agroforestry activities are expected to continue at a brisk pace in FY 1988. FSP's Agroforestry and Latin

America Coordinators are scheduled to participate as instructors in the National Course on Analysis and Design of Agroforestry Systems in Bolivia, October 4 through 23, 1987. This course will use *Sistemas Agroforestales* to provide a theoretical base and will include a field practicum to examine farming systems among colonists in the Upper Amazon Basin. FSP's Agroforestry Coordinator will make a presentation, "Palms as Multipurpose Cash and Subsistence Crops," at the Forestry/Fuelwood Research and Development Project (F/FRED) workshop on multipurpose tree species for small farm use in November 1987 in Pattaya, Thailand, and will attend the International Rattan Seminar in Chiang Mai, Thailand.

FSP is planning a 1-day workshop in early 1988 to discuss strategies for advancing agroforestry in development. Invitees will include Washington, D.C.-based representatives from AID, the Peace Corps, PVOs, NGOs, conservation organizations, and the development banks. FSP also plans to study present

and planned AID-supported agroforestry activities. The investigation will draw upon FSP's existing data bases of forestry and natural resources projects, FSP's survey of Public Law 480 activities, the Energy/Development International report on agroforestry technology transfer to NGOs and PVOs in Africa, and the findings of the 1-day FSP agroforestry workshop.

Prospective field activities in 1988 include a mission to Honduras to provide technical advice to an AID-supported crop diversification program and participation in an AID-Peace Corps workshop on watershed and soil conservation for Peace Corps

Volunteers, AID employees, host-country agencies, and NGOs in Latin America.

The 2-year FSP forestry-agriculture initiative is scheduled to terminate at the end of March 1988. The interface between forestry and agriculture is clearly of increasing importance to the Agency, and support of agroforestry by AID missions is increasing. However, at present, the AID Office of Forestry, Environment, and Natural Resources (FENR) is not expected to provide FSP with sufficient funds both to continue this initiative through FY 1988 and on into FY 1989 and to maintain the full range of services that FSP otherwise provides.

# Chapter 8 Forestry Supported by Food Aid and Voluntary Organizations

FSP has assisted AID's food-aid-supported forestry activities and AID-funded forestry work with private voluntary organizations (PVOs) and nongovernmental organizations (NGOs) for a number of years. In late 1986, however, the AID Office of Forestry, Environment, and Natural Resources (FENR)-funded Forest Resources Management Project (FRM) was amended to increase Peace Corps and FSP capacities to support such activities. Both FSP and the Peace Corps have hired additional staff to work in this endeavor. The Forest Service is matching AID's contribution toward the salary and benefits of the FSP Food and Voluntary Assistance Coordinator, who works in close cooperation with his counterpart in the Peace Corps' Office of Training and Program Support.

## Scope of FSP Involvement

FSP provides technical advice to food aid forestry projects funded by titles I, II, and III of Public Law 480; section 416 of the Agricultural Act; supporting dollar programs; and local currency available from the Commodity Import Program and the Economic Support Fund. Forestry and related natural resource activities funded under these programs include forestry, windbreaks, sand dune stabilization, reforestation, agroforestry, soil conservation, and watershed management (see box below).

## Areas of Concentration

FSP's efforts to improve the developmental impacts of food-aid-supported or PVO- or NGO-implemented



*Food-for-work programs stabilize sand dunes in Africa. (Photo by T. Geary.)*

forestry and natural resource activities in FY 1987 were concentrated in six areas:

1. **Gathering, maintaining, and monitoring worldwide information on food-aid-supported forestry projects and activities.** As noted in Chapter 3, an FSP consultant completed a study of food-aid-supported forestry projects in FY 1987 and established a computerized system for identifying and monitoring food aid forestry activities. The initial survey identified over 100 United States-funded food aid projects with some type of forestry or natural resource development activity.
2. **Increasing the long-term impact of food-aid-supported forestry development.** Greater attention is now being paid to the integration and

Uses of Food for Forestry		
<p><b>Food for Employment</b></p> <ul style="list-style-type: none"> <li>Public lands forestation</li> <li>Road building</li> <li>Direct seeding</li> <li>Weeding</li> <li>Soil conservation measures</li> <li>Public areas planting</li> </ul>	<p><b>Food for Fallow</b></p> <ul style="list-style-type: none"> <li>Tree establishment period</li> <li>Resettlement plantings</li> <li>Tree survival</li> </ul>	<p><b>Food for Protection</b></p> <ul style="list-style-type: none"> <li>Fire control squads</li> <li>Grazing control</li> <li>Tree and plantation protection</li> <li>Forest guards</li> </ul>
<p><b>Food for Products</b></p> <ul style="list-style-type: none"> <li>Tree seedlings</li> <li>Tree seeds</li> <li>Shading and fencing material</li> <li>Gully fill</li> <li>Dune stabilization materials</li> </ul>	<p><b>Food for Training</b></p> <ul style="list-style-type: none"> <li>Extension worker salary</li> <li>Participant meals</li> <li>Participant salary</li> </ul>	<p><b>Food for Incentives</b></p> <ul style="list-style-type: none"> <li>Meals for volunteers</li> <li>Salary augmentation</li> </ul>
		<p><b>Food for Local Currency</b></p> <ul style="list-style-type: none"> <li>All forestry activities</li> </ul>

reinforcement of all development resources, and food aid is increasingly recognized for its potential to advance forestry development objectives. During FY 1987 FSP advanced this focus by increasing the AID Africa Bureau's awareness of the food aid programming and PVO and NGO programming opportunities for the Natural Resources Management Project in sub-Saharan Africa; advising on the restructuring of AID's Office of Food for Peace, within the Bureau for Food for Peace and Voluntary Assistance (FVA); encouraging rotations of senior AID staff to and from FVA to provide AID with a better understanding of food aid programs; heightening the interest in food-aid-supported forestry at three AID-Interaction workshops and the Food Aid 87 Conference; and planning collaborative food aid programs and activities for AID and the Peace Corps.

3. **Providing increased technical assistance for food-aid-supported forestry activities.** The FSP Food and Voluntary Assistance Coordinator participated in the final evaluation of the \$28 million Senegal title III (Public Law 480) food aid program, of which \$9.6 million was used to fund forestry-related activities. During its active period, this was the largest forestry project in the AID Africa Bureau's forestry portfolio. It is frequently cited as a mission and bureau success. The Food Aid and Voluntary Assistance Coordinator also assisted in the midterm evaluation of the Uganda Village Forestry Project, funded by the FVA Office of Private and Voluntary Cooperation (PVC) and implemented by CARE. The evaluation endorsed the project's bare root tree seedling production methods for *Eucalyptus* and *Cupressus* and encouraged the project to expand its agroforestry extension activities. The CARE project is now



*FSP participated in an evaluation of food-aid-supported forestry activities in Senegal. (Photo by T. Resch.)*

merged with a project funded by Denmark and the World Bank and is the first example of CARE-World Bank collaboration.

4. **Coordinating with AID regional bureaus, FVA, Food for Peace officers, and related agencies and individuals.** During FY 1987, FSP established a communications network with overseas-based Food for Peace officers in AID missions and U.S. embassies and with host-government officials to facilitate the exchange of information related to food aid programs. Efforts were also made to coordinate with Washington-based organizations with food aid interests, such as the U.S. Department of Agriculture (USDA) Foreign Agricultural Service, the USDA Economic Research Service, the USDA Agricultural Stabilization and Conservation Service, the USDA Working Group on Food Aid, the State Department (Bureau of Economic and Business Affairs), the Treasury Department, the Commerce Department, the Office of Management and Budget, and the USDA Office of International Cooperation and Development. FSP also worked closely with Peace Corps staff and Volunteers to improve, expand, and increase the effectiveness of Peace Corps participation in food-aid-supported forestry projects.
5. **Assisting AID and Peace Corps country missions with project identification, formulation, execution, and evaluation.** Besides the Peace Corps-related activities already mentioned, FSP collaborated with the Peace Corps to organize the Food Aid and Forestry Workshop held in Mombasa, Kenya, in May 1987. The workshop was attended by representatives from AID, the Peace Corps, government ministries, international PVOs, and NGOs from Botswana, the Gambia, Ghana, Kenya, Lesotho, Rwanda, Sierra Leone, and Somalia. As a result of the workshop, several new, innovative forestry and food aid activities are being planned by the participating organizations. The FSP Food and Voluntary Assistance Coordinator and Peace Corps officials are currently planning a similar food aid and forestry workshop to be held in Guatemala in February 1988.
6. **Cooperating closely with other related institutions and PVOs.** FSP continued to work closely with PVOs at both the international and the local levels, especially Catholic Relief Services, CARE, the Adventist Development and Relief Agency, Church World Services, Lutheran World Relief, Save the Children, Africare, and others with an interest and involvement in food-aid-supported

forestry project activities. FSP also facilitated greater interaction between officials of the World Food Program (WFP) and AID missions concerning WFP forestry project activities.

## Outlook

Building on the gains made during the first year of focused activity in food aid and forestry, FSP is planning a busy agenda of food aid activities and technical support in FY 1988. Specific activities planned for 1988 include the following:

- Organizing and participating in the second, third and fourth Food Aid and Forestry Collaborative Workshops, to be held in Central America, Francophone Africa, and Asia-Near East
- Presenting a poster session, entitled "Food Aid: A Major Force in Tropical Forestation," at the Society of American Foresters' National Convention
- Writing, publishing, and distributing *Food Aid and Forestry: A Programming Primer*, to help expand the use of food aid to meet forestry development objectives
- Examining opportunities for placing Peace Corps Volunteers in Tunisia to work in agriculture, range management, and forestry in support of a WFP integrated rural development project
- Continuing technical assistance to the FVA/PVC Office in the management of its forestry and natural resources portfolio, including AID's existing grants to CARE, the World Wildlife Fund, and the Global Tomorrow Coalition, as well as other grants that may be awarded in FY 1988.



Food aid is frequently used to fund the protection of forest plantations against fire and grazing. (Photo by P. Durst.)

## Appendix A

### FSP Roster Use, Fiscal Year 1987

Request Date	Requester	Region	Location	Duration (yrs, wks)	Start Date	Specialty	
10/1/86	NFTA	ANE	Hawaii	2,0	11/86	Agroforestry	
	ARD	ANE	Pakistan	2,0	11/86	Agronomy	
	FAO	EUR	Italy	2,0	12/86	Harvesting	
	ICRAF	AFR	Kenya	2,0	11/86	Agroforestry	
	CATIE	LAC	Costa Rica	2,0	1/87	Biometrics, mensuration	
				2,0	1/87	Sociology, communications	
				2,0	1/87	Ecology, botany	
11/1/86	FS	AFR	Washington, D.C.	0,8	11/86	FS, Africa	
	World Bank	AFR	Washington, D.C.	0,2	11/86	Economics	
	FS	AFR	Washington, D.C.	2,0	1/87	FS, USGO, French	
	AID	ANE	Pakistan	0,13	1/87	Economics	
11/10/86	FS	LAC	Honduras	0,4	1/87	Fire, Spanish	
11/13/86	FS	LAC	Washington, D.C.	2,0	2/87	FS, USGO, Spanish	
11/15/86	World Bank	AFR	Ghana	0,2	11/86	Economics	
11/20/86	World Bank	ANE	Bhutan	0,5	1/87	Economics	
				0,5	1/87	Entomology	
12/1/86	AID	LAC	Ecuador	0,4	2/87	Products, utilization, furniture	
		AFR	Washington, D.C.	2,0	1/87	Forestry, French	
	PADF	LAC	Haiti	2,0	1/87	Agroforestry, nursery management	
	AID (DESFIL)	LAC	Ecuador	1,0	1/87	Agroforestry	
	Univ. of Florida	Global	Florida	1,0	6/87	Agroforestry	
	World Bank	LAC	Dominican Republic	0,4	1/87	Economics	
	FS	Global	Global study	0,4	1/87	Agroforestry	
	12/3/86	FAO	ANE	Thailand	2,0	1/87	Extension
		FS	Global	Global assignments	0,4	1/87	Soil science, hydrology
	12/24/86	Univ. of Maine	LAC	Haiti	2,0	2/87	Silviculture
1/12/87	Winrock	ANE	Pakistan	2,0	3/87	Training	
1/21/87	IDB	LAC	Ecuador	0,6	3/87	Economics, plantation management	
	FAO	AFR	Regional	0,12	3/87	Range management	
	OICD	AFR	Regional	0,8	6/87	Entomology, French	
				0,8	6/87	Entomology	
	Peace Corps	LAC	Paraguay	0,4	2/87	Project design	
	AID	LAC	Panama	1,0	3/87	Business management, communications	
				2,0	3/87	Policy, management	
1/23/87	FS	Global	Washington, D.C.	0,6	2/87	Data processing	
	AID	LAC	Mexico	0,1	2/87	Charcoal	
1/27/87	AID	ANE	Portugal	0,3	5/87	Agroforestry	

**Appendix A**  
**FSP Roster Use, Fiscal Year 1987 (continued)**

Request Date	Requester	Region	Location	Duration (yrs, wks)	Start Date	Specialty
2/9/87	AID	ANE	ASEAN	0, 4	4/87	Watershed management
		LAC	Honduras	2, 0	9/87	FS employees
2/9/87	AID	LAC	Honduras	2, 0	9/87	FS, Latin America experience
				2, 0	9/87	FS, Honduras experience
2/17/87	AID	LAC	Honduras	0, 2	4/87	Road construction, harvesting
		LAC	Peru	0, 6	4/87	Silviculture, management
			Regional	2, 0	7/87	Environment
3/4/87	AID	AFR	Senegal	0, 4	5/87	Economics, French
3/6/87	AID	Global	Global assignments	2, 0	6/87	Agroforestry
		LAC	Bolivia	0, 7	4/87	Agroforestry, plantation management
	FAO	EUR	Italy	3, 0	6/87	Sawmills, utilization
				3, 0	6/87	Engineering, harvesting, roads
3/16/87	FS	Global	Washington, D.C.	0, 10	5/87	Natural resources, parks and recreation
	OICD	AFR	Regional	0, 6	7/87	Range management
	AID	LAC	Bolivia	0, 4	6/87	Geology, engineering
3/24/87	AID	LAC	Regional	2, 0	5/87	Environment, natural resources
3/30/87	AID	AFR	Sudan	0, 2	5/87	Remote sensing, mensuration
4/3/87	FAC	ANE	Bhutan	2, 0	5/87	Silviculture, forest management
			Bangladesh	1, 0	5/87	Land use assessment
			Burma	1, 0	6/87	Agroforestry
	AID	LAC	Haiti	2, 0	6/87	Economics
				2, 0	5/87	Nursery establishment
4/6/87	World Bank	ANE	Indonesia	0, 4	5/87	Soil science, watershed management
	AID	ANE	Portugal	0, 2	6/87	Agroforestry, economics
			Pakistan	0, 12	4/87	Forestry
				0, 8	4/87	Economics
				0, 8	4/87	Sociology, anthropology
4/9/87	IDB	LAC	Dominican Republic	0, 8	5/87	Economics
4/16/87	FAO	ANE	Pakistan	1, 0	6/87	Watershed management
4/17/87	AID	AFR	Sudan	0, 6	5/87	Anthropology, sociology
4/22/87	FS	LAC	Honduras	3, 0	9/87	Project management
	AID	AFR	Sudan	0, 2	5/87	Soil science, agronomy
4/23/87	FAO	ANE	Pakistan	0, 2	9/87	Watershed management
5/5/87	FS	LAC	Honduras	3, 0	9/87	FS, Spanish
				3, 0	9/87	FS, senior
				2, 0	1/88	Management, mensuration, silviculture
				2, 0	1/88	FS, policy
				2, 0	1/88	FS, sawmills
	AID	Global	Washington, D.C.	0, 8	6/87	Anthropology, sociology
		AFR	Senegal	0, 3	7/87	Agroforestry

5/10/87	FAO	ANE	Pakistan	2,0		
5/10/87	FAO	ANE	Nepal	2,0	8/87	Watershed management
5/18/87	IITA	AFR	Regional	2,0	8/87	Watershed management
	FS	LAC	Puerto Rico	0,2	11/87	Agriculture, agronomy, agroforestry
5/26/87	AID (DASP)	ANE	China	0,3	5/87	Watershed management, soil science
	AID	AFR	Niger	0,16	7/87	FS, Chinese
5/28/87	AID	AFR	Cameroon	1,0	7/87	Fire, aviation
6/1/87	AID	ANE	Regional	2,0	8/87	Agriculture, biometrics, remote sensing
		AFR	Pakistan	0,4	9/87	Ecology, economics, environment
	Peace Corps	LAC	Sudan	0,2	6/87	Pulp, paper
6/8/87	AID	AFR	Paraguay	0,12	6/87	Economics
6/12/87	AID	LAC	Madagascar	0,5	6/87	Agroforestry, nursery management
6/16/87	PADF	LAC	Honduras	0,2	7/87	Agroforestry, French
6/30/87	AID	LAC	Haiti	3,0	7/87	Land use assessment
		AFR	Sudan	0,24	8/87	Nursery management
		LAC	Regional	2,0	7/87	Agroforestry
		LAC	Ecuador	2,0	9/87	Ecology, environment, natural resources
7/1/87	AID	ANE	Morocco	2,0	9/87	Agroforestry
7/6/87	AID	LAC	Regional	0,4	9/87	Pathology
7/7/87	FAO	EUR	Italy	2,0	8/87	Environment, French
7/10/87	WWF	Global	Washington, D.C.	3,0	10/87	Ecology, environment, natural resources
7/20/87	Smithsonian	LAC	Panama	3,0	9/87	Writer, editor
	AID	AFR	Niger	0,24	9/87	Writer, communications
7/21/87	AID	AFR	Niger	0,4	9/87	Wildlife management, zoology, ecology
				0,4	8/87	Biometrics, mensuration, remote sensing
				0,4	8/87	Economics
7/23/87	AID	ANE	Gambia	0,7	8/87	Policy, agroforestry
7/28/87	AID	ANE	Nepal	0,12	8/87	Harvesting, sawmill
7/29/87	AID	ANE	Indonesia	0,8	9/87	Economics, marketing
8/3/87	AID	ANE	ASEAN	0,4	9/87	Indonesian
8/6/87	AID	AFR	Pakistan	2,0	9/87	Watershed management
8/25/87	AID	LAC	Sudan	0,4	10/87	Agroforestry, training
	AID	AFR	Bolivia	2,0	9/87	Roads, remote sensing, geology
		LAC	Niger	0,4	11/87	Anthropology, sociology, communications
		ANE	Sahel	0,4	9/87	Remote sensing
	OICD	LAC	Haiti	2,0	1/88	Biology, botany, ecology
	ILCA	ANE	Morocco	2,0	10/87	Watershed, soil science, management
	Peace Corps	AFR	Regional	2,0	10/87	Economics, agriculture, agronomy
8/27/87	Peace Corps	LAC	Guatemala	0,4	11/87	Agriculture, training, extension
9/1/87	AID	ANE	Tunisia	0,3	10/87	Anthropology, sociology
		AFR	Somalia	0,12	11/87	Range management
	Winrock	ANE	Regional	0,12	10/87	Agroforestry
9/3/87	AID (DASP)	AFR	Niger	3,0	10/87	Arid-zone forestry, administration
				0,5	11/87	Agroforestry
					9/87	Communications, emergency coordination

**Appendix A**  
**FSP Roster Use, Fiscal Year 1987 (continued)**

Request Date	Requester	Region	Location	Duration (yrs, wks)	Start Date	Specialty
9/10/87	AID	AFR	Cape Verde	0, 4	11/87	Arid-zone forestry, ecology
				0, 4	11/87	Economics
		ANE	China	0, 4	11/87	Arid-zone forestry, watershed management
			Nepal	0, 24	11/87	Harvesting
9/15/87	Chemonics	LAC	Bolivia	0, 4	10/87	Project design
9/23/87	IIED	LAC	Regional	0, 4	10/87	Ecology, natural resources
		AFR	Regional	2, 0	11/87	Extension
	Winrock	ANE	Pakistan	2, 0	11/87	Research design
9/28/87	FAO	EUR	Italy	2, 0	11/87	Agroforestry, arid-zone, forestry, soil science
				3, 0	1/88	Economics, export-import trading
9/29/87	FAO	LAC	Venezuela	3, 0	1/88	Soil science, land use assessment
				0, 10	11/87	Silviculture, plantation management

**Abbreviations:**

AFR Africa  
 ANE Asia and the Near East  
 ARD Associates in Rural Development  
 ASEAN Association of Southeast Asian Nations  
 CATIE Center for Tropical Agricultural Research and Training,  
 Costa Rica  
 DASP U.S. Department of Agriculture Disaster Assistance  
 Support Program  
 EUR Europe  
 FAO Food and Agricultural Organization of the United Nations

FS U.S. Department of Agriculture Forest Service  
 ICRAF International Council for Research in Agroforestry, Kenya  
 IDB inter-American Development Bank  
 IIED International Institute for Environment and Development  
 IITA International Institute for Tropical Agriculture, Nigeria  
 ILCA International Livestock Centre for Africa, Ethiopia  
 LAC Latin America and the Caribbean  
 NFTA Nitrogen Fixing Tree Association  
 USGO U.S. Government  
 WWF World Wildlife Fund-Conservation Foundation

## Appendix B Overseas Travel Funded by FSP, Fiscal Year 1987

Region	Country	Dates	Names	Affiliation	Purpose	
Africa	Burundi	1/3-1/19	Dennis Johnson	FSP	Review agroforestry activities	
	Ivory Coast	4/24-5/3	LeRoy Duvall	FSP	Participate in Forestry Fuelwood Economics Workshop	
	Kenya		9/10-9/21	Thomas Geary	FSP	Explore opportunities to strengthen forestry education in eastern and southern Africa
			10/15-10/19	Tim Resch	FSP	Examine Kenya-based private voluntary organizations' and nongovernmental organizations' forestry activities
			5/21-5/30	Tim Resch	FSP	Participate in a workshop on use of Public Law 480 food aid for forestry
	Kenya, Madagascar	7/12-8/23	James Seyler	Consultant	Design a comprehensive natural resources management plan; develop a plan of cooperation for nongovernmental organizations	
	Niger		8/25-9/20	Hans Schreuder	FS	Evaluate Forestry and Land Use Project
		Senegal	1/2-2/1	Tim Resch	FSP	Evaluate the forestry component of Public Law 480 programs
			1/13-2/21	Peter Freeman	Consultant	Assist watershed management planning for the Gambia River Basin Project
	Sudan		4/20-5/4	H. Gyde Lund	FS	Assist Anti-Desertification Project
	Sudan, Zimbabwe		6/15-7/22	Robert Potter	Consultant	Advise restructuring of Sudanese forestry administration
	Uganda		10/19-10/31	Tim Resch	FSP	Evaluate Uganda Village Forestry Project
	Zimbabwe		8/19-9/9	Thomas Geary	FSP	Participate in the International Symposium on Forest Seed Problems; visit forestry training institutions
Asia and Near East	India	2/19-3/2	Thomas Geary	FSP	Participate in the International Union of Forestry Research Organizations' Agroforestry Workshop for Rural Development; diagnose training needs	
	Morocco	9/21-10/15	LeRoy Duvall	FSP	Assist in developing a biological diversity action plan	
	Philippines	10/1-10/18	Patrick Durst	FSP	Assist with the redesign of the Rainfed Resources Development Project; study potential for contract reforestation	
	Portugal	5/30-6/13	Dennis Johnson	FSP	Evaluate agroforestry research in southern Portugal	

Appendix B  
Overseas Travel Funded by FSP, Fiscal Year 1987 (continued)

Region	Country	Dates	Names	Affiliation	Purpose	
Asia and Near East	Thailand	2/15-3/1	Dennis Johnson	FSP	Participate in World Resources Institute workshop on nongovernmental organizations and the AID Bureau for Asia and the Near East Agricultural Development Conference	
Latin America and the Caribbean	Antigua	8/29-8/31	Loren Ford	FS	Advise Peace Corps agroforestry projects	
	Barbados, Grenada, Honduras	10/1-10/7	Dennis Johnson	FSP	Collect information on cacao agroforestry practices	
	Barbados, St. Vincent	8/24-8/28	Loren Ford, Kathryn Hunter	FS	Assess erosion and social problems of the Cumberland River Hydroelectric Project and Watershed Management Program	
	Belize		3/1-3/7	Loren Ford	FS	Assess AID forestry project opportunities
			8/10-8/18	Loren Ford	FS	Assist in developing a tropical forests and biological diversity action plan
	Bolivia		7/26-8/2	Dennis Johnson	FSP	Plan an agroforestry training course
			2/6-2/15	Vicente Molinos	SCFER	Coordinate training programs at wood products laboratories and wood industries
	Costa Rica		1/26-1/31	Dennis Johnson	FSP	Present agroforestry paper at Inter-American Cocoa Forum
			1/27-2/7	Jan Laarman	SCFER	Research the economic impacts of nature tourism
			6/13-7/11	Loren Ford	FS	Design insect and disease control strategy for the Center for Tropical Agricultural Research and Training (CATIE)
	Dominican Republic		6/15-6/22	Kathryn Hunter	FSP	Plan a Pacific-Caribbean agroforestry course
			8/1-8/8	Jan Laarman	SCFER	Research the economic impacts of nature tourism
	Ecuador		1/12-1/16	Loren Ford	FS	Review forestry and fragile lands activities
8/16-8/22			Dennis Johnson	FSP	Participate in the Peace Corps Program Managers' Workshop on Agroforestry	
5/15-5/24			Jan Laarman, Denise Ingram, Doug MacKinnon	SCFER	Review progress of the Forestry Private Enterprise Initiative's (INFORDE's) market demonstration project	
		8/3-8/7	Dennis Johnson	FSP	Provide technical assistance to the Ecuador Agroforestry Project	
		8/8-8/15	Jan Laarman	SCFER	Develop work plans for the Forestry Private Enterprise Initiative (INFORDE) for FY 1988	

		8/25–9/30	Jeff Prestemon	SCFER	Coordinate a survey of income and employment in Ecuador's forest industries
		10/1–12/15	Mystie Wilson	SCFER	Research wildlands tourism
		10/1–12/16	Michael Mussack	SCFER	Study potential markets for eucalyptus poles
		9/14–9/18	Kathryn Hunter	FSP	Participate in conference entitled "Sustainable Uses on Steep Slopes"
Haiti		2/5–9/30	Michael Mussack	SCFER	Research potential for sawmill improvement
		12/5–12/13	Joann Roskowski	Consultant	Assess potential for mycorrhizae introductions into Agroforestry Outreach Project nurseries
		1/26–2/5	Loren Ford	FS	Evaluate research and tree improvement proposals for Agroforestry Outreach Project
Honduras		5/27–6/2	Kathryn Hunter	FSP	Meet with CARE and Pan-American Development Foundation project officials
		4/5–4/10	Gary Wetterberg	FSP	Evaluate Forestry Development Project opportunities
		6/29–7/2	Kathryn Hunter	FSP	Write environmental assessment for Forestry Development Project
Jamaica		10/6–10/17	Loren Ford	FS	Provide technical advice to the Hillside Agriculture Project
		10/8–10/11	Dennis Johnson	FSP	Assist with preparation of a project paper for the Hillside Agriculture Project
		7/20–8/1	Loren Ford	FS	Prepare a report on protection of biological diversity; develop a subproject proposal for the Hillside Agriculture Project
Mexico		3/10–3/23	Loren Ford	FS	Participate in the United Nations Food and Agricultural Organization North American Forestry Commission Silviculture Study Group Secondary Forest Management Workshop
Panama		6/23–6/28	Kathryn Hunter	FSP	Meet with Natural Resources Management Project officials
Other	England	9/19–9/25	Dennis Johnson	FSP	Participate in the International Symposium on New Crops for Food and Industry
	Italy	5/25–5/28	Karl Van Orsdol	Consultant	Gather information on buffer zone agroforestry at the Food and Agricultural Organization of the United Nations
		6/2–6/5	Tim Resch	FSP	Consult with officials of United Nations' Food and Agricultural Organization and World Food Program
	Sweden	9/12–9/18	Dennis Johnson	FSP	Present a paper at a conference on systematic botany

**Appendix B**  
**Overseas Travel Funded by FSP, Fiscal Year 1987 (continued)**

Region	Country	Dates	Names	Affiliation	Purpose
Other	Switzerland	5/28-6/6	Karl Van Orsdol	Consultant	Gather data on buffer zone agroforestry at the International Union for Conservation of Nature and Natural Resources

**Note:** This appendix does not include any temporary duty assignments or technical assistance trips by personnel identified by FSP but funded by other sources (for example, AID missions or the Forest Service).

**Abbreviations:** FS, Forest Service; SCFER, Southeastern Center for Forest Economics Research.

## Appendix C

### Profiles of New FSP Professional Forestry Staff

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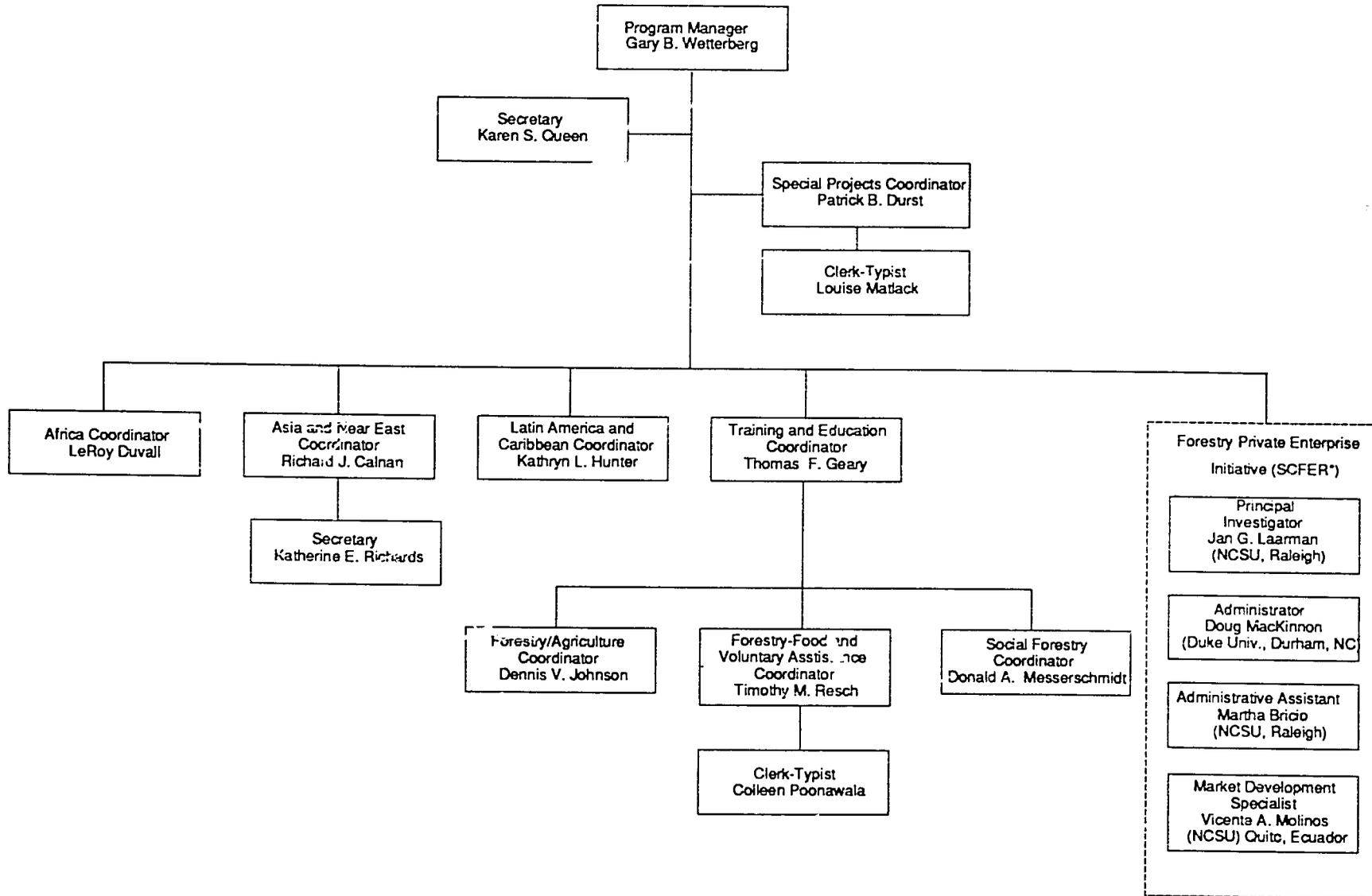
**Kathryn L. Hunter** entered on duty March 15, 1987, as the FSP Coordinator for Latin America and the Caribbean. Ms. Hunter most recently served as a Supervisory Forester on the Conecuh National Forest in Alabama, where she had primary responsibility for planning and administering the Timber Management Program. Her previous Forest Service experience includes nearly 6 years in various capacities on national forests in Tennessee (Cherokee), North Carolina (Nantahala), and Louisiana (Kisatchie). Kathryn worked 2 years as a Peace Corps forester in Honduras and has traveled extensively throughout Central America. Ms. Hunter is a certified silviculturist with a B.S. degree in forestry from the University of Idaho and an M.S. degree in forestry from Yale University. She has received letters of commendation and employee suggestion awards from the Forest Service and is listed in the *Directory of Women in International Natural Resources*. Ms. Hunter has been active in community affairs, including work with singing and theater groups, voter registration, and tutoring for illiterate adults. *Languages:* Conversationally fluent Spanish, working knowledge of French.

**LeRoy Duvall** joined the FSP staff in April 1987 as the Coordinator for Africa. He transferred to the Forest Service from the U.S. Department of Agriculture's Office of International Cooperation and Development (OICD), where he was the Forestry Adviser to the AID-funded Bururi Forest Project in Burundi, Central Africa. Mr. Duvall has a B.S. degree in forest management from the University of Minnesota and an M.S. degree in silviculture, with a minor in forest genetics and tree improvement, from the University of Washington. Mr. Duvall served as a Peace Corps Volunteer in Morocco, where he worked with the Moroccan Forestry Research Station on exotic species and provenance trials. Following Peace Corps service, Mr. Duvall joined the Forest Service and worked for 4 years on the Mi-Wok Ranger District of the Stanislaus National Forest in compartment inventory and analysis and timber sales administration. Mr. Duvall also worked as a consultant on project design and implementation in Botswana, Somalia, and Burkina Faso before joining OICD in Burundi. *Languages:* Conversationally fluent French, basic Arabic.

**Donald A. Messerschmidt**, the FSP Social Forestry Coordinator, has 24 years of development experience, including short- and long-term assignments, principally in Asia. His international experience began in 1963 as a Peace Corps Volunteer in community development in Nepal. In the early 1980's, Dr.

Messerschmidt served for 3 years as the Social Science Adviser to the AID Resource Conservation and Utilization Project in Nepal. He also has consulted for projects implemented by the German Agency for Technical Assistance (GIZ), the Food and Agricultural Organization of the United Nations, AID, and the International Centre for Integrated Mountain Development (ICIMOD). Before coming to FSP, Dr. Messerschmidt taught sociocultural anthropology, including courses in international development and world problems, at Washington State University. He also participated in the university's development and agroforestry initiatives. He has M.A. and Ph.D. degrees in anthropology from the University of Oregon, and a B.S. degree in education from the University of Alaska. He has participated in international conferences on natural resource development and common property resource management at the U.S. National Academy of Sciences, the Institute for Development Anthropology, and ICIMOD. He has authored several books and a number of articles, many of which deal with social science issues in natural resource development and management, and he is a member of the editorial advisory boards for *Mountain Research and Development* and *Practicing Anthropology*. *Languages:* Conversationally fluent Nepali, fair German, Hindi, and Urdu.

**Douglas A. MacKinnon** is the Project Administrator for the Forestry Private Enterprise Initiative. He also is professor of the practice of forestry at the Duke University School of Forestry and Environmental Studies, where he teaches courses in the business aspects of natural resources, and he is an adjunct professor at North Carolina State University. A graduate of the Stanford Executive Program, he spent 15 years with several firms in the forest products industry, holding various positions in manufacturing, land management, long-range planning, and capital budgeting. For 8 years he was a member of the faculty at the University of Michigan School of Natural Resources, and he was chairman of the forest resources program during his last 5 years there. He has been active as a consultant in both the public and the private sectors and has authored numerous reports and articles. His most recent publications deal with the fundamentals of capital investments, analysis of managerial systems, and timber sales accounting systems. Mr. MacKinnon holds a B.S. degree in industrial administration from Yale University and an M.F. degree in industrial forestry from the Yale School of Forestry.



\*The Southeastern Center for Economic Research (SCFER) is a consortium that includes North Carolina State University (NCSU), Duke University, and the U.S. Department of Agriculture Forest Service Southeastern Forest Experiment Station.

Figure C-1: FSP organizational chart.

## Appendix D

### Reports Produced or Directly Influenced by FSP During Fiscal Year 1987

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#### Reports Completed in FY 1987

- Bremer-Fox, Jennifer, and W. L. Bender.** 1987. *The Forestry Private Enterprise Initiative in Ecuador: An Assessment of INFORDE's First Eighteen Months.* Robert R. Nathan Associates, Inc., Washington, DC. 112 pp., plus appendixes.
- Burchfield, Shirley S.** 1987. *Food Aid and Forestry: An Inventory of Current and Proposed Food Aid-Supported Forestry Projects.* FSP. 49 pp.
- Durst, Patrick B.** 1986. *Financial Aspects of Contract Reforestation in the Philippines.* FSP. 92 pp.
- Durst, Patrick B.** 1986. *Natural History and Nature-Oriented Adventure Travel for Rural Development and Wildlands Management: Diagnosis of Research Needs and Project Opportunities for Thailand.* FSP. 21 pp.
- Durst, Patrick B.** 1986. *Natural History and Nature-Oriented Adventure Travel for Rural Development and Wildlands Management: Diagnosis of Research Needs and Project Opportunities for the Philippines.* FSP. 31 pp.
- Durst, Patrick B., and C. Denise Ingram.** 1987. *How Well Do Developing Countries Promote Nature-Oriented Tourism by Mail?* FPEI Working Paper No. 25. Southeastern Center for Forest Economics Research, Research Triangle Park, NC. 18 pp. (Also forthcoming in *Tourism Management*.)
- Durst, Patrick B., C. Denise Ingram, and Jan G. Laarman.** 1986. "Inaccuracies in Forest Products Trade Statistics." *Forest Products Journal* 36(9):55-59.
- Figuroa Colon, Julio C., Frank H. Wadsworth, and Susan Branham (eds.).** 1987. *Management of the Forests of Tropical America: Prospects and Technologies.* Proceedings a conference held September 22-27, 1986. U.S. Department of Agriculture Forest Service Institute of Tropical Forestry, San Juan, PR. 469 pp.
- Ford, Loren B.** 1986. "Biological and Genetic Control of the *Leucaena* Psyllid: Caribbean Regional Report." Presented at the Workshop on Biological and Genetic Control of the *Leucaena* Psyllid in Asia and the Pacific, November 4-6, 1986, Honolulu, HI. 1 p.
- Ford, Loren B.** 1986. "Exploration of Natural Enemies of *Heteropsylla cubana* in Latin America and the Caribbean." Presented at the Workshop on Biological and Genetic Control of the *Leucaena* Psyllid in Asia and the Pacific, November 4-6, 1986, Honolulu, HI. 2 pp.
- Ford, Loren B.** 1986. "Hillside Agriculture Project Draft Technical Analysis." Prepared for AID/Jamaica. 17 pp.
- Ford, Loren B.** 1987. "Draft Forestry Project Concept Paper." Prepared for AID/Belize. 4 pp.
- Ford, Loren B.** 1987. "Draft Proposal: Agroforestry Promotion, Research and Development." Prepared for AID/Jamaica. 18 pp.
- Ford, Loren B.** 1987. "Draft Tropical Forests and Biological Diversity Analysis." Prepared for AID/Jamaica. 12 pp.
- Ford, Loren B.** 1987. "Experiences with *Gliricidia sepium* (Jacq.) Steud in the Caribbean." Presented at the Workshop on Management and Improvement of *Gliricidia sepium* and Other Nitrogen Fixing Trees, June 21-27, 1987, Turrialba, Costa Rica. 6 pp.
- Ford, Loren B.** 1987. "Forest Insect and Disease Strategy for the Tree Crop Production Project, CATIE, Turrialba, Costa Rica." Presented for the Center for Tropical Agricultural Research and Training, Costa Rica (CATIE). 12 pp., plus appendix.
- Ford, Loren B., Kathryn Hunter, and Wilson Eedy.** 1987. "Cumberland Assessment Team Report." Prepared for AID/Barbados. 29 pp.
- Ford, Loren B., and Mark Shaffer.** 1987. "Draft Tropical Forests and Biological Diversity Analysis." Prepared for AID/Belize. 24 pp.
- FSP.** 1987. *Progress Report of the Forestry Support Program (FSP) 1986.* U.S. Department of Agriculture Forest Service, Washington, DC. 60 pp.
- FSP.** 1987. *Profiles of U.S.A. Forestry Schools.* U.S. Department of Agriculture Forest Service, Washington, DC. 235 pp.

- FSP Forestry Private Enterprise Initiative Private Forestry Initiative for Development (INFORDE). 1987. *Boletín informativo de precios de productores madereros*. No 2. INFORDE, Quito, Ecuador. 6 pp.
- Ingram, C. Denise, and Patrick B. Durst. 1987. *Marketing Nature-Oriented Tourism for Rural Development and Wildlands Management in Developing Countries: A Bibliography*. USDA Forest Service General Technical Report SE-44. U.S. Department of Agriculture Forest Service, Asheville, NC. 54 pp.
- Ingram, C. Denise, and Patrick B. Durst. 1987. *Nature-Oriented Travel to Developing Countries by U.S.-Based Tour Operators*. FPEI Working Paper No. 28. Southeastern Center for Forest Economics Research, Research Triangle Park, NC. 17 pp.
- Ingram, C. Denise, and Patrick B. Durst. 1987. "Nature Tourism as an Alternative Economic Opportunity for Wildlands Management and Rural Development: Marketing, Promotion, and Enterprise Development." Presented at the Fourth World Wilderness Congress, September 11-18, 1987, Colorado (proceedings forthcoming from the International Wilderness Leadership Conference). 9 pp.
- Ingram, C. Denise, Jan G. Laarman, and Michel C. Contezac. 1987. "International Technology Transfer: The Forest Products Laboratory." *Forest Products Journal* 37(7/8): 15-16.
- Janick, Jules, Dennis V. Johnson, and William B. Kurtz. 1987. "Enhancement of Productivity of Portugal's Dryland Agroforestry Regions." Prepared for Portugal's Instituto Nacional de Investigação Agrária. 49 pp.
- Johnson, Dennis V. 1986. *An Abstract Bibliography of Agroforestry: Articles from Agroforestry Systems and The International Tree Crops Journal, 1980-1986*. FSP. 69 pp.
- Johnson, Dennis V. 1987. "The Potential Contribution of Agroforestry Species to Small Farmer Cocoa Growing." Paper presented at the Inter-American Cocoa Forum, January 27-30, 1987, San Jose, Costa Rica. 10 pp.
- Johnson, Dennis V. 1987. "Systematic Problems Relative to Palm Conservation and Utilization." Paper presented at a conference entitled "Systematic Botany: A Key Science for Tropical Research and Documentation," September 14-17, 1987, Stockholm, Sweden.
- Laarman, Jan G. 1986. "Forestry and Foreign Policy: The Politics of Trade and Aid in a Sensitive World." In *Proceedings of 1986 SAF National Convention* (pp. 51-55). Society of American Foresters, Birmingham, AL.
- Laarman, Jan G. 1987. "The Economic Outlook for Forestry in Tropical America: A Hazardous Period for Projections." In Figueroa Colon et al. (eds.), *Management of the Forests of Tropical America: Prospects and Technologies* (pp. 31-48). U.S. Department of Agriculture Forest Service Institute of Tropical Forestry, San Juan, PR.
- Laarman, Jan G. 1987. "Investing in Timber and Timberland in Latin America." Presented at the Forest Products Research Society Meeting, April 28, 1987, Milwaukee, WI (proceedings forthcoming from the Forest Products Research Society). 14 pp.
- Laarman, Jan G. and Patrick B. Durst. 1987. "Nature Travel in the Tropics." *Journal of Forestry* 85(5):43-46.
- Laarman, Jan G., and Richard R. Perdue. 1987. *A Survey of Return Visits to Costa Rica by OTS Participants and Associates*. FPEI Working Paper No. 29. Southeastern Center for Economics Research, Research Triangle Park, NC. 31 pp.
- Laarman, Jan G., Gerard F. Schreuder, and Erik T. Anderson. 1987. "An Overview of Forest Products Trade in Latin America and the Caribbean Basin." Presented at the Third International Symposium on World Trade in Forest Products, University of Washington, Seattle, WA, March 18-20, 1987 (proceedings forthcoming from the University of Washington).
- Livingston, Geoffrey, and Timothy M. Resch. 1987. *Senegal PL 480 Title III Food for Development: USAID/Senegal Final Evaluation*. AID/Senegal. 63 pp.
- Lugo, Ariel E., and Loren B. Ford (eds.). 1987. *Forest Recreation in the Caribbean Islands: Proceedings of the Third Meeting of Caribbean Foresters, May 19-23,*

- 1986, *Guadeloupe*. U.S. Department of Agriculture Forest Service Institute of Tropical Forestry and the Caribbean National Forest, Rio Piedras, PR. 95 pp.
- McColough, Robert, and Dennis V. Johnson. 1987. "End of Project Review: Bururi Forestry Project (No. 695-0105)." Prepared for AID/Burundi. 12 pp., plus appendixes.
- McCormick, Ian (ed). 1987. *Análisis económico de inversiones en plantaciones forestales en Ecuador*. FSP Forestry Private Enterprise Initiative Private Forestry Initiative for Development (INFORDE), Quito, Ecuador. 106 pp.
- McKean, Cressida Sargent. 1987. "Small-Scale Manufacturing: The Potential and Limitations for Growth—the Case of Wood Products in Ecuador." Master of philosophy in development studies thesis. University of Sussex, Sussex, England. 210 pp.
- Mussack, Michael F. 1987. *Suggestions on Improving Log Supply to Artepractico's Sawmill in Cuenca, Ecuador*. FPEI Working Paper No. 24. Southeastern Center for Forest Economics Research, Research Triangle Park, NC. 45 pp.
- Organización para Estudios Tropicales (OTS) and Centro Agronomico Tropical de Investigación y Enseñanza (CATIE). 1986. *Sistemas agroforestales. principios y aplicaciones en los trópicos*. OTS, San Jose, Costa Rica. 818 pp.
- Rathin, Basu, and Thomas G. Johnson. 1987. *The Contribution of Forestry to Economic Development, with Special Reference to Employment and Income in Developing Countries: An Annotated Bibliography*. Department of Agricultural Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA. 104 pp.
- Tapp, Charles, Tim Resch, Louise Buck, and Leo Nturu. 1986. "Uganda Village Forestry Project Evaluation." Prepared for CARE, the Government of Uganda, and AID/Uganda. 39 pp.
- Wetterberg, Gary B. 1987. "Parks, Forests and Foresters in South America." *Journal of Forestry* 85(5):37-40.
- Wilson, Mystie A. 1987. *Nature-Oriented Tourism in Ecuador: Assessment of Industry Structure and Development Needs*. FPEI Working Paper No. 20. Southeastern Center for Forest Economics Research, Research Triangle Park, NC. 37 pp.
- Wilson, Mystie A., and Jan G. Laarman. 1987. *Nature Tourism and Enterprise Development in Ecuador*. FPEI Working Paper No. 27. Southeastern Center for Forest Economics Research, Research Triangle Park, NC. 22 pp. (Also submitted to *World Leisure and Recreation*.)

### Reports in Progress

- Davis, Robert. 1988. "A Strategy for the Implementation of Erosion Control Practices to Enhance Watershed Development in Ecuador." University of Tennessee, Knoxville, TN.
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